Part 121
CERTIFICATION AND OPERATIONS: AIR CARRIERS and AIR TAXI

TABLE OF CONTENTS

SUBPART A
General

121.1 Applicability

(a) Except as prescribed in paragraph (b) of this section, this Part prescribes rules governing the certification and operations of the following:
  (1) Each air operator engaging in international or domestic air transportation under an air operator certificate (AOC) issued by the Egyptian Civil Aviation Authority (ECAA). This includes both air carrier and air taxi certificates;
  (2) Each AOC holder covered by this section when engaging in charter flights or other special service operations; and
  (3) Each AOC holder when it engages in the carriage of persons or property for compensation or hire under an air operator certificate issued by the ECAA.

(b) In addition, this Part prescribes rules governing:
  (1) Each person employed or used by an air operator in operations under this Part, including the maintenance, preventive maintenance, and alteration of aircraft; and
  (2) Each person who is on-board an aircraft being operated under this Part.

(c) The rules of Part 91 apply also to the 121 certificate holders unless more stringent rules are mentioned in this Part

121.2 Definitions for the purpose of this Part

(a) "Passenger-carrying aircraft" or "passenger-carrying operation" means one carrying any person other than a person listed in 121.583, or carrying any person other than a cockpit crewmember or other crewmember, company employee, authorized government representative, or person accompanying a shipment.

(b) "Air Taxi Operations "

Operations conducted by Egyptian air operator, in an air transport service, of any of the following:
  (1) Airplane having a maximum seating capacity of less than 50, including any required crewmember seat or a maximum certificated take-off mass of less than 20,500 kg.
  (2) Any aircraft that is authorized by the ECAA president to be operated under this operation

(c) "Air carrier Operations"

Operations conducted by Egyptian air operator, in an air transport service, of any of the following:
  (1) Airplane having a maximum seating capacity of (50 or more) including any required crewmember seat and a maximum certificated take-off mass of (20,500 or more).
  (2) Any aircraft that is authorized by the ECAA president to be operated under this Subpart.

(d) "Egyptian citizen" means one of the following:
  (1) An individual who is a citizen of Egypt;
  (2) A partnership of which each member is such an individual; and
  (3) A corporation or association created or organized under the Egyptian laws of which the president and two-thirds or more of the board of directors and other managing officers thereof are such individuals and in which at least 51 percent of the voting interest is owned or controlled by persons who are Egyptian citizens.

(e) "Common carriage" means the carriage of persons or property for compensation and hire. A "common carrier" means an operation in which the main purpose is for compensation and hire.

121.3 General requirements

A person may not operate as an air operator unless that person:
(a) Is a citizen of the Arab Republic of Egypt;
(b) Obtains an air carrier or air taxi certificate; and
(c) Obtains operations specifications that prescribe the authorizations, limitations, and procedures under which each kind of operation must be conducted.

121.4 Compliance with laws, regulations and procedures

(a) The operator shall ensure that all employees when abroad know that they must comply with the laws, regulations and procedures of those States in which their operations are conducted.

(b) The operator shall ensure that all pilots are familiar with the laws, regulations and procedures, pertinent to the performance of their duties, prescribed for the areas to be traversed, the heliports to be used and the air navigation facilities relating thereto. The operator shall ensure that other members of the flight crew are familiar with such of these regulations and procedures as are pertinent to the performance of their respective duties in the operation of the helicopter.

Note.— Information for pilots and flight operations personnel on flight procedure parameters and operational procedures is contained in PANS-OPS (Doc 8168), Volume I. Criteria for the construction of visual and instrument flight procedures are contained in PANS-OPS (Doc 8168), Volume II. Obstacle clearance criteria and procedures used in certain States may differ from PANS-OPS, and knowledge of these differences is important for safety reasons.

(c) An operator or a designated representative shall have responsibility for operational control.

Note.— The rights and obligations of a State in respect to the operation of helicopters registered in that State are not affected by this provision.

(d) Responsibility for operational control shall be delegated only to the pilot-in-command and to a flight operations officer/flight dispatcher if an operator's approved method of control and supervision of flight operations requires the use of flight operations officer/flight dispatcher personnel.

Note.— Guidance on the operational control organization and the role of the flight operations officer/flight dispatcher is contained in the Manual of Procedures for Operations Inspection, Certification and Continued Surveillance (Doc 8335).

Detailed guidance on the authorization, duties and responsibilities of the flight operations officer/flight dispatcher is contained in the manual Preparation of an Operations Manual (Doc 9376). The requirements for age, skill, knowledge and experience for licensed flight operations officers/flight dispatchers are contained in ECAR part 65.

(e) If an emergency situation which endangers the safety of the helicopter or persons becomes known first to the flight operations officer/flight dispatcher, action by that person in accordance with ECAR 121.395 shall include, where necessary, notification to the appropriate authorities of the nature of the situation without delay, and requests for assistance if required.

(f) If an emergency situation which endangers the safety of the helicopter or persons necessitates the taking of action which involves a violation of local regulations or procedures, the pilot-in-command shall notify the appropriate local authority without delay. If required by the State in which the incident occurs, the pilot-in-command shall submit a report on any such violation to the appropriate authority of such State; in that event, the pilot-in-command shall also submit a copy of it to the State of the Operator. Such reports shall be submitted as soon as possible and normally within ten days.

(g) Operators shall ensure that pilots-in-command have available on board the helicopter all the essential information concerning the search and rescue services in the area over which the helicopter will be flown.

(h) Operators shall ensure that flight crew members demonstrate the ability to speak and understand the language used for radiotelephony communications as specified in Annex 1.

Note.— This information may be made available to the pilot by means of the operations manual or such other means as is considered appropriate.

121.5 Safety management system:

All Certificate holders shall show a complete compliance with ECARs, Part 19, by establishing a safety management system that is acceptable to the ECAA, maintaining it, and completing its implementation as per the chronology mentioned in this regulation.

(a) **Recommendation.**— An operator of a helicopter of a certified take-off mass in excess of 7 000 kg or having a passenger seating configuration of more than 9 and fitted with a flight data recorder should establish and maintain a flight data analysis programme as part of its safety management system.

Note. — An operator may contract the operation of a flight data analysis programme to another party while retaining overall responsibility for the maintenance of such a programme.

(b) A flight data analysis programme shall contain adequate safeguards to protect the source(s) of the data in accordance with ECAR Part 19.

Note. — Guidance on the establishment of flight data analysis programmes is included in the Manual on Flight Data Analysis Programmes (FDAP) (Doc 10000).

(c) ECAA shall not allow the use of recordings or transcripts of CVR, CARS, Class A AIR and Class A AIRS for purposes other than the investigation of an accident or incident as per Annex 13 except where the recordings or transcripts:

(1) Are related to a safety-related event identified in the context of a safety management system; are restricted to the relevant portions of a de-identified transcript of the recording; and are subject to the protections accorded by Annex 19;

(2) Are sought for use in criminal proceedings not related to an event involving an accident or incident investigation and are subject to the protections accorded by Annex 19; or

(3) Are used for inspections of flight recorder systems as provided in Section 6 of Appendix 4.

Note.— Provisions on the protection of safety data, safety information and related sources are contained in Appendix 3 to Annex 19. When an investigation under Annex 13 is instituted, investigation records are subject to the protections accorded by Annex 13.

(d) ECAA shall not allow the use of recordings or transcripts of FDR, ADRS as well as Class B and Class C AIR and AIRS for purposes other than the investigation of an accident or incident as per Annex 13, except where the recordings or transcripts are subject to the protections accorded by Annex 19 and:

(1) Are used by the operator for airworthiness or maintenance purposes;

(2) Are used by the operator in the operation of a flight data analysis programme as provided in Section II of this Annex;

(3) Are sought for use in proceedings not related to an event involving an accident or incident investigation;

(4) Are de-identified; or

(5) Are disclosed under secure procedures.

Note.— Provisions on the protection of safety data, safety information and related sources are contained in ECAR Part 19.

(e) An operator shall establish a flight safety documents system, for the use and guidance of operational personnel, as part of its safety management system.

Note.— Guidance on the development and organization of a flight safety documents system is provided in Attachment F.

121.6 Leasing of aircraft

(a) Definitions

(1) Lease: Any agreement by a person (the lessor) to furnish an aircraft to another person (the lessee) to be used for compensation or hire purposes. This does not include an agreement for the sale of an aircraft or a contract of conditional sale..

(2) Dry Lease: Any agreement in which a lessor, (which could be an air carrier, bank, or leasing company) leases an aircraft without cockpit crewmembers to an air carrier (the lessee), and in which the lessee maintains operational control.

(3) Wet Lease: Any agreement in which an Egyptian certificate holder (lessor) leases an aircraft, with at least one pilot cockpit crewmember, to or from either an Egyptian operator, foreign air carrier, or a foreign person (the lessee).

(4) Damp lease: Any agreement in which an Egyptian certificate holder (lessor) leases an aircraft, with pilot cockpit crewmember and possibly part of the cabin crew, to or from either an Egyptian operator, foreign air carrier, or a foreign person (the lessee) and its generally understood to be wet lease.

(5) Interchange Agreement: Any agreement between operators (Egyptian or foreign) in which the operational control of an aircraft is transferred for short periods of time

from one operator to another. With this type agreement, the latter operator assumes responsibility for the operational control of the aircraft at the time of transfer.

(6) Operational Control: With respect to flight operations, means the exercise of authority over initiating, conducting or terminating a flight.

(7) Lessee: The party using the aircraft under the provisions of a lease.

(8) Lessor: The party furnishing the aircraft under a lease.

(9) Short Term Lease: Any agreement that is not longer than two consecutive months and the number of days that may be operated per month does not exceed five days and operational control and the maintenance for the aircraft always remains the responsibility of the lessor.

(b) Except for short term lease agreements as defined in EAC121-2 (as amended) or unless otherwise authorized by the ECAA, prior to conducting operations involving a lease, each certificate holder under this Part authorized to conduct common carriage operations under this subchapter shall provide the ECAA with a copy of the lease to be executed which would lease the aircraft to any other person engaged in common carriage operations under this subchapter, including foreign air carriers, or to any other foreign person engaged in common carriage wholly outside Egypt.

(c) No certificate holder under this Part may lease from another air carrier, or any other person not engaged in common carriage, except as provided in EAC121-2 (as amended).

(d) Upon receiving a copy of a lease, the ECAA determines which party to the agreement has operational control of the aircraft. The lessor must provide the following information to be incorporated into operations specifications, as needed:

(1) The names of the parties to the agreement and the duration thereof;

(2) The nationality and registration markings of each aircraft involved in the agreement;

(3) The kind of operation;

(4) The airports or areas of operation; and

(5) A statement specifying the party deemed to have operational control and the times, airports, or areas under which such operational control is exercised.

(e) In making the determination of paragraph (b) of this section, the ECAA will consider the following:

(1) Crewmembers and training;

(2) Airworthiness and performance of maintenance;

(3) Signing the maintenance release;

(4) Servicing the aircraft;

(5) Scheduling; and

(6) Any other factor the ECAA considers relevant.

(f) Other arrangements for transportation by air: Except as provided in paragraph (f) of this section, a certificate holder operating under this Part may not conduct any operation for another certificate holder under this Part or a foreign air operator under Part 129 or a foreign person engaged in common carriage wholly outside Egypt without the approval of the ECAA.

(g) A certificate holder under this Part may, if authorized by the ECAA, conduct one or more flights for passengers who are stranded because of the cancellation of their scheduled flights. These flights must be conducted under the rules of this Part.

Note:Details of the lease agreements and requirements for dry, wet and damp lease are given in EAC121-2 (as amended).

121.7 Flight Data Analysis Program

(a) An operator of an aero plane of a certificated take-off mass in excess of 20 000 kg should establish and maintain a flight data analysis programme as part of its safety management system.

(b) An operator of an aero plane of a maximum certificated take-off mass in excess of 27 000 kg shall establish and maintain a flight data analysis programme as part of its safety management system.

(c) An operator may contract the operation of a flight data analysis programme to another party while retaining overall responsibility for the maintenance of such a programme.

(d) A flight data analysis programme shall be non-punitive and contain adequate safeguards to protect the source(s) of the data.

121.9 Aircraft tracking (Applicable on and after 8 November 2018)

(a) The operator shall establish an aircraft tracking capability to track aero planes throughout its area of operations.

Note.— Guidance on aircraft tracking capabilities is contained in the Normal Aircraft Tracking Implementation Guidelines (Cir 347).

(b) The operator should track the position of an aeroplane through automated reporting at least every 15 minutes for the portion(s) of the inflight operation(s) under the following conditions:

(1) The aeroplane has a maximum certificated take-off mass of over 27 000 kg and a seating capacity greater than 19; and

(2) Where an ATS unit obtains aeroplane position information at greater than 15 minute intervals.

Note.— See Annex 11 Chapter 2 for coordination between the operator and air traffic services provisions regarding position report messages.

(c) The operator shall track the position of an aero plane through automated reporting at least every 15 minutes for the portion(s) of the inflight operation(s) that is planned in an oceanic area(s) under the following conditions:

(1) The aero plane has a maximum certificated take-off mass of over 45 500 kg and a seating capacity greater than 19; and

(2) Where an ATS unit obtains aero plane position information at greater than 15 minute intervals.

Note 1. — Oceanic area - for the purpose of aircraft tracking is the airspace which overlies waters outside the territory of a State.

Note 2. — See Annex 11 Chapter 2 for coordination between the operator and air traffic services provisions regarding position report messages.

(d) The operator shall establish procedures, approved by the ECAA , for the retention of aircraft tracking data to assist SAR in determining the last known position of the aircraft.

Note.— Refer to 121.135, 121 app L item 1.49 for operator responsibilities when using third parties for the conduct of aircraft tracking .

(E) Notwithstanding the provision in (b) and (c) ECAA may, based on the results of an approved risk assessment process implemented by the certificate holder, allow for variations to automated reporting intervals. The process shall demonstrate how risks to the operation resulting from such variations can be managed and shall include at least the following:

(1) capability of the certificate holder's operational control systems and processes, including those for contacting ATS units;

(2) overall capability of the aeroplane and its systems;

(3) available means to determine the position of, and communicate with, the aeroplane;

(4) frequency and duration of gaps in automated reporting;

(5) human factors consequences resulting from changes to flight crew procedures; and

(6) specific mitigation measures and contingency procedures.

Note. — Guidance on development, implementation and approval of the risk assessment process which allows for variations to the need for automatic reporting and the required interval, including variation examples, is contained in the Aircraft Tracking Implementation Guidelines (Cir 347).

121.10 location of an aeroplane in distress

(a) As of 1 January 2025, all airplanes of a maximum certificated take- off mass of over 27000 kg for which the individual certificate of airworthiness is first issued on or after 1 January 2024, shall autonomously transmits information from which a position can be determined by the operator At least once every minute, when in distress, in accordance with Appendix P

(b) **Recommendation**— All aeroplanes of a maximum certificated take-off mass of over 5 700 kg for which the individual certificate of airworthiness is first issued on or after 1 January 2023, should autonomously transmit information from which a position can be determined at least once every minute, when in distress, in accordance with Appendix P.

Note 1.— Refer to 121.135.(b).(3) for operator responsibilities when using third parties.
Note 2.— Operational procedures for monitoring and making position information of a flight in distress available to the appropriate organizations in a timely manner are contained in PANS-OPS, Volume III, Section 10.

The operator shall make position information of a flight in distress available to the appropriate organizations, as established by the ECAA

121.11 Rules applicable to operations in a foreign country

(a) Each certificate holder shall, while operating an aircraft within a foreign country, comply with the air traffic rules of the country concerned and the local airport rules, except where any rule of this Part is more restrictive and may be followed without violating the rules of that country.

(b) An operator shall ensure that all employees when abroad know that they must comply with the laws, regulations and procedures of those States in which operations are conducted.

(c) An operator shall ensure that all pilots are familiar with the laws, regulations and procedures, pertinent to the performance of their duties, prescribed for the areas to be traversed, the aerodromes to be used and the air navigation facilities relating thereto. The operator shall ensure that other members of the flight crew are familiar with such of these laws, regulations and procedures as are pertinent to the performance of their respective duties in the operation of the aeroplane.

121.13 Rules applicable to domestic helicopter operations: deviation authority

Upon application by the operator, the ECAA may issue operations specifications authorizing a deviation from the specific requirements for domestic helicopter operations if they find that the deviation provides a substantially equivalent standard of safety.

121.15 Carriage of narcotic drugs, marihuana, and depressant or stimulant drugs or substances

If the holder of a certificate issued under this Part permits any aircraft owned or leased by that holder to be engaged in any operation that the certificate holder knows to be in violation of The Egyptian Civil Aviation Law No 28, 1981, that operation is a basis for suspending or revoking the certificate.

121.17 Rules applicable to air carrier and air taxi pilots to operate more than one aircraft type. (Ref. to ECAR 61.79)

SUBPART B
Certification Rules for Air Carrier and Air Taxi Operators

121.21 Applicability

This subpart prescribes the certification rules for air carriers and air taxi operators obtaining an air operator certificate (AOC).

121.23 The air operator certificate

(a) The air operator certificate (AOC) shall authorize the operator to conduct commercial air transport operations in accordance with the operations specifications

(b) The operations specifications that are issued with the AOC are a part of that certificate

(c) Provisions for the content of the air operator certificate and its associated operations specifications are contained in Appendix (K) of this part .

121.25 Application for an AOC

(a) A person applying to the ECAA for an air carrier or air taxi certificate under this Part (applicant) must submit an application to the ECAA at least 90 days before they intend to start operations or 60 days before the expiration date of the AOC in case of its renewal:
  (1) In a form and manner prescribed by the ECAA; and
  (2) Containing any information the ECAA requires the applicant to submit;

(b) Each applicant for the original issue / renewal of an operating certificate for the purpose of conducting common carriage operations under this Part must submit an application in a form and manner prescribed by the ECAA.

(c) Each application submitted under paragraph (b) of this section must contain a signed statement showing the following:
  (1) For corporate applicants:
    (i) The name and address of each stockholder who owns 5 percent or more of the total voting stock of the corporation, and if that stockholder is not the sole beneficial owner of the stock, the name and address of each beneficial owner. An individual is considered to own the stock owned, directly or indirectly, by or for his or her spouse, children, grandchildren, or parents.
    (ii) The name and address of each director and each officer and each person employed or who will be employed in a management position described in this ECAR.
    (iii) The name and address of each person directly or indirectly controlling or controlled by the applicant and each person under direct or indirect control with the applicant.
  (2) For non-corporate applicants:
    (i) The name and address of each person having a financial interest therein the non-corporate applicant and the nature and extent of that interest.
    (ii) The name and address of each person employed or who will be employed in a management position described in this ECAR.

(d) In addition, each applicant for the original issue of an operating certificate under paragraph (b) of this section must submit with the application a signed statement showing:
  (1) The financial information listed in paragraph (g) of this section; and
  (2) The nature and scope of its intended operation, including the name and address of each person, if any, with whom the applicant has a contract to provide services as a commercial operator and the scope, nature, date, and duration of each of those contracts.

(e) Each applicant for, or holder of, a certificate issued under paragraph (b) of this section, shall notify the ECAA within 10 days after:
  (1) A change in any of the persons, or the names and addresses of any of the persons, submitted to the ECAA under paragraph (c)(1) or (c)(2) of this section; or
  (2) A change in the financial information submitted to the ECAA under paragraph (f) of this section that occurs while the application for the issue is pending before the ECAA and that would make the applicant's financial situation substantially less favorable than originally reported.

(f) Each applicant for the original issue of an operating certificate under paragraph (a) of this section must submit the following financial information:
  (1) A balance sheet that shows assets, liabilities, and net worth, as of a date not more than 60 days before the date of application.

(2) An itemization of liabilities more than 60 days past due on the balance sheet date, if any, showing each creditor's name and address, a description of the liability, and the amount and due date of the liability.

(3) An itemization of claims in litigation, if any, against the applicant as of the date of application showing each claimant's name and address and a description and the amount of the claim.

(4) A detailed projection of the proposed operation covering 6 complete months after the month in which the certificate is expected to be issued including:

(i) Estimated amount and source of both operating and non-operating revenue, including identification of its existing and anticipated income producing contracts and estimated revenue per mile or hour of operation by aircraft type;

(ii) Estimated amount of operating and non-operating expenses by expense objective classification; and

(iii) Estimated net profit or loss for the period.

(5) An estimate of the cash that will be needed for the proposed operations during the first 6 months after the month in which the certificate is expected to be issued, including:

(i) Acquisition of property and equipment (explain);

(ii) Retirement of debt (explain);

(iii) Additional working capital (explain);

(iv) Operating losses other than depreciation and amortization (explain); and

(v) Other (explain).

(6) An estimate of the cash that will be available during the first 6 months after the month in which the certificate is expected to be issued, from-

(i) Sale of property or flight equipment (explain);

(ii) New debt (explain);

(iii) New equity (explain);

(iv) Working capital reduction (explain);

(v) Operations (profits) (explain);

(vi) Depreciation and amortization (explain); and

(vii) Other (explain).

(7) A schedule of insurance coverage in effect on the balance sheet's date showing insurance companies; policy numbers; types, amounts, and period of coverage; and special conditions, exclusions, and limitations.

(8) Any other financial information that the ECAA requires to enable him to determine that the applicant has sufficient financial resources to conduct his or her operations with the degree of safety required in the public interest.

(g) Each financial statement containing financial information required by paragraph (f) of this section must be based on accounts prepared and maintained on an accrual basis in accordance with generally accepted accounting principles applied on a consistent basis, and must contain the name and address of the applicant's public accounting firm, if any. Information submitted must be signed by an officer, owner, or partner of the applicant or certificate holder.

121.27 Issue of certificate: AOC

(a) An applicant may be issued an AOC if, after investigation, the ECAA finds that the applicant:

(1) Meets the applicable requirements of this Part;

(2) Holds the authorization applicable to the kinds of operations to be conducted, issued by the Minister of Civil Aviation ; and

(3) Is properly and adequately equipped in accordance with the requirements of the applicable ECAR Parts and is able to conduct a safe operation under appropriate provisions of this Part and the operations specifications issued under this Part.

(b) An application for a certificate may be denied if the ECAA finds that:

(1) The applicant is not properly or adequately equipped or is not able to conduct safe operations under this Part;

(2) The applicant previously held an AOC, which was revoked; and

(3) The applicant intends to or fills a key management position listed in this Part, as applicable, with an individual who exercised control over or who held the same or a similar position with an AOC holder whose certificate was revoked, or is in the

process of being revoked, and that individual materially contributed to the circumstances causing revocation or causing the revocation process.

121.29 Duration of an AOC

(a) The duration of an AOC shall be one calendar year from the date of issue, unless suspended, revoked or surrendered, and is renewable based on satisfactory application and operation in accordance with this Part; and

(b) If the ECAA suspends or revokes such an AOC, the holder of that certificate shall return it to the ECAA, immediately.

SUBPART D
Rules Governing all Certificate Holders under this Part

121.57 Applicability
This subpart prescribes rules governing all certificate holders under this Part.

121.58 Obtaining waivers and authority for deviations
The ECAA may, upon application by the air carrier or air taxi certificate holder or applicant, authorize deviations from the applicable requirements only and where permitted by the provisions of those requirements, by appropriate amendment to the operations specifications. Each certificate holder shall comply with the terms of the authorized deviation when conducting operations thereby.

121.59 Management personnel required
(a) Each certificate holder must have sufficient qualified management and technical personnel to ensure the highest degree of safety in its operations. The certificate holder must have approved qualified personnel serving full-time in the following or equivalent positions:
(1) Accountable Executive
(2) Director of Operations
(3) Safety Manager
(4) Chief Pilot; and
(5) Director of Maintenance; and
(6) Chief Inspector.

(b) The ECAA may approve positions or numbers of positions other than those listed in paragraph (a) of this section for a particular operation if the certificate holder shows that it can perform the operation with the highest degree of safety under the direction of fewer or different categories of management personnel due to:
(1) The kind of operation involved;
(2) The number and type of aircraft used; and
(3) The areas of operation.

(c) The title of the positions required under paragraph (a) of this section or the title and number of equivalent positions approved under paragraph (b) of this section shall be set forth in the certificate holder's operations specifications.

(d) Each certificate holder must:
(1) State in the general policy provisions of the manual required by subpart G of this Part, the duties, responsibilities, and authority of personnel required under paragraph (a) of this section;
(2) List in the manual the names and business addresses of the individuals assigned to those positions; and
(3) Notify the ECAA within 10 days of any change in personnel or any vacancy in any position listed.

121.61 Management personnel: qualifications
(a) To serve as Accountable Executive under 121.59 a person must have managerial experience and understanding of how to establish and manage safety, and have a complete knowledge of all AOC operational requirements, and acquire training courses in ECARs and safety management system as a minimum;

(b)To serve as Director of Operations under 121.59 a person must:
(1) Hold an airline transport pilot or commercial pilot license as appropriate;
(2) Have at least 3 years supervisory or managerial experience within the last 6 years in a position that exercised operational control over any operations conducted with large aircraft under this Part or equivalent, or if the certificate holder uses only small aircraft in its operations, the experience may be obtained in large or small aircraft; and
(3) In the case of a person becoming a Director of Operations:
(i) For the first time ever, have at least 3 years of experience, within the past 6 years, as pilot in command of a large aircraft operated under this Part or equivalent, if the certificate holder operates large aircraft. If the certificate holder uses only small aircraft in its operation, the experience may be obtained in either large or small aircraft; and

(ii) In the case of a person with previous experience as a Director of Operations, have at least 3 years of experience as pilot in command of a large aircraft operated under this Part or equivalent, if the certificate holder operates large aircraft. If the certificate holder uses only small aircraft in its operation, the experience may be obtained in either large or small aircraft.

(c) To serve as Chief Pilot under 121.59 a person must hold an airline transport pilot or commercial pilot license with appropriate ratings for at least one of the aircraft used in the certificate holder's operation; and

(1) In the case of a person becoming a Chief Pilot for the first time ever, have at least 3 years of experience, within the past 6 years, as pilot in command of a large aircraft operated under this Part or equivalent, if the certificate holder operates large aircraft. If the certificate holder uses only small aircraft in its operation, the experience may be obtained in either large or small aircraft; and

(2) In the case of a person with previous experience as a Chief Pilot, have at least 3 years of experience, as pilot in command of a large aircraft operated under this Part or equivalent, if the certificate holder operates large aircraft. If the certificate holder uses only small aircraft in its operation, the experience may be obtained in either large or small aircraft.

d) To serve as Director of Maintenance under121.59 a person must:

(1) Hold an aircraft maintenance license without type rating and have successfully achieved the training requirements for a type rating on at least one of the aircraft types planned for the operation;

(2) Have 1 year of experience in a position responsible for returning aircraft to service;

(3) Have at least 1 year of experience in a supervisory capacity maintaining the same category and class of aircraft as the certificate holder uses; and

(4) Have 3 years of experience within the past 6 years in one or a combination of the following:

(i) Maintaining or supervising the maintenance of aircraft, including at the time of appointment as Director of Maintenance, experience in maintaining the same category and class of aircraft as the certificate holder uses; or

(ii) Repairing aircraft in a certificated airframe repair station that is rated to maintain aircraft in the same category and class of aircraft as the certificate holder uses.

(e) To serve as Safety Manager ,Ref to ECAR Part 19 .

(f) To serve as Chief Inspector under this Part a person must:

(1) Hold an aircraft maintenance license without type rating and have successfully achieved the training requirements for a type rating on at least one of the aircraft types planned for the operation;

(2) Have at least 3 years of maintenance experience on different types of aircraft with an air carrier or certificated repair station, 1 year of which must have been as maintenance inspector; and

(3) Have at least 1 year in a supervisory capacity maintaining aircraft of the same category and class.

(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. ECAA may, at any time, terminate any grant of deviation authority issued under this paragraph.

121.63 Through 121.69 Reserved

121.71 Management personnel: Responsibilities

(a) Accountable Executive shall have:

(1) Full control of the human resources required for the operations authorized to be conducted under the operations certificate;

(2) Full control of the financial resources required for the operations authorized to be conducted under the operations certificate;

(3) Final authority over operations authorized to be conducted under the operations certificate;

(4) Direct responsibility for the conduct of the organization‘s affairs (personal business or concern); and final responsibility for all safety issues.

(b) Director of Operations: The operations manager is responsible for safe flight operations. In particular, the responsibilities of the position include:

(1) Control of operations and operational standards of all airplanes operated;

(2) The identification of operations coordination functions which impact on operational control (e.g. maintenance, crew scheduling, load control, equipment scheduling and safety management);

(3) Supervision, organization, managing and efficiency of the following:
(i) Flight operations;
(ii) Cabin safety;
(iii) Crew scheduling and roistering;
(iv) Training programs; and
(v) The contents of the air operator's company operations manual;

(4) The supervision of and the production and amendment of the company operations manual;

(5) Liaison with the regulatory authority on all matters concerning flight operations, including any variations to the air operator's operator certificate;

(6) Liaison with any external agencies which may affect air operator operations;

(7) Ensuring that the air operator's operations are conducted in accordance with current regulations, standards and air operator policy;

(8) Ensuring that crew scheduling complies with flight and duty time regulations, and that all crew members are kept informed of any changes to the regulations and standards;

(9) The receipt and auctioning of any aeronautical information affecting the safety of flight;

(10) Coordinate with the Safety manager for the operation of the SMS, participate the safety action group (SAG) or safety committee for the porpoise of monitoring the corrective actions to ensure their effectiveness in the operations

(11) Qualifications of flight and cabin crews;

(12) Maintenance of a current operations library; and

(13) In his or her absence all responsibilities for operational duties shall be delegated to another qualified individual, except that the knowledge requirements detailed under operations manager qualifications may be demonstrated to the air operator rather than the ECAA.

(c) Safety Manager :

(1) The safety manager is responsible for providing guidance and direction for the planning,

implementation and operation of the organization’s safety management system (SMS) as mentioned in 121.5. Regarding safety matters, the safety manager has direct access to the Accountable Executive and appropriate senior and middle management.

(2) KEY ROLES

Safety advocate

• Demonstrates an excellent safety behavior and attitude, follows regulatory practices and rules, recognizes and reports hazards and promotes an effective safety reporting.

Leader

• Models and promotes an organizational culture that fosters safety practices through effective leadership.

Communicator

• Acts as an information conduit to bring safety issues to the attention of management and to deliver safety information to the organization staff, contractors and stakeholders.

• Provides and articulates information regarding safety issues within the organization.

Developer

• Assists in the continuous improvement of the hazard identification and safety risk assessment schemes and the organization’s SMS.

Relationship builder

• Builds and maintains an excellent working relationship with the organizations

Safety Action Groups (SAG) and within the Safety Services Office (SSO).
Ambassador
• Represents the organization on government, international organizations and industry committees (e.g., IATA, CAA, , etc.)
Analyst
• Analyzes technical data related to hazards, events and occurrences for trends.
Process management
• Effectively utilizes applicable processes and procedures to complete roles and responsibilities.
• Investigates opportunities to increase process efficiency.
• Measures the effectiveness and seeks to continually improve the quality of processes.

(3) Responsibilities :

(a)The position requires the ability to cope with changing circumstances and situations with little supervision. The safety manager acts independently of other managers within the organization.

(b) The safety manager is responsible for providing information and advice to senior management and to the Accountable Executive on matters relating to safe operations. Tact, diplomacy and a high degree of integrity are prerequisites.

(c) The job requires flexibility as assignments may be undertaken with little or no notice and outside normal work hours.

4. NATURE AND SCOPE

The safety manager must interact with operational personnel, senior managers and departmental heads throughout the organization. The safety manager should also foster positive relationships with regulatory authorities, agencies and service providers outside the organization. Other contacts will be established at a working level as appropriate.

(d) Chief pilot Responsibilities:

The chief pilot is responsible for the professional standards of the flight crews under his authority, and in particular:

(1) developing standard operating procedures;
(2) developing and/or implementing all required approved training programs for the air operator flight crews;
(3) issuing directives and notices to the flight crews as required;
(4) the operational suitability and requirements of all aerodromes and routes served by the air operator;
(5) the auctioning and distribution of accident, incident, and other occurrence reports;
(6) the processing and auctioning of any flight crew reports;
(7) the supervision of flight crews;
(8) assuming any responsibilities delegated by the Operations Manager; and
(9) in his or her absence, all responsibilities for duties shall be delegated to another qualified individual, except that the knowledge requirements detailed under chief pilot qualifications may be demonstrated to the air operator rather than the ECAA.

(e) Chief inspector Responsibilities:

The chief inspector is responsible for the professional standards of maintenance control under his/her authority, and in particular:

(1) developing standard operating procedures;
(2) issuing directives and notices to the subcontracted AMOs as required;
(3) the supervision of and the production and amendment of the company maintenance control manual;
(4) The establishing and amendment of the operator's approved maintenance program
(5) The supervision and proper use of approved Minimum equipment list and configuration deviation list
(6) The control of Aircraft certification and equipment and instrument requirements
(7) The quality control of all the operator's maintenance responsibilities performed by AMOs;
(8) Responsible of Mechanical reliability reports
(9) Responsible of Alteration and repair reports
(10) The establishing of operator's Continuing analysis and surveillance system in accord ace with 121.373 and EAC 121-6;
(11) Controlling the operator's maintenance records; and

(12) Supervision over the maintenance and preventive maintenance personnel training programs.
(13) Performing the internal audit program
(14) Reliability program control
(15) Audit of AMOs

(f) Director of Maintenance Responsibilities:

(a) Responsible for the airworthiness of the aero plane and the serviceability of both operational and emergency equipment by :
(1) The accomplishment of preflight inspections;
(2) The rectification to an approved standard of any defect and damage affecting safe operation, taking into account the minimum equipment list and configuration deviation list if available for the aero plane type;
(3) The accomplishment of all maintenance in accordance with the approved operator's aero plane maintenance programme;
(4) The analysis of the effectiveness of the operator's approved aero plane maintenance programme
(5) The accomplishment of any operational directive, airworthiness directive and any other continued airworthiness requirement made mandatory by the ECAA; and
(6) The accomplishment of modifications in accordance with an approved standard and, for non-mandatory modifications the establishment of an embodiment policy.

(b) Ensure that the Certificate of Airworthiness for each aero plane operated remains valid in respect of:
(1) The requirements in (a) above;
(2) Any calendar expiry date specified in the Certificate; and
(3) Any other maintenance condition specified in the Certif.

(c) The requirements specified in (a) above must be performed in accordance with procedures acceptable to the ECAA.
(d) Contract AMOs according to ECAA requirements.
(e) Engineering and planning all maintenance.
(f) Warehouses management.

121.73 Availability of certificate and operations specifications

(a) Each certificate holder shall make its operating certificate and operations specifications available for inspections at its principal operations office;
(b) Each certificate holder shall have on board of each aircraft a certified true copy of the air operator certificate and a copy of operations specifications.

121.75 Contents and maintenance of operations specifications

(a) Each certificate holder conducting air carrier or air taxi operations must obtain operations specifications containing all of the following:
(1) The specific location of the certificate holder's principal base of operations and, if different, the address that shall serve as the primary point of contact for correspondence between the ECAA and the certificate holder and the name and mailing address of the certificate holder's agent for service;
(2) Other business names under which the certificate holder may operate;
(3) Reference to the economic authority issued by the Minister of civil aviation, if required;
(4) Type of aircraft, registration markings, and serial numbers of each aircraft authorized for use, each regular and alternate airport to be used in scheduled operations, and each provisional and refueling airport;
(i) Subject to the approval of the ECAA with regard to form and content, the certificate holder may incorporate by reference the items listed in paragraph (a)(4) of this section into the certificate holder's operations specifications by maintaining a current listing of those items and by referring to the specific list in the applicable paragraph of the operations specifications; and
(ii) The certificate holder may not conduct any operation using any aircraft or airport not listed.
(5) Kinds of operations authorized;
(6) Authorization and limitations for routes and areas of operations;
(7) Airport limitations;

(8) Time limitations, or standards for determining time limitations, for overhauling, inspecting, and checking airframes, engines, propellers, rotors, appliances, and emergency equipment;
(9) Authorization for the method of controlling weight and balance of aircraft;
(10) Interline equipment interchange requirements, if relevant;
(11) Aircraft wet lease information;
(12) Any authorized deviation and exemption granted from any requirement of the ECARs; and
(13) Any other item the ECAA determines is necessary.

(b) Certificate holder's duty to maintain operations specifications. Each certificate holder shall:
(1) Maintain a complete and separate set of its operations specifications at the locations specified in 121.73;
(2) Insert pertinent excerpts of its operations specifications, or references thereto, in its manual and shall:
(i) Clearly identify each such excerpt as a part of its operations specifications; and
(ii) State that compliance with each operations specifications requirement is mandatory.
(3) Keep each of its employees and other persons used in its operations informed of the provisions of its operations specifications that apply to that employee's or person's duties and responsibilities.

121.77 Reserved

121.79 Amendment of certificate or operations specifications

(a) The ECAA may amend any certificate or operations specifications issued under this Part if:
(1) The ECAA determines that aviation safety and the public interest require the amendment; or
(2) The certificate holder applies for the amendment, and the ECAA determines that aviation safety and the public interest allows the amendment.

(b) Except as provided in paragraph (e) of this section, when the ECAA initiates an amendment to a certificate or certificate holder's operations specifications, the following procedure applies:
(1) The ECAA notifies the certificate holder in writing of the proposed amendment;
(2) The ECAA sets a reasonable period, but not less than 7 days, within which the certificate holder may submit written information, views, and arguments on the amendment;
(3) After considering all material presented, the ECAA notifies the certificate holder of:
(i) The adoption of the proposed amendment;
(ii) The partial adoption of the proposed amendment; or
(iii) The withdrawal of the proposed amendment.
(4) If the ECAA issues an amendment to the certificate or operations specifications, it becomes effective not less than 30 days after the certificate holder receives notice of it unless:
(i) The ECAA finds under paragraph (e) of this section that there is an emergency requiring immediate action with respect to aviation safety; or
(ii) The certificate holder petitions for reconsideration of the amendment under paragraph (d) of this section.

(c) When the certificate holder applies for an amendment to its certificate or operations specifications, the following procedure applies:
(1) The certificate holder must file an application to amend its operations specifications: At least 90 days before the date proposed by the applicant for the amendment to become effective, unless a shorter time is approved, in cases of mergers, acquisition of the airline’s operational assets that require an additional showing of safety (e.g., proving tests); resumption of operations following a suspension of operations as a result of bankruptcy actions, or the initial introduction of aircraft not before proven for use in the operators operations; and
(2) The application must be submitted to the ECAA in a form and manner prescribed by the ECAA.
(3) After considering all material presented, the ECAA notifies the certificate holder of:
(i) The adoption of the applied for amendment;

(ii) The partial adoption of the applied for amendment; or
(iii) The denial of the applied for amendment. The certificate holder may petition for reconsideration of a denial under paragraph (d) of this section.

(4) If the ECAA approves the amendment, following coordination with the certificate holder regarding its implementation, the amendment is effective not less than 30 days after the certificate holder receives notice.

(d) When a certificate holder seeks reconsideration of a decision from the ECAA concerning the amendment of operations specifications, the following procedure applies:
(1) The certificate holder must petition for reconsideration of that decision within 30 days of the date that the certificate holder receives a notice of denial of the amendment, or of the date it receives notice of an ECAA initiated amendment, whichever circumstance applies.
(2) The certificate holder must address its petition to the ECAA.
(3) A petition for reconsideration, if filed within the 30-day period, suspends the effectiveness of any amendment issued by the ECAA unless the ECAA has found, under paragraph (e) of this section, that an emergency exists requiring immediate action with respect to safety in air transportation.
(4) If a petition for reconsideration is not filed within 30 days, the procedures of paragraph (c) of this section apply.

(e) If the ECAA finds that an emergency exists requiring immediate action with respect to aviation safety that makes the procedures set out in this section impracticable or contrary to the public interest:
(1) The ECAA amends the certificate or operations specifications and makes the amendment effective on the day the certificate holder receives notice of it; and
(2) In the notice to the certificate holder, the ECAA articulates the reasons for its finding that an emergency exists requiring immediate action with respect to safety in air transportation or that makes it impracticable or contrary to the public interest to stay the effectiveness of the amendment.

121.81 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.

(c) ECAA inspectors have adequate support credential and transportation to accomplish independently their certification and continued surveillance tasks

(d) The ECAA oversight system of the air operator / service providers takes into considerations the safety performance as well as the size and complexity of its aviation products or services

(e) the ECAA established risk based oversight RBO procedures and mechanisms as described in (EAC 19-14) to prioritize inspections audits and surveys towards those areas of greater safety concern or need and allows ECAA to direct its attention, towards organization that require additional or closer attention thereby strengthening the efficiency of the oversight.

121.83 Maintaining a principal base of operations, main operations base, main maintenance base; and change of address

(a) Each certificate holder must maintain a principal base of operations. Each certificate holder may also establish a main operations base and a main maintenance base which may be located at either the same location as the principal base of operations or at separate locations.

(b) At least 30 days before it proposes to establish or change the location of its principal base of operations, its main operations base, or its main maintenance base, a certificate holder must provide written notification to the ECAA.

121.85 Rules concerning the catering activity and inflight services

a) From 31 January 2016, Any certificate holder shall not commence or conduct any catering activity or inflight services, unless it has in place an effective agreement (liaison) with a caterer (catering supplier), which not only possesses but also implements the requirements of the ISO 22000:2005 food safety management system certificate.
b) Each certificate holder shall continually monitor and ensure that the caterer(catering supplier) has a valid , and updated version of the abovementioned certificate through an effective quality and safety assurance program.
c) Each certificate holder / airport authority shall implement the requirements for safe handling and distribution of food and beverage stipulated in the following documents:
   1. IATA catering quality assurance program
   2. WHO Guide to hygiene and sanitation in aviation (as amended)
   3. Guide to hygiene and sanitation in Aviation (WHO) (as amended)

121.87 through 121.89 Reserved

SUBPART E
Approval of Routes: Air Carriers and Air Taxis

121.91 Applicability

(a) This subpart prescribes rules for obtaining approval of routes used by air carriers and air taxis.
(b) Each certificate holder must apply for new route approval before using it for a commercial operation.

121.93 Route requirements: General

(a) Each air carrier seeking a route approval must show:
   (1) That it is able to conduct satisfactorily scheduled operations between each airport over that route or route segment; and
   (2) That the facilities and services, required by this Part, are available and adequate for the proposed operation. The ECAA may approve a route outside of controlled airspace if it determines that traffic density is such that an adequate level of safety can be assured.
(b) Paragraph (a) of this section does not require actual flight over a route or route segment if the air carrier shows that the flight is not essential to safety, considering the availability and adequacy of airports, lighting, maintenance, communication, navigation, fueling, ground, and aircraft radio facilities, and the ability of the personnel to be used in the proposed operation.

121.95 Route width

Approved routes and route segments over Egyptian airways or foreign airways (and advisory routes in the case of air carriers) have a width equal to the designated width of those airways or routes. Whenever the ECAA finds it necessary to determine the width of other approved routes, the following will be considered:
(a) Terrain clearance;
(b) Minimum en route altitudes;
(c) Ground and airborne navigation aids;
(d) Air traffic density;
(e) ATS procedures; and
(f) Any route widths of other approved routes determined by the ECAA will be specified in the air carrier's operations specifications.

121.97 Airports: Required data

(a) Each air carrier and air taxi must show that each route it submits for approval has enough airports that are properly equipped and adequate for the proposed operation, considering such items as size, surface, obstructions, facilities, public protection, lighting, navigational and communication aids, and ATS.
(b) Each air carrier and air taxi must show that it has an approved system for obtaining, maintaining, and distributing to appropriate personnel current aeronautical data for each airport it uses to ensure a safe operation at that airport. The aeronautical data must include the following;
   (1) Airports:
      (i) Facilities;

(ii) Public protection;
(iii) Navigational and communications aids;
(iv) Construction affecting takeoff, landing or ground operations; and
(v) Air traffic facilities.

(2) Runways, clearways and stopways:
(i) Dimensions;
(ii) Surface;
(iii) Marking and lighting systems;
(iv) Elevation; and
(v) Gradient.

(3) Displaced thresholds:
(i) Location;
(ii) Dimensions; and
(iii) Takeoff or landing or both.

(4) Obstacles:
(i) Those affecting takeoff and landing performance computations in accordance with subpart I of this Part; and
(ii) Controlling obstacles.

(5) Instrument flight procedures:
(i) Departure procedure;
(ii) Approach procedure; and
(iii) Missed approach procedure.

(6) Special information:
(i) Runway visual range measurement equipment; and
(ii) Prevailing winds under low-visibility conditions.

(c) If the ECAA finds that changes are necessary for the continued adequacy of the certificate holder's system for collection, dissemination, and usage of aeronautical data that has been granted approval, the certificate holder shall, after notification by the ECAA, make those changes in the system. Within 30 days after the certificate holder receives such notice, the certificate holder may file a petition to reconsider the notice with the ECAA. This filing of a petition to reconsider stays the notice pending a decision by the ECAA. However, if the ECAA finds that there is an urgency that requires immediate action in the interest of safety in air transportation, the ECAA may, upon statement of the reasons, require a change effective without stay.

121.99 Communications facilities

(a) Each certificate holder must show that a two – way communication system, other means of communication approved by ECAA, is available over the entire route. The communications may be direct links or via an approved communication link that will provide reliable and rapid communications under normal operating conditions between each airplane and the appropriate dispatch office, and between each airplane and the appropriate air traffic control unit

(b) Except in an emergency, for all operations , the communications system between each airplane and the dispatch office must be independent of any system operated by the government

(c) Each certificate holder must provide voice communications for EDTO where voice communication facilities are available. In determining whether facilities are available, the certificate holder must consider potential routes and altitudes needed for diversion to EDTO alternate airports. Where facilities are not available or are of such poor quality that voice communication is not possible, another communication system must be substituted.

(d) For EDTO beyond 180 minutes, each certificate holder must have a second communication system in addition to that required by paragraph © of this section. That system must be able to provide immediate satellite - based voice communications of landline – telephone fidelity. The system must be able to communicate between the flight crew and air traffic services, and the flight crew and the certificate holder. In determining whether such communications are available, the certificate holder must consider potential routes and altitudes needed for diversion to EDTO alternate airport. Where immediate,

satellite – based voice communications are not available, or are of such poor quality that voice communication is not possible; another communication system must be substituted.

121.101 Weather reporting facilities

(a) Each air carrier and air taxi must show that enough weather reporting services are available along each route to ensure weather reports and forecasts necessary for the operation.

(b) Each air carrier and air taxi shall adopt and put into use an approved system for obtaining forecasts and reports of adverse weather phenomena, such as clear air turbulence, thunderstorms, and low altitude wind shear, that may affect safety of flight on each route to be flown and at each airport to be used.

121.103 En route navigational facilities

(a) Except as provided in paragraph (b) of this section, each air carrier and air taxi must show, for each proposed route, that non-visual ground aids are:
  (1) Available over the route for navigating aircraft within the degree of accuracy required for ATS; and
  (2) Located to allow navigation to any airport, within the degree of accuracy necessary for the operation involved. Except for those aids required for routes to alternate airports, non-visual ground aids required for approval of routes outside of controlled airspace are listed in the air carriers operations specifications.

(b) Non-visual ground aids are not required for:
  (1) Day VFR operations that the air carrier shows can be conducted safely by pilotage because of the characteristics of the terrain;
  (2) Night VFR operations on routes that the air carrier shows have reliably lighted landmarks adequate for safe operation; and
  (3) Operations on route segments where the use of celestial or other specialized means of navigation or any time it is deemed necessary for the safe conduct of the flight, a Flight Navigator licensed under the provision of Part 63 or equivalent must be approved for use by the ECAA.

121.105 Servicing and maintenance facilities

Each air carrier and air taxi must show that competent personnel and adequate facilities and equipment (including spare parts, supplies, and materials) are available at such points along the air carrier route as are necessary for the proper servicing, maintenance, and preventive maintenance of aircraft and auxiliary equipment.

121.106 EDTO alternate airport, rescue and firefighting service

(a) Except as provided in paragraph (b) of this section, the following rescue and firefighting service must be available at each airport listed as an ETOPS Alternate Airport in a dispatch or flight release.
  (1) For EDTO up to 180 minutes, each designated EDTO Alternate Airport must have equivalent to the rescue and firefighting service that specified by ICAO as Category 4, or higher.
  (2) For EDTO beyond 180 minutes, each designated EDTO Alternate Airport must have rescue and firefighting service equivalent to that specified by ICAO Category 4, or higher. In addition, the aircraft must remain within the EDTO authorized diversion time from an Adequate Airport that has rescue and firefighting service equivalent to that specified by ICAO Category 7, or higher.

(b) If the equipment and personnel required in paragraph (a) of this section are not immediately available at an airport, the certificate holder may still list the airport on the dispatch or flight release if the airport's rescue and firefighting service can be augmented to meet paragraph (a) of this section from local firefighting assets. A 30-minute response time for augmentation is adequate if the local assets can be notified while the diverting airplane is en route. The augmenting equipment and personnel must be available on arrival

of the diverting airplane and must remain as long as the diverting airplane needs rescue and firefighting service

121.107 Dispatch centers

(a) Each air carrier must show that it has enough dispatch center staff, adequate for the operations to be conducted, that are located at points necessary to ensure proper operations control of each flight.

(b) Dispatch centers shall be supported by an adequate number of dispatchers, holding a current dispatcher license without type rating and approved by the AOC holder on the applicable aircraft (after successfully achieving the appropriate approved training and skill demonstration tests).

121.111Through 121.123 Reserved

121.125 Flight following system

(a) Each certificate holder must show that it has:

(1) An approved flight following or flight locating system established in accordance with subpart U of this Part and adequate for the proper monitoring of each flight, considering the operations to be conducted; and

(2) Flight following centers located at those points necessary:

(i) To ensure the proper monitoring of the progress of each flight with respect to its departure at the point of origin and arrival at its destination, including intermediate stops and diversions therefrom, and maintenance or mechanical delays encountered at those points or stops; and

(ii) To ensure that the pilot in command is provided with all information necessary for the safety of the flight.

(b) A certificate holder may arrange to have flight following facilities provided by persons other that its employees, but the certificate holder continues to be responsible for operational control of each flight. Such a third party arrangement must be approved in the certificate holder's operations specification.

(c) A flight following system need not provide for in-flight monitoring by a flight following center.

(d) The certificate holder's operations specifications specify the flight following system it is authorized to use and the location of the centers.

121.127 Flight following system: Requirements

(a) Each air carrier or air taxi operator using an operations control or flight following system must show that:

(1) The system has adequate facilities and personnel to provide the information necessary for the initiation and safe conduct of each flight to:

(i) The cockpit crew of each aircraft; and

(ii) The persons designated by the air carrier or air taxi operator to perform the function of operational control of the aircraft.

(2) The system has a means of communication by private or available public facilities (such as telephone, telegraph, or radio) to monitor the progress of each flight with respect to its departure at the point of origin and arrival at its destination, including intermediate stops and diversions therefrom, and maintenance or mechanical delays encountered at those points or stops.

(b) The certificate holder must show that the personnel specified in paragraph(a) of this section, and those it designates to perform the function of operational control of the aircraft are holding a current dispatcher license without type rating and approved by the AOC holder on the applicable aircraft (after successfully achieving the appropriate approved training and skill demonstration tests).

121.129 Reserved

SUBPART G
MANUALS, LOGS AND RECORDS

121.131 Applicability

This subpart prescribes requirements for preparing and maintaining manuals by all certificate holders.

121.132 Flight safety documents system

An operator shall establish a flight safety documents system, for the use and guidance of operational personnel in accordance with EAC 121-9.

The development of a flight safety documents system is a complete process, and changes to each document compromising the system may affect the entire system.

The operational documents are to be consistent with each other, and consistent with regulations, manufacture requirements, and Human Factors principles.

It is also necessary to ensure consistency across departments as well as consistency in application. Hence, the emphasis on an integrated approach, based on the notion of the operational documents as a complete system.

121.133 operations manual

(a) An operator shall provide, for the use and guidance of operations personnel concerned, an operations manual in accordance with Appendix L to this part.

The operations manual shall be amended or revised as is necessary to ensure that the information contained therein is kept up to date.

All such amendments or revisions shall be issued to all personnel that are required to use this manual.

(b) An operator shall provide a copy of the operations manual together with all amendments and/or revisions, for review and acceptance (and, where required, approval).

(c) The operator shall incorporate in the operations manual such mandatory material as ECAA may require.

(d) Specific items in the operations manual require the approval of ECAA such as:

(1) Aerodrome operating minima for each of the aerodromes that are likely to be used as aerodromes of intended landing or as alternate aerodromes.

(2) Minimum equipment list (MEL), which will enable the pilot-in- command to determine whether a flight may be commenced or continued from any intermediate stop should any instrument, equipment or systems become inoperative.

(3) Training programs

(e) In case of lease, the operator shall provide the State of the foreign operator and the foreign State of Registry with a copy of the operation manual, upon request, together with all amendments and/or revisions to it and shall incorporate in it such mandatory material as the State of the foreign Operator or the foreign State of Registry may require.

(f) An operations manual, should be organized with the following structure:

(1) General;

(2) Aircraft operating information;

(3) Areas, routes and aerodromes; and

(4) Training.

Details of the requirements for the organization and content of an operations manual are provided in Appendix L to this part.

121.135 Operators maintenance control manual

(a) The operator shall provide the ECAA with a copy of its maintenance control manual, together with all amendments and / or revisions to it and shall incorporate in such mandatory material the ECAA may require.

(b) The operator's maintenance control manual may be issued in separate parts and shall contain:

(1) A description of the following procedures as acceptable to the ECAA, to ensure that:
  (i) Each aircraft operated is maintained in an airworthy condition;
  (ii) The operational and emergency equipment necessary for an intended flight is serviceable; and
  (iii) The Certificate of Airworthiness of each aircraft they operate remains valid.

(2) The administrative arrangements between the operator and all approved maintenance organizations;

(3) Policies and procedures for third parties that perform work on behalf the operator

(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, containing:
  (i) Maintenance tasks and the intervals, at which these are to be performed, taking into accounts the anticipated utilization of the aircraft;
  (ii) When applicable, a continuing structural integrity program;
  (iii) Procedures for changing or deviating from (i) and (ii) above; and
  (iv) When the manufacturer maintenance program includes components that do not have a stated overhaul life or are subject to condition monitoring maintenance program, the operator procedures shall include the associated program for the reliability program description for the related aircraft equipment or aircraft systems, components and powerplants.
  (v) Maintenance tasks and intervals that have been specified, as mandatory in approval of the type design shall be identified as such.

  Note: Refer to EAC 00-10 for human factor minimum requirements.

(5) The methods used for the completion and retention of the operator's maintenance records;

(6) The procedures for monitoring, accessing and reporting maintenance and operational experience;

(7) The procedures for accessing continuing airworthiness information and implementing any resulting actions;

(8) The procedures for implementing action resulting from mandatory continuing airworthiness information;

(9) 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;

(10) Aircraft types and models to which the manual applies;

(11) The procedures for ensuring that un-serviceability's affecting airworthiness are recorded and rectified;

(12) The procedures for advising the ECAA of significant in-service occurrences.

(13) Reference to appropriate ECAR Part;

(14) Instructions and procedures for maintenance, preventive maintenance and servicing;

(15) Weight and balance approved program and methods and procedures for maintaining the aircraft mass and center of gravity within approved limits;

(16) Aircraft handling procedures;

(17) Maintenance training program, curriculums, instructors, procedures and description of training system and facilities;

(18) Other information and instructions related to the certificate holder's safety program;

(19) Procedures for ensuring that the organization responsible for type design of the product or modification of that product, usually the manufacturer, received adequate reports of occurrences to that type and all mandatory continuing airworthiness information originated by ECAA concerning this product or modification so that it can issue appropriate service instructions and recommendations to all operators;

(20) A description of the procedure for receiving, amending and distributing within the maintenance organization all necessary airworthiness data from the type certificate holder or type design organization; and

(21) 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.

(22) If electronic navigation data products that have been processed for application in the air and on the ground is employed the following procedures are required:

(i) Procedures for ensuring that the process applied and the products delivered have met acceptable standards of integrity, and that the products are compatible with the intended function of the equipment that will use them. ECAA shall ensure that the operator continues to monitor both process and products

(ii) Procedure that ensure the timely distribution and insertion of current and unaltered electronic navigation data to all aircraft that require it.

(c) Copies of all amendments to the operator's maintenance control manual shall be furnished promptly to all organizations or persons to whom the manual has been issued.

(d) In case of lease, the certificate holder shall provide the State of the foreign operator and the foreign State of Registry with a copy of the operator's maintenance control manual, upon request, together with all amendments and/or revisions to it and shall incorporate in it such mandatory material as the State of the foreign Operator or the foreign State of Registry may require.

121.137 Aircraft operation manual

This manual provides cockpit crew members with information and guidance on the technical, procedural and performance aspects of the operation of the aircraft. This manual is often provided in two volumes. One volume presents "in-flight" data, i.e. limitations, normal and emergency checklists, normal and emergency procedures and amplification of these procedures, and in-flight performance data. The operator should issue operating instructions and provide information on aeroplane climb performance with all engines operating to enable the pilot-in-command to determine the climb gradient that can be achieved during the departure phase for the existing take-off conditions and intended take-off technique. This information should be included in the operations manual.. The second volume presents aircraft system descriptions and flight performance data for use in flight planning. All data and information in this manual must comply with the flight manual, where applicable. In general, the responsibility for developing and issuing amendments and revisions to these manuals rests with the aircraft manufacturer. Operators may develop additional instructions, procedures or guidance to be inserted in this manual. Such operator-developed additions should only be for clarification or expansion of the manufacturer's material, where necessary. The design of the manual shall observe Human Factors principles.

121.139 Minimum equipment list and configuration deviation list

These lists are supplied by the aircraft manufacturer in the flight manual or aircraft operating manual. For ease of use, operators extract the lists and include additional restrictions to the list for his own operational requirements and present them as a separate volume after ECAA approval. The manual should contain guidance and information on the use and interpretation of the lists.

121.141 Aircraft performance manual

Aircraft performance data is published in the flight manual. Normally, an expanded version of this is published in the aircraft operating manual. Based on this data, operators often produce their own performance manual which presents performance information for the operator's own route network. This manual typically contains take-off and landing data for each usable runway at each destination and alternate airport. Where an operator has a very extensive route network, the information could be presented in separate volumes for different geographical areas. Cruise control information is often included in the performance manual. The manual must contain information on the method of derivation of the data presented, which must be in agreement with the data presented in the aircraft flight manual. The manual must also include guidance on how to use the data presented and a number of examples of use of this data are normally included.

121.143 Emergency evacuation procedures manual

This manual shall contain information on the emergency evacuation procedures for each aircraft type for both cockpit and cabin crew. In addition to specific aircraft procedures, the manual shall contain general safety and survival information appropriate to the areas in which operations take place.

121.145 Organization of the operations manual

(a) The operations manual shall have a master subject index, placed in the policy and administration manual. In addition, each volume shall have its own subject index. There shall be a table of contents at the beginning of each volume for each section or chapter. Each page shall be numbered and have a date of original issue. Each volume shall have a checklist of pages identifying page numbers and dates of issue to ensure the validity of the contents. The entry of each amendment and/or additional page shall be recorded on a page specially provided in each volume for that purpose and signed for by the person making the amendment or addition.

(b) The executive charged with the responsibility for the control of the contents of the operations manual shall also be responsible for the issuance of individual volumes and for ensuring that appropriate amendments are dispatched to the holders of the volumes. To ensure adequate control of the volumes and their amendments, it is necessary to number each volume individually. Complete records must be kept of the disposition of each volume of the operations manual in aircraft libraries, in operations offices, etc. Records must also be kept of individuals who are holders of all, or part, of the operations manual.

(c) The executive responsible for the manual must approve amendments, revisions and additions to the operations manual. In some cases this will consist of ensuring that such changes issued by the originator of a particular volume are correct and appropriate to the operations manual. This would be the case with amendments issued by the aircraft manufacturer for the operating manuals, or with amendments issued for the route guide, when the route guide is purchased from a commercial agency. However, in the case of amendments or additions, which originate within the organization, the executive responsible must ascertain that the proposed change is necessary and determine how it is to be promulgated. In most cases the amendment will be issued through normal channels to all holders of the operations manual. In other cases, because of the urgency of the information contained in the amendment it will be necessary to issue a notice to the cockpit crew and to other concerned operational personnel. This notice shall be replaced by an amendment to the manual as soon as possible. In revising or altering the contents of the operations manual, operators must bear in mind that the ECAA is required to approve the contents of the operations manual and that certain parts of the manual include material, which is considered mandatory. It is therefore necessary that the amendments be approved by the ECAA. In practice, since much of the material in an operations manual only requires the general approval of the ECAA, it is often appropriate to agree with the authority which parts of the operations manual need the specific approval of that authority before they are amended and which parts only require notification of changes made.

(d) Amendments to the operations manual must be produced as new or replacement pages. Handwritten amendments to an operations manual are generally not acceptable. The new or replacement pages must include a page identification number and a date of issue. A letter or covering sheet must identify the reason for the amendment and provide a checklist of the amendment to be made. This is particularly important when an amendment is made to any safety-related information. Instructions shall be included for inserting the amendment in the appropriate volume and for recording insertion of the amendment. The signature of the executive approving the amendment must also appear. A revision to the list of effective pages must be included with any amendment to the operations manual.

(e) Distribution and availability:

(1) Each certificate holder shall furnish copies of the manual required by this subpart or appropriate parts of the manual (and the changes and additions thereto) to:

(i) Its appropriate ground operations and maintenance personnel;

(ii) Crewmembers; and

(iii) Representatives of the ECAA assigned to it.

(2) Each person to whom a manual or appropriate parts of it are furnished under paragraph (1) of this section shall keep it up-to-date with the changes and additions

furnished to that person and shall have the manual or appropriate parts of it accessible when performing assigned duties; and

(3) For the purpose of complying with paragraph (1) of this section, a certificate holder may furnish the persons listed therein the maintenance part of the manual on microfilm or computerized form if it also furnishes and maintains a reading device that provides a legible facsimile image of the microfilmed maintenance information and instructions.

121.147 Requirement for manual aboard aircraft

(a) Except as provided in paragraph (b) of this section, each air carrier and air taxi operator shall carry appropriate parts of the manual on each aircraft when away from the principal base. The appropriate parts must be available for use of ground or flight personnel. If an air carrier or air taxi operator carries aboard an aircraft all or any portion of the maintenance part of its manual in microfilm or computerized form, it must also carry a reading device that provides a legible facsimile image of the microfilmed maintenance information and instructions.

(b) If an air carrier or air taxi operator is able to perform all scheduled maintenance at specified stations where it keeps maintenance parts of the manual, it does not have to carry those parts of the manual aboard the aircraft en route to those stations.

121.149 Airplane or rotorcraft flight manual

(a) Each certificate holder shall keep a current approved airplane or rotorcraft flight manual for each type of transport category aircraft that it operates.

(b) In each transport category aircraft, the certificate holder shall carry either the manual required by this subpart, if it contains the information required for the applicable flight manual and this information is clearly identified as flight manual requirements, or an approved Airplane or Rotorcraft Flight Manual. If the certificate holder elects to carry the manual required by this subpart, he may revise the operating procedures sections and modify the presentation of performance data from the applicable flight manual if the revised operating procedures and modified performance data presentations are:

(1) Approved by the ECAA; and

(2) Clearly identified as airplane or rotorcraft flight manual requirements.

121.150 Flight recorder records

An operator shall ensure, to the extent possible, in the event the aeroplane becomes involved in an accident or incident, the preservation of all related flight recorder records and, if necessary, the associated flight recorders, and their retention in safe custody pending their disposition as determined in accordance with Annex 13.

SUBPART H
Aircraft Requirements and Performance Limitations

121.151 Applicability

This subpart prescribes aircraft requirements and performance limitations for all certificate holders.

121.153 Aircraft requirements: General

(a) Except as provided in paragraph (c) of this section, no certificate holder may operate an aircraft unless that aircraft:
  (1) Is registered as a civil aircraft of Egypt and carries an appropriate current airworthiness certificate; and
  (2) Is in an airworthy condition and meets the applicable airworthiness requirements including those relating to identification and equipment.

(b) A certificate holder may use an approved weight and balance control system based on average, assumed, or estimated weight to comply with applicable airworthiness requirements and operating limitations.

(c) A certificate holder may operate in common carriage, and for the carriage of mail, a civil aircraft which is leased or chartered to it without crew and is registered in a country which is a party to the Convention on International Civil Aviation ” ICAO" if:
  (1) The aircraft carries an appropriate airworthiness certificate issued by the country of registration and meets the registration and identification requirements of that country;
  (2) The aircraft is of a type design which is approved by the ECAA and complies with all of the requirements that would be applicable to that aircraft were it registered in Egypt, including the requirements which must be met for issuance of standard airworthiness certificate (including type design conformity, condition for safe operation, and the noise, fuel venting, and engine emission requirements), except that an Egyptian registration certificate and standard airworthiness certificate will not be issued for the aircraft;
  (3) The aircraft is operated by crewmembers employed by the certificate holder, with ECAA licenses validated by the country of registration; and
  (4) The certificate holder files a copy of the aircraft lease or charter agreement with the ECAA.

121.155 Use of foreign aircrew

The ECAA may grant a deviation from the crewmembers requirements of 121.153 (c) (3) if the certificate holder provides adequate justification for using foreign licensed crewmembers or crewmembers not employed by the certificate holder.

121.157 Aircraft certification and equipment requirements

(a) No certificate holder may operate an aircraft unless that aircraft was type certificated as a transport category aircraft under Part 25, or helicopter type certificated under Parts 27 or 29, or as a commuter category aircraft under Part 23, or equivalent and meets the performance requirements of its type certificate data sheet and the aircraft meets the requirements of 121.173 (c).

(b) All aircraft operated by an air taxi certificate holder must meet the performance requirements of its type certificate data sheet, if available, and all performance data must be approved by the ECAA.

121.159 Single-engine aircraft prohibited

No air carrier certificate holder may operate a single engine aircraft. Single engine aircraft operated by air taxi certificate holders shall only be operated in conditions of weather and light, and over such routes and diversions therefrom, that permit a safe forced landing to be executed in the event of engine failure.

121.161 Aircraft limitation: Extended operations

(f) Unless authorized \ specific approval issued by ECAA for extended diversion time operation (EDTO) in accordance with appendix M of this part,

(g) The operator shall not operate a two engine aeroplane over a route that contains a point further from adequate airport, under standard conditions in still air than:

(1) For aeroplanes with maximum operational passenger seating configuration 20 or more, or maximum takeoff weight of 45360 Kg or more.

The distant flown in 60 minutes at the one-engine inoperative (OEI) cruising speed determined according to (c);

(2) For aeroplanes powered by turbine engines with maximum operational passenger seating configuration 19 or less, or maximum takeoff weight less than 45360 Kg. The distance flown in 120 minutes, or subject to approval by ECAA180 minutes, at the one-engine inoperative (OEI) cruising speed determined according to (c);

(h) The operator shall determine a speed for the calculation of the maximum distance to adequate airport for each two engined aeroplane type or variant operated, not exceeding Vmo (maximum operating speed) based upon the true airspeed that the aeroplane can maintain with one engine inoperative.

(i) The operator shall include the following data, specific to each type or variant, in the operational manual.

(1) the determined one engine inoperative cruising speed, and

(2) the determined maximum distance from adequate an airport

(j) To obtain the approval referred to in (b)(2), The operator shall provide evidence that:

(1) The aeroplane/engine combination holds an extended range operations with two engined aeroplanes (EDTO) type design and reliability approval for the intended operation ;

(2) A set of conditions has been implemented to ensure that the aeroplane and its Engines are maintained to meet the necessary reliability criteria, and

(3) The flight crew and all other operations personnel involved are trained and suitably qualified to conduct the intended operation.

(k) No certificate holder may operate a land aircraft in an extended overwater operation unless it is certificated or approved as adequate for ditching.

(l) The specific EDTO approval shall identify the applicable threshold time established for each particular aeroplane and engine combination.

121.163 Aircraft proving tests

(a) No air carrier or air taxi certificate holder may operate an aircraft before that aircraft has been proven for use in air carrier or air taxi operations, as appropriate, unless an aircraft of that type has had, in addition to the aircraft certification tests, proving test(s) acceptable to the ECAA. The ECAA has the authority to accept, modify or reject the operator's plan for the proving test(s). a part of proving test(s) must be flown at night.

(b) A certificate holder may not operate an aircraft of a type that has been proven for use in its class of operation if it has not previously proved that type, or if that aircraft has been materially altered in design, unless:

(1) The aircraft has had proving test(s) acceptable to the ECAA, including a representative flight(s) into en route airports; or

(2) The ECAA specifically authorizes deviations when special circumstances make full compliance with this paragraph unnecessary in a particular case.

(c) An air taxi operator may, with ECAA approval, operate a helicopter that has not before been proven for use in air taxi operations if the helicopter has been used extensively in the services of the armed forces and meets the requirements of paragraph (b) of this section.

(d) For the purposes of paragraph (b) of this section, a type of aircraft is considered to be materially altered in design if the alterations include:
  (1) The installation of powerplants other than those of a type similar to those with which it is certificated; or.
  (2) Alterations to the aircraft or its components have been made, that materially affect flight characteristics.

(e) No certificate holder may carry passengers in an aircraft during proving tests, except for those needed to make the test and those designated by ECAA, However, it may carry mail, express, or other cargo, when approved.

SUBPART I
Performance Limitations

121.164 General

(a) No certificate holder may operate an aircraft without complying with the operating limitations specified in the approved aircraft or helicopter flight manual, markings, placards or as otherwise prescribed by the certifying authority of the country of registry as approved by the ECAA. Aircraft must be operated in compliance with the approved flight manual or the approved performance data required in 121.134 and 121.136 of this Part and in compliance with the performance criteria as described in ICAO Annex 6, Part I, Attachment C, airplane performance operating limitations and ICAO Annex 6, Part III, Chapter 3, helicopter performance operating limitations.

(b) Helicopters shall be operated in accordance with a code of performance established by ECAA, in compliance with the applicable Standards of this chapter.

Note 1.— The code of performance reflects, for the conduct of operations, both the various phases of flight and the operational environment. The Helicopter Code of Performance Development Manual (Doc 10110)provides guidance to assist States in establishing a code of performance.

Note 2.— Concerning compliance with codes of performance, this Section requires operators to comply with the laws, regulations and procedures of the ECAA in which their helicopters are operated. Article 11 of the Convention forms the basis for this requirement.

(c) In conditions where the safe continuation of flight is not ensured in the event of a critical power-unit failure, helicopter operations shall be conducted in conditions of weather and light, and over such routes and diversions, that permit a safe forced landing to be executed

(d) The level of performance defined by the appropriate parts of the code of performance referred to above for the helicopters shall be consistent with to the overall level embodied in the Standards of subpart.

(e) ECAA shall take such precautions as are reasonably possible to ensure that the general level of safety contemplated by these provisions is maintained under all expected operating conditions, including those not covered specifically by the provisions of this subpart.

(f) In developing a code of performance, ECAA shall apply a risk assessment methodology .

(g) All factors that significantly affect the performance of the aeroplane shall be taken in the account , including but not limited to: the mass of the aeroplane, the operating procedures, the pressure-altitude appropriate to the elevation of the aerodrome, the runway slope, the ambient temperature, the wind, and surface conditions of the runway at the expected time of use, i.e. presence of snow, slush, water, and/or ice for

landplanes, water surface condition for seaplanes. Such factors shall be taken into account directly as operational parameters or indirectly by means of allowances or margins, which may be provided in the scheduling of performance data or in the comprehensive and detailed code of performance in accordance with which the aeroplane is being operated.

(h) all factors that significantly affect the performance of the aeroplane shall be taken in the account , including but not limited to: the mass of the aeroplane, the operating procedures, the pressure-altitude appropriate to the elevation of the aerodrome, the runway slope, the ambient temperature, the wind, and surface conditions of the runway at the expected time of use, i.e. presence of snow, slush, water, and/or ice for landplanes, water surface condition for seaplanes. Such factors shall be taken into account directly as operational parameters or indirectly by means of allowances or margins, which may be provided in the scheduling of performance data or in the comprehensive and detailed code of performance in accordance with which the aeroplane is being operated. Where ECAA permits IMC operations in performance Class 3, such operations shall be conducted in accordance with item 121.179.

(i) ECAA may, based on the result of a risk assessment, allow for variations without a safe forced landing to be included in the Code of Performance established in accordance with the provisions of (b) The risk assessment shall take into consideration at least the following:

(1) the type and circumstances of the operation;
(2) the area/terrain over which the operation is being conducted;
(3) the probability of, and length of exposure to, a critical engine failure and the tolerability of such an event;
(4) the procedures and systems for monitoring and maintaining the reliability of the engine(s);
(5) the training and operational procedures to mitigate the consequences of the critical engine failure; and
(6) helicopter equipment.

Note.— Guidance on conduct of the risk assessment to allow for variations to the need for a safe forced landing, including mitigation strategies to reduce the risk, is contained in Doc 10110.

Note.— Guidelines for using runway surface condition information on board aircraft in accordance with 4.4.11 are contained in the Aeroplane Performance Manual (Doc 10064).

121.165 Take-off performance requirements

The aircraft shall comply with all of the requirements listed below and be able, in the event of a critical power-unit failing at any point in the take-off, either to discontinue the take-off and stop within the accelerate-stop distance available, or to continue the take-off and clear all obstacles along the flight path by an adequate margin.

(a) The weight of the aircraft at take-off is not to exceed the maximum take-off weight specified in the flight manual for the altitude at which the take-off is to be made.
(b) The performance of the aircraft as determined from the information contained in the flight manual is such that:
(1) The accelerate-stop distance required does not exceed the accelerate-stop distance available;
(2) The take-off distance required does not exceed the take-off distance available;
(3) The take-off path provides a vertical clearance of not less than 15.2 m up to D = 500 m (50ft up to D = 1500ft) and 15.2 + 0.01 [D – 500] m (50 + 0.01 [D – 1500] ft) thereafter, above all obstacles lying within 60 m plus half the wing span of the aircraft plus 0.125D on either side of the flight path, except that obstacles lying beyond 1 500

m on either side of the flight path need not be cleared. The distance D is the horizontal distance that the aircraft has traveled from the end of the take-off distance available; and

(4) In case the flight path includes a turn with bank greater than 15 degrees, the clearances must be increased by an adequate amount during the turn, and the distance D is measured along the intended track.

(c)Take-off and initial climb phase (helicopter) :

(1) Operations in performance Class 1. The helicopter shall be able, in the event of the failure of the critical power-unit being recognized at or before the take-off decision point, to discontinue take-off and stop within the rejected take-off area available or, in the event of the failure of the critical power-unit being recognized at or after the take-off decision point, to continue the take-off, clearing all obstacles along the flight path by an adequate margin until the helicopter is in a position to comply with 121.169.

(2) Operations in performance Class 2. The helicopter shall be able, in the event of the failure of the critical power-unit at any time after reaching DPATO, to continue the take-off, clearing all obstacles along the flight path by an adequate margin until the helicopter is in a position to comply with 3.2.7.3.1. Before the DPATO, failure of the critical power-unit may cause the helicopter to force-land; therefore the conditions stated in 121.164

(3) Operations in performance Class 3. At any point of the flight path, failure of a power-unit will cause the helicopter to force-land; therefore the conditions stated in 121.164 shall apply.

121.167 Takeoff conditions

For the purpose of 121.165, the performance is that corresponding to:

(a) The weight of the aircraft at the start of take-off;

(b) An altitude equal to the elevation of the aerodrome corrected for barometric pressure;

(c) The ambient temperature at the time of take-off;

(d) The runway slope in the direction of take-off;

(e) Not more than 50 per cent of the reported headwind component and not less than 150 per cent of the reported tailwind component will be used in calculating the takeoff performance;

(f) The calculation of takeoff performance must consider the distance required to align the aircraft and the charting accuracy of the takeoff data;

121.169 Landing performance requirements

(a) The calculated weight for the expected time of landing at the airport of intended landing or any destination alternate airport is not to exceed the maximum specified in the flight manual for the elevation of that airport;

(b) An approach to land shall not be continued below 300 m (1000ft) above aerodrome elevation unless the pilot-in-command is satisfied that, with the runway surface condition information available, the aeroplane performance information indicates that a safe landing can be made.

Note 1. The procedures used by aerodromes to assess and report runway surface conditions are contained in the PANS-Aerodromes (Doc 9981) and those for using runway surface condition information on board aircraft in the Aeroplane Performance Manual (Doc 10064).

Note 2. Guidance on development of aeroplane performance information is contained in the Aeroplane Performance Manual (Doc 10064).

(c) The landing distance at any alternate airport, as determined from the flight manual, is not to exceed 70 per cent of the landing distance available on:

(1) The most suitable landing surface for a landing in still air; and, if more severe; and

(2) Any other landing surface that may be required for landing because of expected wind conditions at the time of arrival.

(d) Operations in performance Class 2. In the event of the failure of the critical power-unit before the DPBL, the helicopter shall, at the destination and at any alternate, after clearing all obstacles in the approach path, be able either to land and stop within the landing distance available or to perform a balked landing and clear all obstacles in the flight path by an adequate margin equivalent to that specified in 121.165. After the DPBL, failure of a

power-unit may cause the helicopter to force-land; therefore the conditions stated in this subpart shall apply.

(e) Operations in performance Class 3. At any point of the flight path, failure of a power-unit will cause the helicopter to force-land; therefore the conditions stated in this subpart shall apply.

(f) Landing. The aeroplane shall, at the aerodrome of intended landing and at any alternate aerodrome, after clearing all obstacles in the approach path by a safe margin, be able to land, with assurance that it can come to a stop or, for a seaplane, to a satisfactorily low speed, within the landing distance available. Allowance shall be made for expected variations in the approach and landing techniques, if such allowance has not been made in the scheduling of performance data.

Note.— guidelines on appropriate margins for the "at time of landing" distance assessment is contained in the Aeroplane Performance Manual (Doc 10064

121.173 Landing conditions

The landing distances are not to exceed those corresponding to:

(a) The calculated weight of the aircraft for the expected time of landing;
(b) An altitude equal to the elevation of the airport corrected for barometric pressure;
(c) The expected temperature at which landing is to be made or a declared temperature giving an equivalent average level of performance;
(d) The runway surface slope in the direction of landing;
(e) In the case of 121.169(b)(1) and 121.169(c)(1), still air;
(f) In the case of 121.169(b)(2) and 121.169(c)(2), not more than 50% of the expected headwind and not less than 150% of the expected tailwind component will be used in calculating landing performance; and
(g) The calculation of landing distance must consider clearing obstacles and landing techniques, if not accounted for in the landing performance data.

121.175 En route performance requirements

(a) The aircraft shall be able, in the event of the critical power-unit becoming inoperative at any point along the route or planned diversions there-from, to continue the flight to an aerodrome at which the landing requirements of 121.169(c) can be met, without flying below the minimum flight altitude at any point.
(b) In the case of aircraft having three or more power-units, on any part of a route where the location of en-route alternate aerodromes and the total duration of the flight are such that the probability of a second power-unit becoming inoperative must be allowed for in order to maintain an adequate level of safety, the aircraft shall be able, in the event of any two power-units becoming inoperative, to continue the flight to an en-route alternate airport and land.
(c) Operations in performance Class 3. The helicopter shall be able, with all power-units operating, to continue along its intended route or planned diversions without flying at any point below the appropriate minimum flight altitude. At any point of the flight path, failure of a power-unit will cause the helicopter to force-land.

121.177 En route performance includes (EDTO)

(a) Operators conducting operations beyond 60 minutes from a point on a route to an en-route alternate aerodrome shall ensure that:
(1) for all aero planes:
(i) En-route alternate aerodromes are identified; and
(ii) The most up-to-date information is provided to the flight crew on identified en-route alternate aerodromes, including operational status and meteorological conditions;
(iii) For aero planes with two turbine engines, the most up-to-date information provided to the flight crew indicates that conditions at identified en-route alternate aerodromes will be at or above the operator's established aerodrome operating minima for the operation at the estimated time of use.

(b) All operators shall ensure that the following are taken into account and provide the overall level of safety intended by the provisions of Annex 6, Part I:

(1) Operational control and flight dispatch procedures;

(2) Operating procedures; and

(3) Training programmes.

(c)) The ECAA may, based on the results of a specific safety risk assessment conducted by the operator which demonstrates how an equivalent level of safety will be maintained, approve operations beyond the time limits of the most time-limited system. The specific safety risk assessment shall include at least the:

(1) Capabilities of the operator;

(2) Overall reliability of the aero plane;

(3) Reliability of each time-limited system;

(4) Relevant information from the aero plane manufacturer; and

(5) Specific mitigation measures.

121.179 Additional requirements for operations of helicopters in performance Class 3 and Single engine turbine – powered aeroplanes in IMC, except special VFR flights

(a) For Helicopters in performance class 3

1. Operations in performance Class 3 in IMC shall be conducted only over a surface environment acceptable to ECAA over which the operations are performed.
2. In approving operations by helicopters operating in performance Class 3 in IMC, the State of the Operator shall ensure that the helicopter is certificated for flight under IFR and that the overall level of safety intended by the provisions of Annexes 6 and 8 is provided by:
   A. The reliability of the engines;
   B. The operator's maintenance procedures, operating practices and crew training programmes; and
   C. Equipment and other requirements provided in accordance with Appendix 2.

Note.— Guidance on additional requirements for operations of helicopters in performance Class 3 in IMC is contained in Appendix 2.

3. Operations of helicopters operating in performance Class 3 in IMC shall have a programme for engine trend monitoring and shall utilize the engine and helicopter manufacturers' recommended instruments, systems and operational/maintenance procedures to monitor the engines.

Note:-- In order to minimize the occurrence of mechanical failures, helicopters operating in IMC in performance Class 3 should utilize vibration health monitoring for the tail-rotor drive system.

(b) For Single engine turbine – powered aeroplanes, ECAA shall ensure that the airworthiness certification of the aeroplane is appropraite and provided by:

1. The reliability of the turbine engine;
2. The operator maintenance procedures, operating practices, flight dispatch procedures and crew training programs; and
3. Equipments and other requirements.

Note:-- All single engine turbine-powered aeroplanes operated at night and/or in IMC shall have an engine trend mointoring system, and those aeroplanes for which the individual certificate of airworthiness is first issued on or after 1 January 2005 shave have an automatic trend mointoring system.

121.180 through 121.284 Reserved

SUBPART J
Special Airworthiness Requirements

121.285 Carriage of cargo in passenger compartments :-

(a) Except as provided in paragraph (b), (c), or (d) or this section, no certificate holder may carry cargo in the passenger compartment of an airplane.

(b) Cargo , including carry-on baggage , may be carried in the passenger compartment only in an approved cargo rack , bin , or compartment

(c) Cargo may be carried aft of a bulkhead or divider in any passenger compartment provided the cargo is restrained (by approved restrainer) to the load factors in ECAR 25 and is loaded as follows:

1. It is properly secured by a safety belt or other approved tie-down having enough strength to eliminate the possibility of shifting under all normally anticipated flight and ground conditions.
2. It is packaged or covered in a manner to avoid possible injury to passengers and passenger compartment occupants.
3. It does not impose any load on seats or the floor structure that exceeds the load limitation for those components.
4. Its location does not restrict access to or use of any required emergency or regular exit, or of the aisle in the passenger compartment.
5. Its location does not obscure any passenger's view of the “seat belt” sign, “no smoking” sign, or required exit sign, unless an auxiliary sign or other approved means for proper notification of the passenger is provided.

(d) Cargo, including carry-on baggage, may be carried in the passenger compartment of a non-transport category airplane type certificated after December 31, 1964, if it is carried in an approved cargo rack, bin, or compartment installed in or on the airplane, if it is secured by an approved means, or if it is carried in accordance with each of the following:

1. For cargo, it is properly secured by a safety belt or other tie-down having enough strength to eliminate the possibility of shifting under all normally anticipated flight and ground conditions, or for carry-on baggage, it is restrained so as to prevent its movement during air turbulence.
2. It is packaged or covered to avoid possible injury to occupants.
3. It does not impose any load on seats or in the floor structure that exceeds the load limitation for those components.
4. It is not located in a position that obstructs the access to, or use of, any required emergency or regular exit, or the use of the aisle between the crew and the passenger compartment, or is located in a position that obscures any passenger's view of the “seat belt” sign, “no smoking” sign or placard, or any required exit sign, unless an auxiliary sign or other approved means for proper notification of the passengers is provided.

5. It is not carried directly above seated occupants.
6. It is stowed in compliance with this section for takeoff and landing.
7. For cargo-only operations, paragraph (d)(4) of this section does not apply if the cargo is loaded so that at least one emergency or regular exit is available to provide all occupants of the airplane a means of unobstructed exit from the airplane if an emergency occurs.

121.287 carriage of cargo in cargo compartments.

(a) When the certificate holder is authorized to carry cargo and mail on the available spaces in the cargo compartments 'the operational and training requirements must be met .

(b) when cargo is carried in cargo com- apartments that are designed to require extinguish any fire that may occur during flight the cargo must be loaded so as allow a crewmember to effectively reach all parts of the compartment with the contents of a hand fire extinguisher.

121.291 Demonstration of emergency evacuation procedures

(a) Each certificate holder must conduct an actual demonstration of emergency evacuation procedures in accordance with paragraph (a) of appendix D to this Part to show that each type and model of aircraft with a seating capacity of more than 44 passengers to be used in its passenger-carrying operations allows the evacuation of the full seating capacity, including crewmembers, in 90 second or less, if that aircraft type and model has not been shown to be in compliance with:
   (1) Parts 25 or 27, during type certification; or
   (2) Section 121.291 (a)

(b) Each certificate holder must conduct a partial demonstration of emergency evacuation procedures in accordance with paragraph (c) of this section upon:
   (1) Initial introduction of a type and model of aircraft into passenger/carrying operation, if the type certificate holder has not conducted an actual demonstration under paragraph (a) of this section;
   (2) Changing the number, location, or emergency evacuation duties or procedures of cabin crew who are required by 121.391; or
   (3) Changing the number, location, type of emergency exits, or type of opening mechanism on emergency exits available for evacuation .

(c) In conducting a partial demonstration each certificate holder must:
   (1) Demonstrate the effectiveness of its crewmember emergency training and evacuation procedures by conducting a demonstration without passengers and observed by the ECAA, in which the cabin crew for that type and model of aircraft using that operator's line operating procedures, open 50 percent of the required floor-level emergency exits and 50 percent of the required non-floor-level emergency exits, whose opening by a cabin crew is defined as an emergency evacuation duty under 121.397. The exits will be selected by the ECAA and must be ready for use within 15 seconds:
   (2) Apply for and obtain approval from the ECAA before conducting the demonstration;
   (3) Use cabin crew in this demonstration who have been selected at random by the ECAA, have completed the certificate holder's ECAA approved training program for the type and model of aircraft, and have passed a written or practical examination on the emergency equipment and procedures: and
   (4) Apply for and obtain approval from the ECAA before commencing operations with this type and model aircraft.

(d) Each certificate holder operating or proposing to operate one or more landplanes in extended overwater operations, or otherwise required to have certain equipment under 121.339, must show, by simulated ditching conducted in accordance with the ECAA requirements, that it has the ability to efficiently carry out its ditching procedures.

(e) For a type and model airplane for which the simulated ditching specified in paragraph (d) has been conducted by a Part 121 certificate holder, the ECAA requirements are complied with if each life raft is removed from stowage, one life raft is launched and inflated (or one slide life raft is inflated) and crewmembers assigned to the inflated life raft display and

describe the use of each item of required emergency equipment. The life raft or slide life raft to be inflated will be selected by the ECAA.

121.293 through 121.299 Reserved

SUBPART K
Instrument and Equipment Requirements

121.301 Applicability

This subpart prescribes instrument and equipment requirements for all certificate holders.

121.303 Aircraft instruments and equipment and flight documents

(I) Unless otherwise specified, the instrument, equipment, and flight documents requirements of this subpart shall be installed or carried, as appropriate, in aeroplanes according to the aeroplane used and to the circumstances under which the flight is to be conducted. An aeroplane shall be equipped with instruments which will enable the flight crew to control the flight path of the aeroplane, carry out any required procedural manoeuvres and observe the operating limitations of the aeroplane in the expected operating conditions.

(II) Instruments and equipment must be approved and installed in accordance with the applicable airworthiness requirements.

(III) Each airspeed indicator must be calibrated in knots and each airspeed limitation and item of related information in the Aircraft Flight Manual or approved performance data and pertinent placards should be expressed in knots. If any speed limitations are indicated in Mach, then the aircraft must be equipped with an approved Mach indicator.

(d) Except as provided in 121.304, no person may operate any aircraft unless the instruments and equipment required to comply with the airworthiness requirements under which the aircraft is type certificated are in operable condition.

121.304 Inoperable instruments and equipment: Minimum Equipment List (MEL)

(a) No person may take off an aircraft with inoperable instrument installed unless the following conditions are met:
  (1) An approved Minimum Equipment List (MEL) exists for that aircraft;
  (2) The ECAA has issued the certificate holder operations specifications authorizing operations in accordance with an approved MEL. The cockpit crew shall have direct access at all times prior in flight to all of the information contained in the approved MEL through printed or other means approved by the ECAA in the certificate holders operations specifications. An approved MEL, as authorized by the operations specifications, constitutes an approved change to the type design without requiring re-certification;
  (3) The approved MEL must:
    (i) Be prepared in accordance with the limitations specified in paragraph (b) of this section and be based on the guidance provided in the aircraft Master Minimum Equipment List (MMEL) which is published by the manufacturer and approved by the State of design; and
    (ii) Provide for the operation of the aircraft with certain instruments and equipment in an inoperable condition provided an acceptable margin for safety is maintained.
  (4) Systems or equipment accepted as inoperative for flight must be placarded where appropriate and the records identifying the inoperable instruments and equipment and the information required by (a) (3) (ii) of this section must be available to the pilot;
  (5) The aircraft is operated under all applicable conditions and limitations contained in the MEL and the operations specifications authorizing use of the MEL; and
  (6) For a particular system or item of equipment to be accepted as inoperative it may be necessary to establish a maintenance or operations procedure that must be completed prior to flight.

(b) The following instruments and equipment may not be included in the MEL:
  (1) Instruments and equipment that are either specifically or otherwise required by the airworthiness requirements under which the aircraft is type certificated and which are essential for safe operations under all operating conditions;
  (2) Instruments and equipment required by an airworthiness directive to be in operable condition unless the airworthiness directive provides otherwise; and
  (3) Instruments and equipment required for specific operation by this Part.

(c) Notwithstanding paragraphs (b) (1) and (b) (3) of this section, an aircraft with inoperable instruments or equipment may be operated under a special flight permit, or under a defect control program approved by the ECAA.

(IV) The minimum equipment list is designed to provide the ability to operate the aircraft with inoperative equipment for a specified period of time.

(V) Operators are required to ensure that no flight is commenced with multiple MEL items before determining that the cumulative effect of the items being inoperative will not degrade the level of safety of the operation taking into consideration the conditions for the flight and the workload for the crewmembers.

(VI) The exposure that could result from additional equipment failures during continued operations must also be considered in determining the effect on the flight operating safely.

(VII) MEL Rectification Interval Extension:

Under certain conditions, such as a shortage of parts from manufacturers, or other unforeseen situations, air operators may be unable to comply with specified rectification intervals, to preclude that from happening, the following are applied:

(1) Subject to procedures approved by the ECAA, the operator may internally approve one time extension of the rectification intervals B and C .

(2) ECAA may approve a second extension of the rectification intervals B and C , if the conditions of extension are demonstrated by the operator and verified by the ECAA.

(3) In case where the operator does not hold an internal rectification intervals extension approval privileges, the operator may apply for an extension of rectification intervals B and C to the ECAA.

121.305 Flight and navigational equipment

No person may operate an aircraft unless it is equipped with the following flight and navigational instruments and equipment:

(a) An airspeed indicating system with heated pitot tube or equivalent means for preventing malfunctioning due to icing;

(b) A sensitive altimeter: Two altimeters are required for operations at night or IFR;

(c) A sweep-second hand clock (or approved equivalent);

(d) A free-air temperature indicator;

(e) A gyroscopic bank and pitch indicator (artificial horizon) for aeroplanes. For helicopter three attitude indicators (artificial horizon), one of which may be replaced by a turn indicator;

(f) A gyroscopic rate-of turn indicator combined with an integral slip-skid indicator (turn-and-bank indicator) except that only a slip-skid indicator is required when a third attitude instrument system usable through flight attitudes of 360 degrees of pitch and roll is installed in accordance with paragraph (j) of this section;

(g) A gyroscopic direction indicator (directional gyro or equivalent) and means of indicating whether the power supply to the gyroscopic instrument is adequate;

(h) A magnetic compass;

(i) A vertical speed indicator (rate-of-climb indicator); and

(j) For all aircraft with a certificated takeoff weight of over 5700 kg; in addition to two gyroscopic pitch and bank indicators (ADI's) for use at the pilot stations, a third such instrument that:

(1) Must be powered and illuminated from a source independent of the electrical generating system;

(2) Continues reliable operation for a minimum of 30 minutes after total failure of the electrical generating system;

(3) Operates independently of any other attitude system;

(4) Is operative without selection after total failure of the electrical generating system;

(5) Is located on the instrument panel in a position acceptable to the ECAA and is plainly visible and usable by any pilot when at his station; and

(6) Remains illuminated during all phases of flight.

(k) Such additional instruments or equipment as may be prescribed by the ECAA.

121.307 Engine instruments

No person may conduct any operation under this Part without the following engine instruments, as appropriate:

(a) A carburetor (or fuel control unit) air temperature indicator for each engine;

(b) A cylinder head temperature indicator for each air-cooled engine;

(c) A fuel pressure indicator for each engine;

(d) A fuel flow meter or fuel mixture indicator for each engine not equipped with an automatic altitude mixture control;
(e) A means for indicating fuel quantity in each fuel tank to be used;
(f) A manifold pressure indicator for each engine;
(g) An oil pressure indicator for each engine;
(h) An oil quantity indicator for each oil tank when a transfer or separate oil reserve supply is used;
(i) An oil-in temperature indicator for each engine;
(j) A tachometer for each engine; and
(k) An independent fuel pressure warning device for each engine or a master warning device for all engines with a means for isolating the individual warning circuits from the master warning device; and
(l) A device for each reversible propeller, to indicate to the pilot when the propeller is in reverse pitch, that complies with the following:
  (1) The device may be actuated at any point in the reversing cycle between the normal low pitch stop position and full reverse pitch, but it may not give an indication at or above the normal low pitch stop position; and
  (2) The source of indication must be actuated by the propeller blade angle or be directly responsive to it.

121.308 Lavatory fire protection

(a) No person may operate passenger-carrying transport category aircraft unless each lavatory in the aircraft is equipped with a smoke detector system or equivalent that provides a warning light in the cockpit or provides a warning light or audio warning in the passenger cabin which would be readily detected by a cabin crew, taking into consideration the positioning of cabin crews throughout the passenger compartment during various phases of flight.
(b) No person may operate passenger-carrying transport category aircraft unless each lavatory in the aircraft is equipped with a built-in fire extinguisher for each disposal receptacle for towels, paper or waste located within the lavatory. The built-in fire extinguisher must be designed to discharge automatically in each disposal receptacle upon occurrence of a fire in the receptacle.
(c) Any agent used in a built-in fire extinguisher for each lavatory disposal receptacle for towels, paper or waste in an aircraft for which the individual certificate of airworthiness is first issued on or after 31 December 2011 and any extinguishing agent used in a portable fire extinguisher in an Aircraft for which the individual certificate of airworthiness is first issued on or after 31 December 2018 shall**:**
  (1) meet the applicable minimum performance requirements of the state of registry; and
  (2) not be of a type listed in the 1987 Montreal Protocol on substances that deplete the Ozone Layer as it appears in the Eighth Edition of the Handbook for the Montreal Protocol on substances that deplete the Ozone Layer, Annex A, Group II

  Note: - Information concerning extinguishing agents is contained in the UNEP Halon Technical Options Committee Technical Note No. 1- New Technology Halon Alternatives and FAA Report No. DOT/FAA/AR-99-63, Options to the use of Halons for Aircraft Fire Suppression systems

121.309 Emergency equipment

(a) General: No person may operate an aircraft unless it is equipped with the emergency equipment listed in this section and, for air carrier aircraft, in 121.310. A diagram that indicates the type and location of all aircraft emergency equipment must be clearly displayed at the entrance door of the aircraft.
(b) Each item of emergency and flotation equipment listed in this section and, for air carrier aircraft the emergency equipment required in Parts: 121.310, 121.339 and 121.340:
  (1) Must be inspected regularly in accordance with inspection periods established in the approved maintenance schedule to ensure its condition for continued serviceability and immediate readiness to perform its intended emergency purposes;
  (2) Must be readily accessible to the crew and, with regard to equipment located in the passenger compartment, to passengers;
  (3) Must be clearly identified and clearly marked to indicate its method of operation; and

(4) When carried in a compartment or container, must be carried in a compartment or container marked as to contents and the compartment or container, or the item itself, must be marked as to date of last inspection.

(c) Hand fire extinguishers for cockpit, passenger, and cargo and galley compartments. Hand fire extinguishers of an approved type must be provided for use in crew, passenger, and cargo compartments in accordance with the following:

(1) The type and quantity of extinguishing agent must be suitable for the kinds of fires likely to occur in the compartment where the extinguisher is intended to be used and, for passenger compartments, must be designed to minimize the hazard of toxic gas concentrations.

(2) Cargo compartments. At least one hand fire extinguisher must be provided and conveniently located for use in each Class E cargo compartment according to Part 25 or equivalent, which is accessible to crewmembers during flight.

(3) Galley compartments. At least 2 hand fire extinguisher located according to aircraft flight manual.

(4) Cockpit Crew compartment: At least one hand fire extinguisher must be conveniently located on the flight deck for use by the cockpit crew.

(5) Passenger compartment: At least one hand fire extinguisher must be conveniently located in the passenger compartment of each aircraft accommodating more than 6 but less than 31 passengers, and at least two hand fire extinguishers must be conveniently located in each aircraft accommodating more than 30 passengers. At least 2 hand fire extinguishers must be conveniently located and uniformly distributed in the passenger compartment of aircraft having a passenger seating capacity of 60 or less and for the passenger compartment of each aircraft having a passenger seating capacity of more than 60, there must be at least the following number of hand fire extinguishers conveniently located and uniformly distributed throughout the compartment;

Minimum number of hand fire extinguishers

Passenger seating capacity:	Quantity
61 through 200	3
201 through 300	4
301 through 400	5
401 through 500	6
501 through 600	7
601 or more	8

(d) First-aid and emergency medical equipment. Approved first-aid kits and, on passenger carrying flights of air carrier aircraft, an emergency medical kit for treatment of injuries or medical emergencies that might occur during flight time or in minor accidents must be provided and must meet the specifications and requirements of Appendix A

(e) Crash axe. Each air carrier aircraft must be equipped with a crash axe.

(f) Megaphones. Each passenger-carrying air carrier aircraft must have a portable battery-powered megaphone or megaphones readily accessible to the crewmembers assigned to direct emergency evacuation, installed as follows:

(1) One megaphone on each aircraft with a seating capacity of more than 60 and less than 100 passengers, at the most rearward location in the passenger cabin where it would be readily accessible to a normal cabin crew seat. However, the ECAA may grant a deviation from the requirements of this subparagraph if he finds that a different location would be more useful for evacuation of persons during an emergency.

(2) Two megaphones in the passenger cabin on each aircraft with a seating capacity of more than 99 passengers, one installed at the forward end and the other at the most rearward location where it would be readily accessible to a normal cabin crew seat.

(g) Time capability of cargo compartment fire suppression system:

Recommendation.— All flights should be planned so that the diversion time to an aerodrome where a safe landing could be made does not exceed the cargo compartment fire suppression time capability of the aeroplane, when one is identified in the relevant aeroplane documentation, reduced by an operational safety margin specified by ECAA

Note 1.Cargo compartment fire suppression time capabilities will be identified in the relevant aeroplane documentation when they are to be considered for the operation.

Note 2. Fifteen minutes is an operational safety margin commonly retained for that purpose.

121.310 Additional emergency equipment

(a) Means for emergency evacuation. Each passenger-carrying landplane emergency exit (other than over-the-wing) that is more than 6 feet from the ground with the aircraft on the ground and the landing gear extended. must have an approved means to assist the occupants in descending to the ground. The assisting means for a floor-level emergency exit must meet the requirements under which the aircraft was type certificated. An assisting means that deploys automatically must be armed during taxiing, takeoffs, and landings. However, if the ECAA finds that the design of the exit makes compliance impractical, it may grant a deviation from the requirement of automatic deployment if the assisting means automatically erects upon deployment.

(b) Interior emergency exit marking. The following must be complied with for each passenger-carrying aircraft:
  (1) Next to each floor level passenger emergency exit, except that one sign may serve two such exits if they both can be seen readily from that sign, and on each bulkhead or divider that prevents fore and after vision along the passenger cabin, to indicate emergency exits beyond and obscured by it, except that if this is not possible the sign may be placed at another appropriate location; and
  (2) Each passenger emergency exit marking and each locating sign must meet the following:
    (i) Each passenger emergency exit, its means of access, and its means of opening must be conspicuously marked. The identity and location of each passenger emergency exit must be recognizable from a distance equal to the width of the cabin. The location of each passenger emergency exit must be indicated by a sign visible to occupants approaching along the main passenger aisle. There must be a locating sign;
    (ii) Above the aisle near each over-the-wing passenger emergency exit, or at another ceiling location if it is more practical because of low headroom; and
    (iii) For an aircraft for which the application for the type certificate was filed on or after May 1,1972, each passenger emergency exit marking and each locating sign must be manufactured to meet the interior emergency exit marking requirements under which the aircraft was type certificated.

(c) Lighting for interior emergency exit markings. Each passenger-carrying air carrier aircraft must have an emergency lighting system, independent of the main lighting system. However, sources of general cabin illumination may be common to both the emergency and the main lighting systems if the power supply to the emergency lighting system is independent of the power supply to the main lighting system. The emergency lighting system must:
  (1) Illuminate each passenger exit marking and locating sign;
  (2) Provide enough general lighting in the passenger cabin so that the average illumination when measured at 40-inch intervals at seat armrest height, on the centerline of the main passenger aisle, is at least 0.05 foot-candles; and
  (3) For aircraft types over 5700 kg MGTW and certificated after January 1,1958, include floor proximity emergency escape path marking which meets the requirements of Part 25, or equivalent.

(d) Emergency light operation: Except for lights forming part of emergency lighting subsystems provided in compliance with Part 25, or equivalent, (as prescribed in paragraph (h) of this section) that serve no more than one assist means, are independent of the aircraft's main emergency lighting systems, and are automatically activated when the assist means is deployed, each light required by paragraphs (c) and (h) of this section must comply with the following:
  (1) Each light must be operable manually, and must operate automatically from the independent lighting system:
    (i) In a crash landing; or
    (ii) Whenever the aircraft's normal electric power to the light is interrupted.
  (2) Each light must:
    (i) Be operable manually both from the cockpit crew station and from a point in the passenger compartment that is readily accessible to a normal cabin crew seat;
    (ii) Have a means to prevent inadvertent operation of the manual controls; and
    (iii) When armed or turned on at either station, remain lighted or become lighted upon interruption of the aircraft's normal electric power. Each light must be armed or

turned on during taxiing, takeoff, and landing. In showing compliance with this paragraph a transverse vertical separation of the fuselage need not be considered.

(3) Each light must provide the required level of illumination for at least 10 minutes at the critical ambient conditions after emergency landing; and

(4) Each light must have a cockpit control device that has an ”on”, ”off”, and ”armed” position.

(e) Emergency exit operating handles

(1) For passenger-carrying air carrier aircraft for which the application for the type certificate was filed prior to May 1,1972, the location of each passenger emergency exit operating handle, and instructions for opening the exit, must be shown by a marking on or near the exit that is readable from a distance of 30 inches. In addition, for each Type I and Type II emergency exit with a locking mechanism released by rotary motion of the handle, the instructions for opening must be shown by:

(i) A red arrow with a shaft at least three-fourths inch wide and a head twice the width of the shaft, extending along at least 70^0 of arc at a radius approximately equal to three-fourths of the handle length; and

(ii) The word ”open” in red letters 1 inch high placed horizontally near the head of the arrow.

(2) For a passenger-carrying air carrier aircraft for which the application for the type certificate was filed on or after May 1,1972, the location of each passenger emergency exit operating handle and instructions for opening the exit must be shown in accordance with the requirements under which the aircraft was type certificated. On these aircraft, no operating handle or operating handle cover may continue to be used if its luminescence (brightness) decreases to below 100 micro lamberts.

(f) Emergency exit access. Access to emergency exists must be provided as follows for each passenger-carrying aircraft:

(1) Each passage way between individual passenger areas, or leading to a Type I or Type II emergency exit, must be unobstructed and at least 20 inches wide;

(2) There must be enough space next to each Type I or Type II emergency exit to allow a crewmember to assist in the evacuation of passengers without reducing the unobstructed width of the passageway below that required in paragraph (f) (1) of this section;

(3) There must be access from the main aisle to each Type III and Type IV exit. The access from the aisle to these exits must not be obstructed by: seats, berths or other protrusions, in a manner that would reduce the effectiveness of the exit. In addition, for an air carrier aircraft, the access must meet the emergency exit access requirements under which the aircraft was type certificated.

(4) If it is necessary to pass through a passageway between passenger compartments to reach any required emergency exit from any seat in the passenger cabin; the passageway must not be obstructed. However, curtains may be used if they allow free entry through the passageway;

(5) No door may be installed in any partition between passenger compartments; and

(6) If it is necessary to pass through a doorway separating the passenger cabin from other areas to reach required emergency exit from any passenger seat, the door must have a means to latch it in the open position, and the door must be latched open during each takeoff and landing. The latching means must be able to withstand the loads imposed upon it when the door is subjected to the ultimate inertia forces, relative to the surrounding structure, listed in Part 25, or equivalent.

(g) Exterior exit markings: Each passenger emergency exit and the means of opening that exit from the outside must be marked on the outside of the aircraft. There must be a 2-inch colored band outlining each passenger emergency exit on the side of the fuselage. Each outside marking, including the band, must be readily distinguishable from the surrounding fuselage area by contrast in color. The markings must comply with the following:

(1) If the reflectance of the darker color is 15 percent or less, the reflectance of the lighter color must be at least 45 percent;

(2) If the reflectance of the darker color is greater than 15 percent, at least a 30 percent difference between its reflectance and the reflectance of the lighter color must be provided; and

(3) Exits that are not in the side of the fuselage must have the external means of opening and applicable instructions marked conspicuously in red or, if red is inconspicuous

against the background color, in bright chrome yellow and, when the opening means for such an exit is located on only one side of the fuselage, a conspicuous marking to that effect must be provided on the other side. "Reflectance" is the ratio of the luminous flux reflected by a body to the luminous flux it receives.

(h) Exterior emergency lighting and escape route. Each passenger-carrying aircraft must be equipped with exterior lighting that meets the requirements under which the aircraft was type certificated.

(i) Floor level exits: Each floor level door or exit in the side of the fuselage (other than those exits leading into cargo or baggage compartments that are not accessible for the passenger cabin) that is 44 or more inches high and 20 or more inches wide, but not wider than 46 inches, each passenger ventral exit and each tail cone exit, must meet the requirements of this section and Part 25, or equivalent, for floor level emergency exits. However the ECAA may grant a deviation from this paragraph if they find that circumstances make full compliance impractical and that an acceptable level of safety has been achieved.

(j) Additional emergency exits. Approved emergency exits in the passenger compartments that are in excess of the minimum number of required emergency exits must meet all of the applicable provisions of this section except paragraphs (f) (1), (2) and (3) of this section and must be readily accessible.

(k) On each large passenger-carrying turbojet-powered aircraft, each ventral exit and tail-cone exit must be:
   (1) Designed and constructed so that it cannot be opened during flight;
   (2) Marked with a placard readable from a distance of 30 inches and installed at a conspicuous location near the means of opening the exit, stating that the exit has been designed and constructed so that it cannot be opened during flight; and
   (3) Portable lights. No person may operate a passenger-carrying air carrier aircraft unless it is equipped with flashlight stowage provisions accessible from each cabin crew seat.

121.311 Seats, safety belts, and shoulder harnesses

(a) No person may operate an aircraft unless there are available during the takeoff, en route flight, and landing:
   (1) An approved seat or berth for each person on board the aircraft who has reached his second birthday;
   (2) An approved safety belt for separate use by each person on board the aircraft who has reached his second birthday, except that two persons occupying a berth may share one approved safety belt and two persons occupying a multiple lounge or divan seat may share one approved safety belt during en route flight only; and
   (3) Provided the child has not reached the second birthday, and is accompanied by a parent, guardian, or attendant designated by the child's parent or guardian to attend to the safety of the child during the flight, an approved child restraint system bearing either a label showing approval of a foreign government or a label showing that the seat was manufactured under the standards of the United Nations for aircraft or automobile may be used, providing the certificate holder complies with the following requirements:
      (i) The restraint system must be properly secured to an approved forward-facing seat or berth; and
      (ii) The child must be properly secured in the restraint system and must not exceed the specified weight limit for the restraint system.

(b) No certificate holder may prohibit a child, if requested by the child's parent, guardian, or designated attendant from occupying a child restraint system furnished by the child's parent, guardian, or designated attendant, provided the child holds a ticket for an approved seat or berth, or such seat or berth is otherwise made available and the requirements contained in paragraph (a) of this section are met. This section does not prohibit the certificate holder from providing child restraint systems or, consistent with safe operating practices, determining the most appropriate passenger seat location for the child restraint system.

(c) During the takeoff and landing of an aircraft, each person on board shall occupy an approved seat or berth with a separate safety belt properly secured about him. However, a person who has not reached his second birthday may be held by an adult who is occupying a seat or berth. A safety belt provided for the occupant of a seat may not be used during takeoff and landing by more than one person who has reached his second birthday.

(d) Each side ward facing seat must comply with applicable requirements of its type certificate.

(e) Except as provided in subparagraph (1) and (2) of this paragraph, no certificate holder may take off or land an aircraft unless each passenger seat back is in the upright position. Each passenger shall comply with instructions given by a crewmember in compliance with this paragraph.
  (1) This paragraph does not apply to seat backs placed in other than the upright position in compliance with 121.310(f) (3).
  (2) This paragraph does not apply to seats or when persons who are unable to sit erect for a medical reason are carried in accordance with procedures in the certificate holder's manual if the seat back does not obstruct any passenger's access to the aisle or to any emergency exit.

(f) No person may operate an aircraft, unless it is equipped at each flight deck station with a combined safety belt and shoulder harness that meets the applicable requirements specified in Part 25, or equivalent, except that safety belt and shoulder harness restraint systems may be designed to the inertial load factors established under the certification basis of the aircraft.

(I) Each cabin crew must have a seat for takeoff and landing in the passenger compartment that meets the requirements of Part 25, or equivalent except that:
  (1) Combined safety belt and shoulder harnesses that were approved and installed before March, 6, 1980, may continue to be used; and
  (2) Safety belt and shoulder harness restraint systems may be designed to the inertia load factors established under the certification basis of the aircraft.
  (3) The requirements of Part 25, or equivalent, do not apply to passenger seats occupied by cabin crews not required by 121.391.

(II) Each occupant of a seat equipped with a combined safety belt and shoulder harness must have the combined safety belt and shoulder harness properly secured about that occupant during takeoff and landing and be able to properly perform assigned duties.

(III) At each unoccupied seat, the safety belt and shoulder harness, if installed, must be secured so as not to interfere with crewmembers in the performance of their duties or with the rapid egress of occupants in an emergency.

121.312 Materials for compartment interiors

(a) Except for those materials covered by paragraph (c) of this section, all materials in each compartment used by the crewmembers or passengers must meet the requirements of Part 25, or equivalent.

(b) The ECAA may authorize deviation from the requirements of paragraph (a) of this section for specific components of the cabin interior which do not meet applicable flammability and smoke emission requirements, if the determination is made that special circumstances exist that make compliance impractical. A request for such grant of deviation must include a thorough and accurate analysis of each component subject to Part 25, or equivalent, the steps being taken to achieve compliance, and, for the few components for which timely compliance will not be achieved, credible reasons for such noncompliance.

(c) For aircraft type certificated after January 1, 1958, seat cushions, except those on cockpit crewmember seats, in any compartment occupied by crew or passengers must comply with the requirements pertaining to fire protection of seat cushions in Part 25, or equivalent.

121.313 Miscellaneous equipment

No person may conduct operation unless the following equipment is installed in the aircraft:

(a) If protective fuses are installed on an aircraft, the number of spare fuses approved for that aircraft and appropriately described in the certificate holder's manual;

(b) A windshield wiper or equivalent for each pilot station, if so type equipped;

(c) A power supply and distribution system that meets the requirements of Part 25, or equivalent, or original type certification that is able to produce and distribute the load for the required instruments and equipment, with use of an external power supply if any one power source or component of the power distribution system fails. The use of common elements in the system may be approved if the ECAA finds that they are designed to be reasonably protected against malfunctioning. Engine driven sources of energy, when used, must be on separate engines;

(d) A means for indicating the adequacy of the power being supplied to required flight instruments;
(e) Two independent static pressure systems, if so type equipped, vented to the outside atmospheric pressure so that they will be least affected by air flow variation or moisture or other foreign matter, and installed so as to be airtight except for the vent. When a means is provided for transferring an instrument from its primary operating system to an alternate system, the means must include a positive positioning control and must be marked to indicate clearly which system is being used;
(f) If so typed, a door between the cabin and the cockpit that has a means of locking from the cockpit only, in order to prevent passengers from opening the door without the pilot's permission;
(g) A key for each door that separates a passenger compartment from another compartment that has emergency exit provisions. The key must be readily available for each crewmember;
(h) A placard on each door that is the means of access to a required passenger emergency exit, to indicate that it must be open during takeoff and landing; and
(i) A means for the crew, in an emergency to unlock each door that leads to a compartment that is normally accessible to passengers and that can be locked by passengers.
(j) Microphones : All flight crew members required to be on flight deck duty shall communicate through boom or throat microphones.
(k) Vibration health monitoring system : A helicopter which has a maximum certificated take-off mass in excess of 3 175 kg or a maximum passenger seating configuration of more than 9 should be equipped with a vibration health monitoring system.

121.314 Cargo and baggage compartments

(a) Each Class C or D compartment, as defined in Part 25, or equivalent, greater than 200 cubic feet in volume in a transport category aircraft type certificated after January 1,1958, must have ceiling and side wall liner panels which are constructed of:
  (1) Glass fiber reinforced resin;
  (2) Materials which meet the test requirements of Part 25, or equivalent; or
  (3) In the case of liner installations approved prior to March 20, 1989, aluminum.
(b) For compliance with this section, the term "liner" includes any design feature, such as a joint or fastener, which would affect the capability of the liner to safely contain a fire.

121.315 Cockpit check procedure

(a) Each certificate holder shall provide an approved cockpit check procedure for each type of aircraft.
(b) The approved procedures must include each item necessary for cockpit crewmembers to check for safety before starting engines, taking off, or landing, and in engine and systems emergencies. The procedures must be designed so that a cockpit crewmember will not need to rely upon his memory for items to be checked.
(c) The approved procedures must be readily usable in the cockpit of each aircraft and the cockpit crew shall follow them when operating the aircraft.

121.316 Fuel tanks

Each turbine powered transport category aircraft must meet the requirements of Part 25, or equivalent.

121.317 Passenger information requirements and smoking prohibitions

(a) No person may operate an aircraft type certificated with passenger information signs unless they meet the requirements of Part 25, or equivalent. The signs must be constructed so that the crewmembers can turn them on and off.
(b) The seat belt sign shall be turned on for each landing and takeoff, and at any other time considered necessary by the pilot in command.
(c) No person may operate an aircraft on a flight segment on which smoking is prohibited unless the "No Smoking" passenger information signs are lighted during the entire flight segment, or one or more "No Smoking" placards meeting the requirements of Part 25, or equivalent, are posted during the entire flight segment. If both the lighted signs and the placards are used, the signs must remain lighted during the entire flight segment.
(d) Smoking is prohibited on scheduled flight segments:
  (1) Between any two points within Egypt; and

(2) Scheduled flights prescribed by the ECAA.

(e) No person may operate a passenger carrying aircraft unless there is affixed to each forward bulkhead and each passenger seat back a sign or placard that reads ”Fasten Seat Belt While Seated”. These signs or placards need not meet the requirements of paragraph (a) of this section.

(f) Each passenger shall fasten that passenger's seat belt and keep it fastened while the seat belt sign is lighted.

(g) No person may smoke while a ”No Smoking” sign is lighted or if ”No Smoking” placards are posted, except that the pilot in command may authorize smoking on the flight deck except during landings and takeoffs.

(h) No person may smoke in any aircraft lavatory.

(i) No person may tamper with, disable, or destroy and smoke detector installed in any aircraft lavatory.

(j) On flight segments other than those described in paragraph (c) of this section, the ”No Smoking” sign must be turned on for each takeoff and landing and at any other time considered necessary by the pilot in command.

121.318 Public address system

No person may operate an aircraft with a MGTW over 12,500 pounds (5700Kg) unless it is equipped with a public address system which:

(a) Is capable of operation; independent of the crewmember system required by 121.319, except for handsets, headsets, microphones, selector switches, and signaling devices;

(b) [Reserved];

(c) Is accessible for immediate use from each of two cockpit crewmember stations in the pilot compartment;

(d) For each required floor-level passenger emergency exit which has an adjacent cabin crew seat, has a microphone which is readily accessible to the seated cabin crew, except that one microphone may serve more than one exit, provided the proximity of the exits allows unassisted verbal communication between seated cabin crews;

(e) Is capable of operation within 10 seconds by a cabin crew at each of those stations in the passenger compartment from which its use is accessible;

(f) Is audible at all passenger seats, lavatories, and cabin crew seats and work stations; and

(g) For transport category aircraft manufactured on or after November 27, 1990, meets the requirements of Part 25, or equivalent.

121.319 Crewmember interphone system

(a) No person may operate an aircraft with a MGTW over 12,500 pounds (5700Kg) unless the aircraft is equipped with a crewmember interphone system that:
  (1) [Reserved];
  (2) Is capable of operation independent of the public address system required by 121.318 (a) except for handsets, headsets, microphones, selector switches, and signaling devices; and
  (3) Meets the requirements of paragraph (b) of this section.

(b) The crewmember interphone system required by paragraph (a) of this section must be approved, and meet the following requirements:
  (1) It must provide a means of two-way communication between the pilot compartment and:
    (i) Each passenger compartment; and
    Each galley located on other than the main passenger deck level. (ii)
  (2) It must be accessible for immediate use from each of two cockpit crewmember stations in the pilot compartment;
  (3) It must be accessible for use from at least one normal cabin crew station in each passenger compartment;
  (4) It must be capable of operation within 10 seconds by a cabin crew at those stations in each passenger compartment from which its use is accessible; and
  (5) For large turbojet- powered aircraft:
    (i) It must be accessible for use at enough cabin crew stations so that all floor-level emergency exits (or entryways to those exits in the case of exits located within galleys) in each passenger compartment are observable from one or more of those stations so equipped;

(ii) It must have an alerting system incorporating aural or visual signals for use by cockpit crewmembers to alert cabin crews and for use by cabin crews to alert cockpit crewmembers;
(iii) The alerting system required by paragraph (b) (5) (ii) of this section must have a means for the recipient of a call to determine whether it is a normal call or an emergency call; and
(iv) When the aircraft is on the ground, it must provide a means of two-way communication between ground personnel and either of at least two cockpit crewmembers in the pilot compartment. The interphone system station for use by ground personnel must be so located that personnel using the system may avoid visible detection from within the aircraft.

121.321 [Reserved]

121.323 Instruments and equipment for operations at night

No person may operate an aircraft at night unless it is equipped with the following instruments and equipment in addition to those required by 121.305:
(a) Position lights;
(b) An anti-collision light;
(c) Two landing lights;
(d) Instrument lights providing enough light to make each required instrument, switch, or similar instrument, easily readable and installed so that the direct rays are shielded from the cockpit crewmembers' eyes and that no objectionable reflections are visible to them. There must be a means of controlling the intensity of illumination unless it is shown that non dimming instrument lights are satisfactory;
(e) An airspeed-indicating system with heated pitot tube or equivalent means for preventing malfunctioning due to icing; and
(f) Two sensitive altimeters.

121.325 Instruments and equipment for operations under IFR or over the-top

No person may operate an aircraft under IFR conditions unless it is equipped with the following instruments and equipment, in addition to those required by 121.305 through 121.319:
(a) An airspeed-indicating system with heated pilot tube or equivalent means for preventing malfunctioning due to icing;
(b) Two sensitive altimeters; and
(c) Instrument lights providing enough light to make each required instrument, switch, or similar instrument, easily readable and so installed that the direct rays are shielded from the flight crewmembers' eyes and that no objectionable reflections are visible to them, and a means of controlling the intensity of illumination unless it is shown that non dimming instrument lights are satisfactory.
(d) For single –engine turbine – powered aero planes shall have an engine trend monitoring system , and those aero planes for which the individual certificate of airworthiness is first issued on or after 1 January 2005 shall have an automatic trend monitoring system.

121.326 Instruments and equipment for operations by a single pilot under the instrument flight rules (IFR) or at night

No person may operate an aircraft by a single pilot under the IFR or at night unless it is equipped with the following instruments and equipment, in addition to those required by 121.385:
(a) a serviceable autopilot that has at least altitude hold and heading select modes;
(b) a headset with a boom microphone or equivalent; and
(c) means of displaying charts that enables them to be readable in all ambient light conditions.

121.327 Equipment required for operations above 15000m (49000 ft)

All aircraft intended to be operated above 15000m (49000 ft) must have equipment that is capable of measuring and indicating continuously the dose rate of total cosmic radiation being

received and the cumulative dose on each flight. The display unit shall be readily visible to the cockpit crew.

121.328 TURBINE AEROPLANE - RUNWAY OVERRUN AWARENESS AND ALERTING SYSTEM (ROAAS)

All turbine-engine aeroplanes of a maximum certificated take-off mass in excess of 5 700 kg, for which the individual certificate of airworthiness is first issued on or after 1 January 2026, shall be equipped with a runway overrun awareness and alerting system (ROAAS).

121.329 Oxygen supply

First-aid oxygen

(a) An operator shall not operate a pressurized airplane at altitudes above 25 000 ft, when a cabin crew member is required to be carried, unless it is equipped with a supply of undiluted oxygen for passengers who, for physiological reasons, might require oxygen following a cabin depressurization. The amount of oxygen shall be calculated using an average flow rate of at least three liters standard temperature pressure dry (STPD)/minute/person and shall be sufficient for the remainder of the flight after cabin depressurization when the cabin altitude exceeds 8 000 ft but does not exceed 15 000 ft, for at least 2 % of the passengers carried, but in no case for less than one person. There shall be a sufficient number of dispensing units, but in no case less than two, with a means for cabin crew to use the supply. The dispensing units may be of a portable type.

(b) The amount of first-aid oxygen required for a particular operation shall be determined on the basis of cabin pressure altitudes and flight duration, consistent with the operating procedures established for each operation and route.

(c) The oxygen equipment provided shall be capable of generating a mass flow to each user of at least four liters per minute, STPD. Means may be provided to decrease the flow to not less than two liters per minute, STPD, at any altitude.

Supplemental oxygen — pressurized aeroplanes

(See Appendix Q)

(a) General

(1) An operator shall not operate a pressurized airplane at pressure altitudes above 10 000 ft unless supplemental oxygen equipment, capable of storing and dispensing the oxygen supplies required by this paragraph, is provided.

(2) The amount of supplemental oxygen required shall be determined on the basis of cabin pressure altitude, flight duration and the assumption that a cabin pressurization failure will occur at the altitude or point of flight that is most critical from the standpoint of oxygen need, and that, after the failure, the aeroplane will descend in accordance with emergency procedures specified in the Aeroplane Flight Manual to a safe altitude for the route to be flown that will allow continued safe flight and landing.

(3) Following a cabin pressurization failure, the cabin pressure altitude shall be considered the same as the aeroplane pressure altitude, unless it is demonstrated to the Authority that no probable failure of the cabin or pressurization system will result in a cabin pressure altitude equal to the aeroplane pressure altitude. Under these circumstances, the demonstrated maximum cabin pressure altitude may be used as a basis for determination of oxygen supply.

(b) Oxygen equipment and supply requirements

(1) Flight crew members

(I) Each member of the flight crew on flight deck duty shall be supplied with supplemental oxygen in accordance with Appendix 1. If all occupants of flight deck seats are supplied from the flight crew source of oxygen supply then they shall be

considered as flight crew members on flight deck duty for the purpose of oxygen supply. Flight deck seat occupants, not supplied by the flight crew source, are to be considered as passengers for the purpose of oxygen supply.

(II) Flight crew members, not covered by subparagraph (b)1(i) above, are to be considered as passengers for the purpose of oxygen supply.

(III) Oxygen masks shall be located so as to be within the immediate reach of flight crew members whilst at their assigned duty station.

(IV) Oxygen masks for use by flight crew members in pressurized aeroplanes operating above 25 000 ft shall be a quick donning type of mask.

(2) Cabin crew members, additional crew members and passengers

(I) Cabin crew members and passengers shall be supplied with supplemental oxygen in accordance with Appendix 1, except when subparagraph (v) below applies. Cabin crew members carried in addition to the minimum number of cabin crew members required, and additional crew members, shall be considered as passengers for the purpose of oxygen supply.

(II) Aeroplanes intended to be operated at pressure altitudes above 25 000 ft shall be provided with sufficient spare outlets and masks and/or sufficient portable oxygen units with masks for use by all required cabin crew members. The spare outlets and/or portable oxygen units are to be distributed evenly throughout the cabin to ensure immediate availability of oxygen to each required cabin crew member regardless of his/her location at the time of cabin pressurization failure.

(III) Aeroplanes intended to be operated at pressure altitudes above 25 000 ft shall be provided with an oxygen dispensing unit connected to oxygen supply terminals immediately available to each occupant, wherever seated. The total number of dispensing units and outlets shall exceed the number of seats by at least 10 %. The extra units are to be evenly distributed throughout the cabin.

(IV) Aeroplanes intended to be operated at pressure altitudes above 25 000 ft or which, if operated at or below 25 000 ft, cannot descend safely within four minutes to 13 000 ft, and for which the individual certificate of airworthiness was first issued on or after 9 November 1998, shall be provided with automatically deployable oxygen equipment immediately available to each occupant, wherever seated. The total number of dispensing units and outlets shall exceed the number of seats by at least 10 %. The extra units are to be evenly distributed throughout the cabin.

(V) The oxygen supply requirements, as specified in Appendix Q, for aeroplanes not certificated to fly at altitudes above 25 000 ft, may be reduced to the entire flight time between 10 000 ft and 13 000 ft cabin pressure altitudes for all required cabin crew members and for at least 10 % of the passengers if, at all points along the route to be flown, the aeroplane is able to descend safely within four minutes to a cabin pressure altitude of 13 000 ft.

Supplemental oxygen — Non-pressurized aeroplanes

(See Appendix Q)

(a) General

(1) An operator shall not operate a non-pressurized aeroplane at altitudes above 10 000 ft unless supplemental oxygen equipment, capable of storing and dispensing the oxygen supplies required, is provided.

(2) The amount of supplemental oxygen for sustenance required for a particular operation shall be determined on the basis of flight altitudes and flight duration, consistent with the operating procedures established for each operation in the Operations Manual and with the routes to be flown, and with the emergency procedures specified in the Operations Manual.

(3) An aeroplane intended to be operated at pressure altitudes above 10 000 ft shall be provided with equipment capable of storing and dispensing the oxygen supplies required.

(b) Oxygen supply requirements

(1) Flight crew members. Each member of the flight crew on flight deck duty shall be supplied with supplemental oxygen in accordance with Appendix 1. If all occupants of flight deck seats are supplied from the flight crew source of oxygen supply then they shall be considered as flight crew members on flight deck duty for the purpose of oxygen supply.

(2) Cabin crew members, additional crew members and passengers. Cabin crew members and passengers shall be supplied with oxygen in accordance with Appendix 1. Cabin crew members carried in addition to the minimum number of cabin crew members required, and additional crew members, shall be considered as passengers for the purpose of oxygen supply.

121.333 Use of oxygen

(a) All cockpit crew members, when engaged in performing duties essential to the safe operation of an aircraft in flight, shall use breathing oxygen continuously whenever the circumstances prevail for which its supply has been required in 121.329(a) or 121.329(b).

(b) All cockpit crew members of pressurized aircraft operating above an altitude greater than Flight Level 250 shall have available at the flight duty station a quick-donning type of oxygen mask which will readily supply oxygen upon demand and meets all of the requirements of 91.211(c).

(c) Before takeoff each crewmember shall personally preflight the oxygen mask intended for use of that crewmember. This preflight must ensure the system is properly functioning and the supply and pressure are adequate.

(d) Use of portable oxygen equipment by cabin crew. Each cabin crew shall, in aircraft operating above an altitude greater Flight Level 250, carry portable oxygen equipment with at least a 15 minute supply of oxygen unless it is demonstrated that enough portable oxygen units with masks or spare outlets and masks are distributed throughout the cabin to ensure immediate availability of oxygen to each cabin crew, regardless of their location at the time of a loss of pressurization.

(e) Before flight is conducted above Flight Level 250, a crewmember shall instruct the passengers on the necessity of using oxygen in the event of cabin depressurization and shall point out to the passengers the location and demonstrate the use of the oxygen dispensing equipment.

121.335 Equipment standards

(a) Reciprocating engine powered aircraft. The oxygen apparatus, the minimum rates of oxygen flow, and the supply of oxygen necessary to comply with 121:329 and 121.333 must meet the standards established in Part 25, or equivalent, except that if the certificate holder shows full compliance with those standards to be impracticable, the ECAA may authorize any change in those standards that he finds will provide an equivalent level of safety.

(b) Turbine engine powered aircraft. The oxygen apparatus, the minimum rate of oxygen flow, and the supply of oxygen necessary to comply with 121.329 and 121.333 must meet the standards established Part 25, or equivalent, except that if the certificate holder shows full compliance with those standards to be impracticable, the ECAA may authorize any changes in those standards that he finds will provide an equivalent level of safety.

121.336 Pressurization warning equipment

All aircraft that operate at or above FL250 must be equipped with a warning system that will provide positive warning to the cockpit crew in the event of the loss of aircraft pressurization.

121.337 Protective breathing equipment

(a) The air carrier certificate holder shall furnish approved Protective Breathing Equipment (PBE) meeting the equipment breathing gas requirements.

(b) Pressurized cabin aircraft. Except as provided in paragraph (c) of this section, no person may operate a transport category aircraft unless protective breathing equipment meeting the requirements of this section is provided as follows:

(1) General. The equipment must protect the crewmember from the effects of smoke, carbon dioxide or other harmful gases or an oxygen deficient environment caused by

other than an aircraft depressurization while on flight deck duty and must protect crewmembers from the above effects while combating fires on board the aircraft;

(2) The equipment must be inspected regularly in accordance with inspection guidelines and the inspection periods established by the equipment manufacturer to ensure its condition for continued serviceability and immediate readiness to perform its intended emergency purposes. The inspection periods may be changed upon demonstration by the certificate holder that the changes would provide an equivalent level of safety;

(3) That part of the equipment protecting the eyes must not impair the wear's vision to the extent that a crewmember's duties cannot be accomplished and must allow corrective glasses to be worn without impairment of vision or loss of the protection required by paragraph (b) (1) of this section;

(4) [Reserved];

(5) [Reserved];

(6) The equipment may also be used to meet the supplemental oxygen requirements of this Part provided it meets the oxygen equipment standards of 121.335 of this Part;

(7) Protective breathing gas duration and supply system equipment requirements are as follows:

(i) The equipment must supply breathing gas for 15 minutes at a pressure altitude of 8.000 feet for the following:

(A) Cockpit crews while performing flight deck duties; and

(B) Crewmembers while combating an in-flight fire.

(ii) The breathing gas system must be free from hazards in itself, in its method of operation, and in its effect upon other components.

(iii) For breathing gas systems other than chemical oxygen generators, there must be a means to allow the crew to readily determine, during flight, the quantity of breathing gas available in each source of supply.

(iv) For each chemical oxygen generator, the supply system equipment must meet the requirements of Part 25, or equivalent.

(8) Protective breathing equipment with a fixed or portable breathing as supply meeting the requirements of this section must be conveniently located on the flight deck and be easily accessible for immediate use by each required cockpit crews at their assigned duty station;

(9) Protective breathing equipment with a portable breathing gas supply meeting the requirements of this section must be easily accessible and conveniently located for immediate use by crewmembers in combating fires as follows:

(i) One for use in each Class A, B, and E cargo compartment (as defined in Part 25, or equivalent, that is accessible to crewmembers in the compartment during flight);

(ii) One PBE is required for each hand fire extinguisher located for use in a galley other than a galley located in a passenger, cargo, or crew compartment;

(iii) One on the flight deck, except that the ECAA may authorize another location for this PBE if special circumstances exist that make compliance impractical and the proposed deviation would provide an equivalent level of safety; and

(iv) In each passenger compartment, one located within 3 feet of each hand fire extinguisher required by 121.309 of this Part, except that the ECAA may authorize a deviation allowing locations of PBE more than 3 feet from required hand fire extinguisher locations if special circumstances exist that make compliance impractical and the proposed deviation provides an equivalent level of safety.

(c) Equipment preflight:

(1) Before each flight, each item of PBE located at a cockpit crewmember duty station must be checked by the cockpit crewmember who will use the equipment to ensure that the equipment is properly stowed and serviceable; and

(2) Each item of PBE located at other than a cockpit crewmember duty station must be checked by a designated crewmember to ensure that each is properly stowed and serviceable, and for other than chemical oxygen generator systems, the breathing gas supply is fully charged. Each certificate holder, in its operations manual, must designate at least one crewmember to perform those checks before he or she takes off in that aircraft for his or her first flight of the day.

(d) [Reserved]

121.338 Emergency locator transmitters

(a) Except as provided in paragraph (e) of this section or when exempted for technical reasons of non-availability of approved kits/spares, no person may operate an Egyptian registered civil aircraft unless there is attached to the aircraft emergency locator transmitter(s) that is (are) in operable conditions according to the following:

(1) For aeroplanes :

(i) Except as provided for in (ii), from 1 July 2008, all aeroplanes authorized to carry more than 19 passengers shall be equipped with at least one automatic ELT or two ELTs of any type.

(ii) All aeroplanes authorized to carry more than 19 passengers for which the individual certificate of airworthiness is first issued after 1 July 2008 shall be equipped with at least two ELTs, one of which shall be automatic.

(iii) Except as provided for in (iv), from 1 July 2008, all aeroplanes authorized to carry 19 passengers or less shall be equipped with at least one ELT of any type.

(iv) All aeroplanes authorized to carry 19 passengers or less for which the individual certificate of airworthiness is first issued after 1 July 2008 shall be equipped with at least one automatic ELT.

Recommendation.— All aeroplanes should carry an automatic ELT.

(2) For helicopters:

From 1 July 2008, all helicopters operating in performance Class 1 and 2 shall be equipped with at least one automatic ELT and, when operating on flights over water, with at least one automatic ELT and one ELT(S) in a raft or life jacket.

(b) Each emergency locator transmitter required by paragraph (a) of this section must be attached to the aircraft in a manner such that the probability of damage to the transmitter in the event of crash impact is minimized. Fixed, portable and deployable automatic type transmitters must be attached to the aircraft as far aft as practicable.

(c) From 1 January 2005, emergency locator transmitters shall operate on 406 MHZ and 121.5 MHZ simultaneously.

(d) ELT equipment carried shall operate in accordance with the relevant provisions of Annex 10, Volume III as amended.

(e) Batteries used in the emergency locator transmitters required by paragraphs (a) of this section must be replaced (or recharged, if the batteries are rechargeable) when:

(1) The transmitter has been in use for more than 1 cumulative hour; or

(2) 50 percent of batteries useful life (or, for rechargeable batteries, 50 percent of their useful life of charge), as established by the transmitter manufacturer has expired. The new expiration date for replacing (or recharging) the battery must be legibly marked on the outside of the transmitter and entered in the aircraft maintenance record. This does not apply to batteries (such as water-activated batteries) that are essentially unaffected during probable storage intervals.

(f) Each emergency locator transmitter required by paragraph (a) of this section must be inspected within 12 calendar months after the last inspection for:

(1)Proper installation;

(2)Battery corrosion;

(3)Operation of the controls and crash sensor; and

(4) The presence of a sufficient signal radiated from its antenna.

(g) All ELTs operating on 406 MHz shall:

(1) Be COSPAS-SARSAT approved according to type approval standard (C-ST-007).

(2) Operate simultaneously on both 406 MHz and 121.5 MHz,

(3) Be of the automatically activated type , and

(4) Be assigned a unique code in accordance with EAC91_14 and the operator must provide the ECAA with the coded identification of the ELT.

(5) Be registered at ECAA according to the manner described by ECAA procedures and the register information regarding ELT will be immediately submitted to Rescue Coordination Center (RCC) Cairo as identified in the Egyptian AIP as amended,

(h) Not withstanding paragraph (a) of this section, a person may:

(1) Ferry a newly acquired airplane from the place where possession of it was taken to a place where the emergency locator transmitter is to be installed; and

(2) Ferry an airplane with an inoperative emergency locator transmitter from a place where repairs or replacements cannot be made to a place where they can be made. No

person other than required crewmembers may be carried aboard an airplane being ferried under this section.

(i) Paragraph (a) of this section does not apply to:
- (1) Aircraft while engaged in training operations conducted entirely within a 50-nautical mile radius of the airport from which such local flight operations began;
- (2) Aircraft while engaged in flight operations incident to design and testing;
- (3) New aircraft while engaged in flight operations incident to their manufacture, preparation, and delivery.
- (4) Aircraft while engaged in flight operations incident to the aerial application of chemicals and other substances for agricultural purposes;
- (5) Aircraft certificated by the ECAA for research and development purposes;
- (6) Aircraft while used for showing compliance with regulations, crew training, exhibition, air racing, or market surveys; and
- (7) Aircraft equipped to carry not more than one person.
- (8) An aircraft during any period for which the transmitter has been temporarily removed for inspection, repair, modification, or replacement according to the following conditions:
  - (i) The aircraft records contain an entry which includes the date of initial removal, the make, model, serial number, and reason for removing the transmitter, and a placard located in view of the pilot to show "ELT not installed"; and
  - (ii) The aircraft may not operate more than 90 days after the ELT is initially removed from the aircraft.

(j) Refer to EAC 91-14 as amended for details of ELT coding protocols and their priorities.

121.339 Emergency equipment for over-water and extended over-water operations

(a) No person may operate an aircraft in extended over-water operations when flying over water and at a distance of more than 93 km (50 NM) away from the shore in the case of landplanes operated in accordance with (d) or (e) below; or when flying en route over water beyond gliding distance from the shore or in the case of all other landplanes or when taking off or landing at an aerodrome where, the ECAA finds that the take-off or approach path is so disposed over water that in the event of a mishap there would be a likelihood of a ditching; unless they have the following minimum equipment on the aircraft:
- (1) Approved life preserver equipment with a survivor locator light for each occupant of the aircraft;
- (2) Flight crewmember's life preserver color must be different than passengers' life preserver color.

(b) In addition to the equipment prescribed in (a), the following equipment shall be installed in all aircraft when used over routes on which the aircraft may be over water and at more than a distance corresponding to 120 minutes at cruising speed or 740 km (400 NM), whichever is the lesser, away from land suitable for making an emergency landing in the case of aircraft operated in accordance with (d) or (e) below, and 30 minutes or 185 km (100 NM), whichever is the lesser, for all other aircraft:
- (1) Approved life rafts with locator lights that provide enough capacity in both buoyancy and seating to accommodate all of the occupants of the aircraft;
- (2) A pyrotechnic signaling device for each life raft;
- (3) On all aeroplanes of a maximum certificated takeoff mass of over 27 000 kg, a securely attached underwater locating device operating at a frequency of 8.8 kHz. This automatically activated underwater locating device shall operate for a minimum of 30 days and shall not be installed in wings or empennage. ;and

(c) The emergency equipment specified in sections (a) and (b)(1&2) of this section must be easily accessible in the event of a ditching with appreciable time required for preparatory procedures. This emergency equipment must be installed and conspicuously marked in an approved location.

(d) En route — one power-unit inoperative. The aircraft shall be able, in the event of the critical power-unit becoming inoperative at any point along the route or planned diversions therefrom, to continue the flight to an aerodrome at which the Standard of (f) below can be met, without flying below the minimum flight altitude at any point.

(e) En route — two power-units inoperative. In the case of The aircraft having three or more power-units, on any part of a route where the location of en-route alternate aerodromes and

the total duration of the flight are such that the probability of a second power-unit becoming inoperative must be allowed for if the general level of safety implied by the Standards of this chapter is to be maintained, The aircraft shall be able, in the event of any two power-units becoming inoperative, to continue the flight to an en-route alternate aerodrome and land.

(f) Landing. The aircraft shall, at the aerodrome of intended landing and at any alternate aerodrome, after clearing all obstacles in the approach path by a safe margin, be able to land, with assurance that it can come to a stop, within the landing distance available. Allowance shall be made for expected variations in the approach and landing techniques, if such allowance has not been made in the scheduling of performance data.

121.340 Emergency flotation means

(a) Except as provided in paragraph (b) of this section, no person may operate a large aircraft in any overwater operation unless it is equipped with life preservers in accordance with 121.339, or with an approved flotation means for each occupant. These devices must be within easy reach of each seated occupant and must be readily removable from the aircraft.

(b) Upon application by the air carrier or commercial operator, the ECAA may approve the operation of an aircraft over water without the life preserves or flotation means required by paragraph (a) of this section, if the air carrier or commercial operator shows that the water over which the aircraft is to be operated is not such size and depth that life preservers or flotation means would be required for the survival of its occupants in the event the flight terminates in that water.

121.341 Equipment for operations in icing conditions

(a) Unless an aircraft is certificated under the transport category airworthiness requirements relating to ice protection, no person may operate an aircraft in icing conditions unless it is equipped with means for the prevention or removal of ice on windshields. wings, empennage, propellers, and other parts of the aircraft where ice formation will adversely affect the safety of the aircraft.

(b) No person may operate an aircraft in icing conditions at night unless means are provided for illuminating or otherwise determining the formation of ice on the parts of the wings that are critical from the standpoint of ice accumulation. Any illuminating that is used must be of a type that will not cause glare or reflection that would handicap crewmembers in the performance of their duties.

121.342 Pitot heat indication systems

(a) Except as provided in paragraph (b) of this section, no person may operate transport category aircraft equipped with a flight instrument pitot heating system unless the aircraft is also equipped with an operable pitot heat indication system that complies with Part 25, or equivalent.

(b) A certificate holder may obtain an extension of paragraph (a) of this section, from the Flight Safety Standards Sector if the certificate holder:

(1) Shows that due to circumstances beyond its control it cannot comply with it for a certain time; and

(2) Submits a schedule for compliance, acceptable to the ECAA, indicating that compliance will be achieved at the earliest practicable date.

121.343 Flight recorders

(a) Notes

(1) Crash protected flight recorders comprise one or more of the following:

— a flight data recorder(FDR) ,
— a cockpit voice recorder (CVR),
— an airborne image recorder (AIR),
— a data link recorder (DLR).

As per Appendix E and Appendix F to ECAR Part 91 image and data link information may be recorded on either the CVR or the FDR.

(2) Lightweight flight recorders comprise one or more of the following:

— an aircraft data recording system (ADRS),
— a cockpit audio recording system (CARS),
— an airborne image recording system (AIRS),

— a data link recording system (DLRS).

As per Appendix E and Appendix F to ECAR Part 91 image and data link information may be recorded on either the CARS or the ADRS.

(3) When image or data link information is required to be recorded on a lightweight flight recorder, it is permissible to record it on either the CARS or the ADRS

(4) The crash-protected flight recorders shall be installed so that they receive electrical power from a bus that provides the maximum reliability for operation of the flight recorders without jeopardizing service to essential or emergency loads.

(5) The lightweight flight recorders shall be connected to a power source having the characteristics which ensure proper and reliable recording in the operational environment

(6) For helicopters, Combination recorders (FDR/CVR) may be used to meet the flight recorder equipage requirements in this part.

(7) Detailed requirements on flight recorders are contained in Appendix E and Appendix F to ECAR Part 91.

(8) Section 121.5 contains requirements for States regarding the use of voice, image and/or data recordings and transcripts.

(9) For aeroplanes for which the application for type certification is submitted to a Contracting State before 1 January 2016, specifications applicable to crash-protected flight recorders may be found in EUROCAE ED-112, ED-56A,ED-55, Minimum Operational Performance Specifications (MOPS), or earlier equivalent documents.

(10) For aeroplanes for which the application for type certification is submitted to a Contracting State on or after 1 January 2016, specifications applicable to crash-protected flight recorders may be found in EUROCAE ED-112A, Minimum Operational Performance Specification (MOPS), or equivalent documents.

(11) Specifications applicable to lightweight flight recorders may be found in EUROCAE ED-155, Minimum Operational Performance Specification (MOPS), or equivalent documents.

(12) For helicopters for which the application for type certification is submitted to a Contracting State before 1 January 2016, specifications applicable to crash-protected flight recorders may be found in EUROCAE ED-112, ED-56A, ED-55, Minimum Operational Performance Specification (MOPS), or earlier equivalent documents

(13) For helicopters for which the application for type certification is submitted to a Contracting State on or after 1 January 2016, specifications applicable to crash-protected flight recorders may be found in EUROCAE ED-112A, Minimum Operational Performance Specification (MOPS), or equivalent documents.

(b) . Flight data recorders and aircraft data recording systems

Note.—Parameters to be recorded :

- for aeroplanes tables E-1 and E-3 of Appendix E to ECAR Part 91.
- for helicopters tables F-1 and F-3 of Appendix F to ECAR Part 91.

1. Applicability

1.1 All turbine-engine aeroplanes of a maximum certificated take-off mass of 5 700 kg or less for which the application for type certification is submitted to a Contracting State on or after 1 January 2016 shall be equipped with:

(a) an FDR which shall record at least the first 16 parameters listed in table E-1 of Appendix E to ECAR Part 91; or

(b) A Class C AIR or AIRS capable of recording flight path and speed parameters displayed to the pilot(s), as defined in 2.2.3 of Appendix E to ECAR Part 91; or

(c) an ADRS which shall record at least the first 7 parameters listed in table E-3 of Appendix E to ECAR part 91.

Note 1— "The application for type certification is submitted to a Contracting State" refers to the date of application of the original "Type Certificate" for the aeroplane type, not the date of certification of particular aeroplane variants or derivative models.

Note 2— AIR or AIRS classification is defined in Appendix E to ECAR Part 91.

1.2 **Recommendation**. — All turbine-engine aeroplanes of a maximum certificated take-off mass of 5 700 kg or less for which the individual certificate of airworthiness is first issued on or after 1 January 2016 should be equipped with:

(a) an FDR which should record at least the first 16 parameters listed in table E-1 of Appendix E to ECAR Part 91 or;

(b) a Class C AIR or AIRS capable of recording flight path and speed parameters displayed to the pilot(s) as defined in 2.2.3 of Appendix E to ECAR Part 91 ; or

(c) an ADRS which should record at least the first 7 parameters listed in table E-3 of Appendix E to ECAR Part 91.

(d) If further ADRS recording capacity is available, the recording of any parameters from 8 onwards defined in ECAR 91 Appendix E Table E-3 shall be considered.

1.3 All aeroplanes of a maximum certificated take-off mass of over 5 700 kg, up to and including 27 000 kg, for which the individual certificate of airworthiness is first issued on or after 1 January 1989, shall be equipped with an FDR which shall record at least the first 16 parameters listed in table E-1 of Appendix E to ECAR Part 91.

1.4 All aeroplanes of a maximum certificated take-off mass of over 27 000 kg for which the individual certificate of airworthiness is first issued on or after 1 January 1989 shall be equipped with an FDR which shall record at least the first 32 parameters listed in table E-1 of Appendix E to ECAR Part 91.

1.5 **Recommendation**. — All multi-engine turbine-engine aeroplanes of a maximum certificated take-off mass of 5 700 kg or less for which the individual certificate of airworthiness is first issued on or after 1 January 1990 should be equipped with an FDR which should record at least the first 16 parameters listed in table E-1 of Appendix E to ECAR Part 91.

1.6 All turbine-engine aeroplanes, for which the individual certificate of airworthiness was first issued before 1 January 1989, with a maximum certificated take-off mass of over 5 700 kg, except those in 1.8, shall be equipped with an FDR which shall record at least the first 5 parameters listed in table E-1 of Appendix E to ECAR Part 91.

1.7 **Recommendation**. — All turbine-engine aeroplanes, for which the individual certificate of airworthiness was first issued on or after 1 January 1987 but before 1 January 1989, with a maximum certificated take-off mass of over 5 700 kg, except those in 1.8 should be equipped with an FDR which should record at least the first 9 parameters listed in table E-1 of Appendix E to ECAR Part 91

1.8 All turbine-engine aeroplanes, for which the individual certificate of airworthiness was first issued on or after 1 January 1987 but before 1 January 1989, with a maximum certificated take-off mass of over 27 000 kg that are of types of which the prototype was certificated by the appropriate national authority after 30 September 1969 shall be equipped with an FDR which shall record at least the first 16 parameters listed in table E-1 of Appendix E to ECAR Part 91.

1.9 **Recommendation**.— All turbine-engine aeroplanes, for which the individual certificate of airworthiness was first issued before 1 January 1987, with a maximum certificated take-off mass of over 27 000 kg that are of types of which the prototype was certificated by the appropriate national authority after 30 September 1969 should be equipped with an FDR which should record, in addition to the first 5 parameters listed in table E-1 of Appendix E to ECAR Part 91, such additional parameters as are necessary to meet the objectives of determining:

(a) The attitude of the aeroplane in achieving its flight path; and

(b) The basic forces acting upon the aeroplane resulting in the achieved flight path and the origin of such basic forces.

1.10 All aeroplanes of a maximum certificated take-off mass of over 5 700 kg for which the individual certificate of airworthiness is first issued after 1 January 2005 shall be equipped with an FDR which shall record at least the first 78 parameters listed in table E-1 of Appendix E to ECAR Part 91.

1.11 All aeroplanes of a maximum certificated take-off mass of over 5 700 kg for which the application for type certification is submitted to a Contracting State on or after 1

January 2023 shall be equipped with an FDR capable of recording at least the 82 parameters listed in table E-1 of Appendix E to ECAR Part 91.

1.12 **Recommendation**.— All aeroplanes of a maximum certificated take-off mass of over 5 700 kg for which the individual certificate of airworthiness is first issued on or after 1 January 2023 shall be equipped with an FDR capable of recording at least the 82 parameters listed in table E-1 of Appendix E to ECAR Part 91.

1.13 All helicopters of a maximum certificated take-off mass of over 3 175 kg for which the individual certificate of airworthiness is first issued on or after 1 January 2016 shall be equipped with an FDR which shall record at least the first 48 parameters listed in table F-1 of Appendix F to ECAR Part 91.

1.14 All helicopters of a maximum certificated take-off mass of over 7 000 kg, or having a passenger seating configuration of more than nineteen, for which the individual certificate of airworthiness is first issued on or after 1 January 1989 shall be equipped with an FDR which shall record at least the first 30 parameters listed in table F-1 of Appendix F to ECAR Part 91.

1.15 **Recommendation**.— All helicopters of a maximum certificated take-off mass of over 3 175 kg, up to and including 7 000 kg, for which the individual certificate of airworthiness is first issued on or after 1 January 1989, should be equipped with an FDR which should record at least the first 15 parameters listed in table F-1 of Appendix F to ECAR Part 91.

1.16 All turbine-engine helicopters of a maximum certificated take-off mass of over 2 250 kg, up to and including 3 175 kg for which the application for type certification was submitted to a Contracting State on or after 1 January 2018 shall be equipped with:

(a) an FDR which shall record at least the first 48 parameters listed in table F-1 of Appendix F to ECAR Part 91.; or

(b) A Class C AIR capable of recording flight path and speed parameters displayed to the pilot(s), as defined in Appendix F to ECAR Part 91,table F-3; or

(c) An ADRS which shall record the first 7 parameters listed in table F-3 of Appendix F to ECAR Part 91.

Note.— The "application for type certification was submitted to a Contracting State" refers to the date of application of the original "Type Certificate" for the helicopter type, not the date of certification of particular helicopter variants or derivative models.

1.17 **Recommendation**.— All helicopters of a maximum certificated take-off mass of 3 175 kg or less for which the individual certificate of airworthiness is first issued on or after 1 January 2018 should be equipped with:

(a) an FDR which should record at least the first 48 parameters listed in table F-1 of Appendix F to ECAR Part 91; or

(b) A Class C AIR capable of recording flight path and speed parameters displayed to the pilot(s),as defined in Appendix F to ECAR Part 91, table F-3; or

(c) an ADRS which shall record the first 7 parameters listed in Table F-3 of Appendix F to ECAR Part 91.

1.18 All helicopters of a maximum certificated take-off mass of over 3 175 kg for which the application for type certificate is submitted to a Contracting State on or after 1 January 2023 shall be equipped with an FDR capable of recording at least the first 53 parameters listed in table F-1 of Appendix F to ECAR part 91.

1.19 **Recommendation**.— All helicopters of a maximum certificated take-off mass of over 3 175 kg for which the individual certificate of airworthiness is first issued on or after 1 January 2023 should be equipped with an FDR capable of recording at least the first 53 parameters listed in table F-1 of Appendix F to ECAR Part 91.

2. Recording technology

FDRs, ADRS, AIRs or AIRS shall not use engraving metal foil, frequency modulation (FM), photographic film or magnetic tape.

3. Duration

(a) For aeroplanes: All FDRs shall retain the information recorded during at least the last 25 hours of their operation, with the exception of those installed on aeroplanes referenced in

1.5 for which the FDR shall retain the information recorded during at least the last 30 minutes of its operation, and, in addition, sufficient information from the preceding take-off for calibration purposes.

(b) For helicopters: All FDRs shall retain the information recorded during at least the last 10 hours of their operation.

(c) Cockpit voice recorders and cockpit audio recording system

1. Applicability

1.1 All turbine-engine aero planes of a maximum certificated take-off mass of over 2 250 kg, up to and including 5 700 kg, for which the application for type certification is submitted to a Contracting State on or after 1 January 2016 and required to be operated by more than one pilot shall be equipped with either a CVR or a CARS.

1.2 **Recommendation**.— All turbine-engine aero planes of a maximum certificated take-off mass of 5 700 kg or less for which the individual certificate of airworthiness is first issued on or after 1 January 2016 and required to be operated by more than one pilot should be equipped with either a CVR or a CARS.

1.3 All aero planes of a maximum certificated take-off mass of over 5 700 kg for which the individual certificate of airworthiness is first issued on or after 1 January 1987 shall be equipped with a CVR.

1.4 All turbine-engine aero planes, for which the individual certificate of airworthiness was first issued before 1 January 1987, with a maximum certificated take-off mass of over 27 000 kg that are of types of which the prototype was certificated by the appropriate national authority after 30 September 1969 shall be equipped with a CVR.

1.5 **Recommendation**.— All turbine-engine aero planes, for which the individual certificate of airworthiness was first issued before 1 January 1987, with a maximum certificated take-off mass of over 5 700 kg up to and including 27 000 kg that are of types of which the prototype was certificated by the appropriate national authority after 30 September 1969 should be equipped with a CVR.

1.6 All helicopters of a maximum certificated take-off mass of over 7 000 kg shall be equipped with a CVR. For helicopters not equipped with an FDR, at least main rotor speed shall be recorded on the CVR.

1.7 **Recommendation**.— All helicopters of a maximum certificated take-off mass of over 3 175 kg for which the individual certificate of airworthiness is first issued on or after 1 January 1987 should be equipped with a CVR. For helicopters not equipped with an FDR, at least main rotor speed should be recorded on the CVR.

2. Recording technology

CVRs and CARS shall not use magnetic tape or wire.

3. Duration

(a) For aero planes:

1. All CVRs shall retain the information recorded during at least the last 2 hours of their operation.

2 . All aeroplanes of a maximum certificated take-off mass of over 27 000 kg for which the individual certificate of airworthiness is first issued on or after 1 January 2022 shall be equipped with a CVR which shall retain the information recorded during at least the last 25 hours of its operation.

3. All aeroplanes that are required to be equipped with CARS, and for which the individual certificate of airworthiness is first issued on or after 1 January 2025, shall be equipped with a CARS which shall retain the information recorded during at least the last two hours of their operation.

(b) For helicopters:

All helicopters required to be equipped with a CVR shall be equipped with a CVR which shall retain the information recorded during at least the last two hours of its operation.

4. Cockpit voice recorder alternate power

4.1 . An alternate power source shall automatically engage and provide 10 minutes, plus or minus one minute, of operation whenever aeroplane power to the recorder ceases, either by normal shutdown or by any other loss of power. The alternate power source shall power the CVR and its associated cockpit area microphone components. The CVR shall be located as close as practicable to the alternate power source.

Note 1.— "Alternate" means separate from the power source that normally provides power to the CVR. The use of aeroplane batteries or other power sources is acceptable provided that the requirements above ~~are~~ met and electrical power to essential and critical loads is not compromised.

Note 2.— Note 2.— When the CVR function is combined with other recording functions within the same unit, powering the other functions is allowed

4.2 All aero planes of a maximum certificated take-off mass of over 27 000 kg for which the application for type certification is submitted to a Contracting State on or after 1 January 2018 shall be provided with an alternate power source, as defined in 4.1, that powers the forward CVR in the case of combination recorders.

4.3 **Recommendation**.— All aero planes of a maximum certificated take-off mass of over 27 000 kg for which the individual certificate of airworthiness is first issued on or after 1 January 2018 should be provided with an alternate power source, as defined in 4.1, that powers at least one CVR.

(d) Data link recorders

1. Applicability

1.1 All aeroplanes for which the individual certificate of airworthiness is first issued on or after 1 January 2016, which use any of the data link communications applications referred to in 5.1.2 of Appendix E to ECAR Part 91 and are required to carry a CVR, shall record the data link communications messages on a crash-protected flight recorder

1.2 All aeroplanes for which the individual certificate of airworthiness was first issued before 1 January 2016, that are required to carry a CVR and are modified on or after 1 January 2016 to use any of the data link communications applications referred to in 5.1.2 of Appendix E to ECAR part 91, shall record the data link communications messages on a crash-protected flight recorder, unless the installed data link communications equipment is compliant with a type certificate issued or aircraft modification first approved prior to 1 January 2016.

Note 1.— Refer to table L-5 in Attachment L, Annex 6 Part I for examples of data link communication recording requirements.

Note 2.— Data link communications are currently conducted by either ATN-based or FANS 1/A-equipped aircraft.

Note 3.— A Class B AIR could be a means for recording data link communications applications messages to and from the aeroplanes where it is not practical or is prohibitively expensive to record those data link communications applications messages on FDR or CVR.

Note 4.— The "aircraft modifications" refer to modifications to install the data link communications equipment on the aircraft (e.g. structural, wiring).

1.3 **Recommendation**.— All aeroplanes for which the individual certificate of airworthiness was first issued before 1 January 2016, that are required to carry a CVR and are modified on or after 1 January 2016 to use any of the data link communications applications referred to in 5.1.2 of Appendix E to ECAR Part 91 should record the data link communications messages on a crash-protected flight recorder

1.4 All helicopters for which the individual certificate of airworthiness is first issued on or after 1 January 2016, which use any of the data link communications applications referred to in 5.1.2 of Appendix F to ECAR Part 91 and are required to carry a CVR, shall record the data link communications messages on a crash-protected flight recorder.

1.5 All helicopters for which the individual certificate of airworthiness was first issued before 1 January 2016, that are required to carry a CVR and are modified on or after 1 January 2016 to use any of the data link communications applications referred to in 5.1.2 of Appendix F to ECAR Part 91, shall record the data link communications messages on a crash-protected flight recorder unless the data link communications equipment is compliant with a type design or aircraft modification first approved prior to 1 January 2016.

Note 1.— Refer to table G-4 in Attachment G, Annex 6 Part III for examples of data link communication recording requirements

Note 2.— A Class B AIR could be a means for recording data link communications applications messages to and from the helicopters where it is not practical or is prohibitively expensive to record those data link communications applications messages on FDR or CVR.

Note 3.— The "aircraft modifications" refer to modifications to install the data link communications equipment on the aircraft (e.g. structural, wiring).

1.6 **Recommendation**.— All helicopters for which the individual certificate of airworthiness was first issued before1 January 2016, that are required to carry a CVR and are modified on or after 1 January 2016 to use any of the data link communications applications referred to in 5.1.2 of Appendix F to ECAR Part 91, should record the data link communications messages on a crash-protected flight recorder.

2. Duration

The minimum recording duration shall be equal to the duration of the CVR.

3. Correlation

Data link recording shall be able to be correlated to the recorded cockpit audio.

(e) Flight crew-machine interface recordings

1 . Applicability

1.1 All aeroplanes of a maximum take-off mass of over 27 000 kg for which the application for type certification is submitted to a Contracting State on or after 1 January 2023 shall be equipped with a crash-protected flight recorder which shall record the information displayed to the flight crew from electronic displays, as well as the operation of switches and selectors by the flight crew as defined in Appendix E to ECAR Part 91.

1.2 **Recommendation**.— All aeroplanes of a maximum take-off mass of over 5 700 kg, up to and including 27 000 kg, for which the application for type certification is submitted to a Contracting State on or after 1 January 2023 should be equipped with a crash-protected flight recorder which should record the information displayed to the flight crew from electronic displays, as well as the operation of switches and selectors by the flight crew, as defined in Appendix E to ECAR Part 91.

2. Duration

The minimum flight crew-machine interface recording duration shall be at least for the last two hours.

3. Correlation

Flight crew-machine interface recordings shall be able to be correlated to the recorded cockpit audio

(f) Flight recorders — general

1. Construction and installation

Flight recorders shall be constructed, located and installed so as to provide maximum practical protection for the recordings in order that the recorded information may be preserved, recovered and transcribed. Flight recorders shall meet the prescribed crashworthiness and fire protection specifications.

2. Operation

2.1. Flight recorders shall not be switched off during flight time.

2.2. To preserve flight recorder records, flight recorders shall be deactivated upon completion of flight time following an accident or incident. The flight recorders shall not be reactivated before their disposition as determined in accordance with Annex 13.

Note 1.— The need for removal of the flight recorder records from the aircraft will be determined by the investigation authority in the State conducting the investigation with due regard to the seriousness of an occurrence and the circumstances, including the impact on the operation.

Note 2.— The operator's responsibilities regarding the retention of flight recorder records are contained in 121.150.

3. Continued serviceability

Operational checks and evaluations of recordings from the flight recorder systems shall be conducted to ensure the continued serviceability of the recorders.

Note.— Procedures for the inspections of the flight recorder systems are given in Appendix E and Appendix F to ECAR Part 91.

4. Flight recorder electronic documentation

Recommendation.— The documentation requirement concerning FDR and ADRS parameters provided by operators to accident investigation authorities should be in electronic format and take account of industry specifications.

Note.— Industry specification for documentation concerning flight recorder parameters may be found in the ARINC 647A, Flight Recorder Electronic Documentation, or equivalent document.

5. Combination recorders

5.1. **Recommendation**.— All aero planes of a maximum certificated take-off mass of over 5 700 kg for which the application for type certification is submitted to a Contracting State on or after 1 January 2016, and which are required to be equipped with both a CVR and an FDR, should be equipped with two combination recorders (FDR/CVR).

5.2. All aero planes of a maximum certificated take-off mass of over 15 000 kg for which the application for type certification is submitted to a Contracting State on or after 1 January 2016, and which are required to be equipped with both a CVR and an FDR, shall be equipped with two combination recorders (FDR/CVR). One recorder shall be located as close to the cockpit as practicable and the other recorder located as far aft as practicable.

5.3. **Recommendation**.— All aero planes of a maximum certificated take-off mass over 5 700 kg, required to be equipped with an FDR and a CVR, may alternatively be equipped with two combination recorders (FDR/CVR).

5.4. **Recommendation.**— All multi-engine turbine-powered aero planes of a maximum certificated take-off mass of 5 700 kg or less, required to be equipped with an FDR and/or a CVR, may alternatively be equipped with one combination recorder (FDR/CVR).

(g) Flight recorder data recovery

1. All aeroplanes of a maximum certificated take-off mass of over 27 000 kg and authorized to carry more than nineteen passengers for which the application for type certification is submitted to a Contracting State on or after 1 January 2021, shall be equipped with a means approved by the State of the Operator, to recover flight recorder data and make it available in a timely manner.
2. In approving the means to make flight recorder data available in a timely manner, the State of the Operator shall take into account the following:
   (a) The capabilities of the operator;
   (b) Overall capability of the aeroplane and its systems as certified by State of Design;
   (c) The reliability of the means to recover the appropriate CVR channels and appropriate FDR data; and
   (d) Specific mitigation measures.

   Note.— Guidance on approving the means to make flight recorder data available in a timely manner is contained in the Manual on Location of Aircraft in Distress and Flight Recorder Data Recovery (Doc 10054).

121.345 Radio communication and navigation equipment

(a) Communication equipment

1. An aeroplane shall be provided with radio communication equipment capable of:
   a) conducting two-way communication for aerodrome control purposes;
   b) receiving meteorological information at any time during flight; and
   c) conducting two-way communication at any time during flight with at least one aeronautical station and with such other aeronautical stations and on such frequencies as may be prescribed by the appropriate authority.

   Note.— The requirements of (1) are considered fulfilled if the ability to conduct the communications specified therein is established during radio propagation conditions which are normal for the route.
2. The radio communication equipment required in accordance with (1) shall provide for communications on the aeronautical emergency frequency 121.5 MHz.

3. For operations where communication equipment is required to meet an RCP specification for performance-based communication (PBC), an aeroplane shall, in addition to the requirements specified in (1):
   a) be provided with communication equipment which will enable it to operate in accordance with the prescribed RCP specification(s);
   b) have information relevant to the aeroplane RCP specification capabilities listed in the flight manual or other aeroplane documentation approved by the State of Design or State of Registry; and
   c) have information relevant to the aeroplane RCP specification capabilities included in the MEL.

   Note.— Information on the performance-based communication and surveillance (PBCS) concept and guidance material on its implementation are contained in the Performance-based Communication and Surveillance (PBCS) Manual (Doc 9869).
4. ECAA shall, for operations where an RCP specification for PBC has been prescribed, ensure that the operator has established and documented:
   a) normal and abnormal procedures, including contingency procedures;
   b) flight crew qualification and proficiency requirements, in accordance with appropriate RCP specifications;
   c) a training programme for relevant personnel consistent with the intended operations; and
   d) appropriate maintenance procedures to ensure continued airworthiness, in accordance with appropriate RCP specifications.
5. ECAA shall ensure that, in respect of those aeroplanes mentioned in (3), adequate provisions exist for:
   a) receiving the reports of observed communication performance issued by monitoring programmes established in accordance with Annex 11, Chapter 3, 3.3.5.2; and
   b) taking immediate corrective action for individual aircraft, aircraft types or operators, identified in such reports as not complying with the RCP specification.

(b) Navigation equipment

1. An aeroplane shall be provided with navigation equipment which will enable it to proceed:
   a) in accordance with its operational flight plan; and
   b) in accordance with the requirements of air traffic services; except when, if not so precluded by the appropriate authority, navigation for flights under the visual flight rules VFR is accomplished by visual reference to landmarks.
2. For operations where a navigation specification for performance-based navigation (PBN) has been prescribed, an aeroplane shall, in addition to the requirements specified in (1):
   a) be provided with navigation equipment which will enable it to operate in accordance with the prescribed navigation specification(s); and
   b) be authorized by the ECAA for such operations. have information relevant to the aeroplane navigation specification capabilities listed in the flight manual or other aeroplane documentation approved by the State of the Design or State of Registry; and
   c) have information relevant to the aeroplane navigation specification capabilities included in the MEL.

   Note.— Guidance on aeroplane documentation is contained in the Performance-based Navigation (PBN) Manual (Doc 9613).
3. the ECAA shall, for operations where a navigation specification for PBN has been prescribed, ensure that the operator has established and documented:
   a) normal and abnormal procedures including contingency procedures;
   b) flight crew qualification and proficiency requirements in accordance with the appropriate navigation specifications;
   c) a training programme for relevant personnel consistent with the intended operations; and
   d) appropriate maintenance procedures to ensure continued airworthiness in accordance with the appropriate navigation specifications.

   Note 1.— Guidance on safety risks and mitigations for PBN operations, in accordance with Annex 19, are contained in the Performance-based Navigation (PBN) Operational Approval Manual (Doc 9997).

   Note 2.— Electronic navigation data management is an integral part of normal and abnormal procedures.

4. the ECAA shall issue a specific approval for operations based on PBN authorization required (AR) navigation specifications.
   Note.— Guidance on specific approvals for PBN authorization required (AR) navigation specifications is contained in the Performance-based Navigation (PBN) Operational Approval Manual (Doc 9997).
5. For flights in defined portions of airspace where, based on Regional Air Navigation Agreement, minimum navigation performance specifications (MNPS) are prescribed, an aeroplane shall be provided with navigation equipment which:
   a) continuously provides indications to the flight crew of adherence to or departure from track to the required degree of accuracy at any point along that track; and
   b) has been authorized by the ECAA of the Operator for the MNPS operations concerned.
   Note.— The prescribed minimum navigation performance specifications and the procedures governing their application are published in the Regional Supplementary Procedures (Doc 7030).
6. For flights in defined portions of airspace where, based on Regional Air Navigation Agreement, a reduced vertical separation minimum (RVSM) of 300 m (1 000 ft) is applied between FL 290 and FL 410 inclusive:
   a) the aeroplane shall be provided with equipment which is capable of:
      1) indicating to the flight crew the flight level being flown;
      2) automatically maintaining a selected flight level;
      3) providing an alert to the flight crew when a deviation occurs from the selected flight level. The threshold for the alert shall not exceed ± 90 m (300 ft); and
      4) automatically reporting pressure-altitude; and
   b) the ECAA shall issue a specific approval for RVSM operations
7. Prior to granting the RVSM specific approval required in accordance with (6) b), the ECAA shall be satisfied that:
   a) the vertical navigation performance capability of the aeroplane satisfies the requirements specified in Appendix 4;
   b) the operator has instituted appropriate procedures in respect of continued airworthiness (maintenance and repair) practices and programmes; and
   c) the operator has instituted appropriate flight crew procedures for operations in RVSM airspace.
   Note.— An RVSM specific approval is valid globally on the understanding that any operating procedures specific to a given region will be stated in the operations manual or appropriate crew guidance.
8. the ECAA, in consultation with the State of Registry if appropriate, shall ensure that, in respect of those aeroplanes mentioned in (6), adequate provisions exist for:
   a) receiving the reports of height-keeping performance issued by the monitoring agencies established in accordance with Annex 11, 3.3.4.1; and
   b) taking immediate corrective action for individual aircraft, or aircraft type groups, identified in such reports as not complying with the height-keeping requirements for operation in airspace where RVSM is applied.
9. The ECAA that has issued RVSM specific approval to an operator shall establish a requirement which ensures that a minimum of two aeroplanes of each aircraft type grouping of the operator have their height-keeping performance monitored, at least once every two years or within intervals of 1 000 flight hours per aeroplane, whichever period is longer. If an operator aircraft type grouping consists of a single aeroplane, monitoring of that aeroplane shall be accomplished within the specified period.
   Note.— Monitoring data from any regional monitoring programme established in accordance with Annex 11, 3.3.5.2, may be used to satisfy the requirement.
10. All States that are responsible for airspace where RVSM has been implemented, or that have issued RVSM specific approvals to operators within their State, shall establish provisions and procedures which ensure that appropriate action will be taken in respect of aircraft and operators found to be operating in RVSM airspace without a valid RVSM specific approval.
    Note 1.— These provisions and procedures need to address both the situation where the aircraft in question is operating without a specific approval in the airspace of the State, and the situation where an operator for which the State has regulatory oversight responsibility is found to be operating without the required specific approval in the airspace of another State.

Note 2.— Guidance material relating to the specific approval for operation in RVSM airspace is contained in the Manual on Implementation of a 300 m (1 000 ft) Vertical Separation Minimum Between FL 290 and FL 410 Inclusive (Doc 9574).

11. The aeroplane shall be sufficiently provided with navigation equipment to ensure that, in the event of the failure of one item of equipment at any stage of the flight, the remaining equipment will enable the aeroplane to navigate in accordance with (1) and, where applicable, (2), (5) and (6).

Note.— Guidance material relating to aircraft equipment necessary for flight in airspace where RVSM is applied is contained in the Manual on Implementation of a 300 m (1 000 ft) Vertical Separation Minimum Between FL 290 and FL 410 Inclusive (Doc 9574).

12. On flights in which it is intended to land in instrument meteorological conditions, an aeroplane shall be provided with radio equipment capable of receiving signals providing guidance to a point from which a visual landing can be effected. This equipment shall be capable of providing such guidance for each aerodrome at which it is intended to land in instrument meteorological conditions and for any designated alternate aerodromes

(c) Surveillance equipment

1. An aeroplane shall be provided with surveillance equipment which will enable it to operate in accordance with the requirements of air traffic services.
2. For operations where surveillance equipment is required to meet an RSP specification for performance-based surveillance (PBS), an aeroplane shall, in addition to the requirements specified in (1):
   a) be provided with surveillance equipment which will enable it to operate in accordance with the prescribed RSP specification(s);
   b) have information relevant to the aeroplane RSP specification capabilities listed in the flight manual or other aeroplane documentation approved by the State of Design or State of Registry; and
   c) have information relevant to the aeroplane RSP specification capabilities included in the MEL.

   Note 1.— Information on surveillance equipment is contained in the Aeronautical Surveillance Manual (Doc 9924).

   Note 2.— Information on RSP specifications for performance-based surveillance is contained in the Performance-based Communication and Surveillance (PBCS) Manual (Doc 9869).
3. ECAA, for operations where an RSP specification for PBS has been prescribed, ensure that the operator has established and documented:
   a) normal and abnormal procedures, including contingency procedures;
   b) flight crew qualification and proficiency requirements, in accordance with appropriate RSP specifications;
   c) a training programme for relevant personnel consistent with the intended operations; and
   d) appropriate maintenance procedures to ensure continued airworthiness, in accordance with appropriate RSP specifications.
4. ECAA shall ensure that, in respect of those aeroplanes mentioned in (2), adequate provisions exist for:
   a) receiving the reports of observed surveillance performance issued by monitoring programmes established in accordance with Annex 11, Chapter 3, 3.3.5.2; and
   b) taking immediate corrective action for individual aircraft, aircraft types or operators, identified in such reports as not complying with the RSP specification.

(d) Installation

The equipment installation shall be such that the failure of any single unit required for communications, navigation or surveillance purposes or any combination thereof will not result in the failure of another unit required for communications, navigation or surveillance purposes.

(e) Electronic navigation data management

1. An operator shall not employ electronic navigation data products that have been processed for application in the air and on the ground unless the ECAA has approved the operator's procedures for ensuring that the process applied and the products delivered have met acceptable standards of integrity and that the products are compatible with the intended

function of the equipment that will use them. The ECAA shall ensure that the operator continues to monitor both process and products.

Note.— Guidance relating to the processes that data suppliers may follow is contained in RTCA DO-200A/EUROCAE ED-76 and RTCA DO-201A/EUROCAE ED-77.

2. An operator shall implement procedures that ensure the timely distribution and insertion of current and unaltered electronic navigation data to all aircraft that require it.

121.347 Radio equipment for operations under VFR over routes navigated by pilotage

(a) No person may operate an aircraft under VFR over routes that can be navigated by pilotage, unless it is equipped with the radio equipment necessary under normal operating conditions to fulfill the following:
   (1) Communicate with at least one appropriate ground station from any point on the route and has the ability to communicate on 121.5 MHz.
   (2) Communicate with appropriate traffic control facilities from any point in the area within which flights are intended.
   (3) Receive meteorological information from any point en route by either of two independent systems. One of the means provided to comply with this subparagraph may be used to comply with subparagraphs (1) and (2) of this paragraph.

(b) No person may operate an aircraft at night under VFR over routes that can be navigated by pilotage unless that aircraft is equipped with the radio equipment necessary under normal operating conditions to fulfill the functions specified in paragraph (a) of this section and to receive radio navigational signals applicable to the route flown, except that a marker beacon receiver or ILS receiver is not required.

121.349 Radio equipment for operations under VFR over routes not navigated by pilotage or for operations under IFR or over the-top

(a) No person may operate an aircraft at night under VFR over routes that cannot be navigated by pilotage or for operations conducted under IFR or over-the-top, unless the aircraft is equipped with that radio equipment necessary under normal operating conditions to fulfill the functions specified in 121.347(a) and to receive satisfactorily by either of two independent systems, radio navigational signals from all primary en route and approach navigational facilities intended to be used. However, only one marker beacon receiver is required, provided visual and aural signals and one ILS receiver are provided. Equipment provided to receive signals en route may be used to receive signals on approach, if it is capable of receiving both signals.

(b) In the case of operation over routes on which navigation is based on low frequency radio range or automatic direction finding, only one low frequency radio range or ADF receiver need be installed if the aircraft is equipped with two VOR receivers, and VOR navigational aids are so located and the aircraft is so fueled that, in the case of failure of the low frequency radio range receiver or ADF receiver, the flight may proceed safely to a suitable airport, by means of VOR aids, and complete an instrument approach by use of the remaining aircraft radio system.

(c) Whenever VOR navigational receivers are required by paragraph (a) or (b) of this section, at least one approved distance measuring equipment unit (DME) capable of receiving and indicating distance information from VORTAC facilities must be installed on each aircraft.

If the distance measuring equipment (DME) becomes inoperative en route the pilot shall notify ATC of that failure as soon as it occurs.

121.351 Radio and navigation equipment for extended overwater operations and for certain other operations

(a) No person may conduct an extended overwater operating unless the aircraft is equipped with the radio equipment necessary to comply with 121.349 and an independent system that complies with 121.347 (a) (1) and two long range navigation systems when VOR or ADF radio navigation equipment is unusable along any portion of the route being flown.

(b) No operator may conduct an operation without the equipment specified in paragraph (a) of this section, if the ECAA finds that equipment to be necessary for search and rescue operations because of the nature of the terrain to be flown over.

121.352 Aeroplanes and helicopters (helicopters operated in Egypt) equipped with automatic landing systems, a head-up display (HUD) or equivalent displays, enhanced vision systems (EVS), synthetic vision systems (SVS) and/or combined vision systems (CVS)

(a) Notwithstanding Item(121.580a,3 to 4) where aeroplanes or helicopters are equipped with automatic landing systems, a HUD or equivalent displays, EVS, SVS or CVS, or any combination of those systems into a hybrid system, criteria for the use of such systems for the safe operation of an aeroplane or a helicopter shall be established by ECAA.

Note 1.— Information regarding automatic landing systems , a HUD or equivalent displays, EVS, SVS or CVS, including references to RTCA and EUROCAE documents is contained in the Manual of All-Weather Operations (Doc 9365).

Note 2.— Automatic landing system — helicopter is an automatic approach using airborne systems which provide automatic control of the flight path, to a point aligned with the landing surface, from which the pilot can transition to a safe landing by means of natural vision without the use of automatic control.

(b) In approving the operational use of automatic landing systems, a HUD or equivalent displays, EVS, SVS or CVS, ECAA shall ensure that:

(1) the equipment meets the appropriate airworthiness certification requirements;

(2) the operator has carried out a safety risk assessment of the operations supported by the automatic landing systems, a HUD or equivalent displays, EVS, SVS or CVS;

(3) the operator has established and documented the procedures for the use of, and training requirements for, automatic landing systems, a HUD or equivalent displays, EVS, SVS or CVS.

Note 1.— Guidance on safety risk assessments is contained in the Safety Management Manual (SMM) (Doc 9859).

Note 2.— Guidance on operational approvals is contained in Attachment I of Annex 6 Part I.

121.353 Emergency equipment for operations over uninhabited terrain areas

Unless it has the following equipment, no operator may conduct operations over an uninhabited area or any other area that (in the operator's operations specifications) the ECAA requires equipment for search and rescue in case of an emergency:

(a) Suitable pyrotechnic signaling devices, as specified in 91.206(d);

(b) Enough survival kits, appropriately equipped for the route being flown and for the number of occupants of the aircraft; and

(c) Emergency locator transmitter equipment that meets the requirements specified in Part 91.207 (unless exempted from the ECAA due to technical reasons of non-availability of approved kits/spares).

121.354 Emergency equipment for operations over uninhabited terrain areas

Unless it has the following equipment, no operator may conduct operations over an uninhabited area or any other area that (in the operator's operations specifications) the ECAA requires equipment for search and rescue in case of an emergency:

(a) Suitable pyrotechnic signaling devices, as specified in 91.206(d);

(b) Enough survival kits, appropriately equipped for the route being flown and for the number of occupants of the aircraft; and

(c) Emergency locator transmitter equipment that meets the requirements specified in Part 91.207 (unless exempted from the ECAA due to technical reasons of non-availability of approved kits/spares).

121.355 Equipment for operations on which specialized means of navigation are used

No certificate holder may conduct an operation:

(a) Using Doppler Radar or an inertial navigation system outside the Arab Republic of Egypt unless such systems have been approved by the ECAA; or

(b) Using Doppler radar or an inertial navigation system within the Arab Republic of Egypt, or any other specialized means of navigation, unless is shows that an adequate airborne system is provided for the specialized navigation authorized for the particular operation.

121.356 Airborne Collision Avoidance System (ACAS II)

(a) All turbine powered aircraft of a maximum certificated takeoff weight in excess of 5700 kg or authorized to carry more than 19 passengers , shall be equipped with an approved ACAS II system and the appropriate class of mode "S" transponder, unless required sooner by a country in which the aircraft will operate;

Recommendation.— *All aero planes should be equipped with an airborne collision avoidance system (ACAS II).*

(b) An ACAS II system shall satisfy the minimum performance level , be installed and operate in accordance with the relevant provisions of ICAO Annex 10, Volume IV, Ch.4 as amended; and

(c) The appropriate manuals required by this Part shall contain the following information on the ACAS II system, as required by this section:
  (1) Appropriate procedures for:
    (i) The operation of the equipment; and
    (ii) Proper cockpit crew action with respect to the equipment.
  (2) An outline of all input sources that must be operative for the ACAS II system to function properly.

(d) All new ACAS installation shall monitor own aircraft's vertical rate to verify compliance with RA sense. If non-compliance is detected, ACAS shall stop assuming compliance, and instead shall assume the observed vertical rate . Compliance with this requirement can be achieved through the implementation of TCAS version 7.1; previous versions do not comply with this requirement.

(e) After 1 January 2017, All ACAS units shall comply with the requirements stated in (d) above.

Recommendation.— All ACAS should be compliant with the requirements stated in (d) above.

121.357 Airborne weather radar equipment requirements

(a) No person may operate any aircraft certificated with a MGTW of over 12,500 pounds (5700Kg) unless approved airborne weather radar equipment has been installed in the aircraft.

(b) [Reserved]

(c) Each person operating an aircraft required to have approved airborne weather radar equipment installed shall, when using it under this Part, operate it in accordance with the following:
  (1) Dispatch. No person may dispatch or begin the flight of an aircraft under IFR or night VFR conditions when current weather reports indicate that thunderstorms, or other potentially hazardous weather conditions that can be detected with airborne weather radar, may reasonably be expected along the route to be flown, unless the airborne weather radar equipment is in satisfactory operating condition; and
  (2) If the airborne weather radar becomes inoperative en route, the aircraft must be operated in accordance with the approved instructions and procedures specified in the operations manual for such an event.

(d) Notwithstanding any other provision of this Part, an alternate electrical power supply is not required for airborne weather radar equipment.

121.358 Forward looking wind shear warning systems

(a) All turbojet aircraft of a maximum certificated takeoff gross weight of 5700 kg or more or authorized to carry more than 9 passengers should be equipped with a forward looking wind shear system.

(b) A forward looking wind shear warning system should be capable of providing the cockpit crew with timely aural and visual warning of wind shear ahead of the aircraft, and the information required to permit the cockpit crew to safely execute a missed approach or escape maneuver if necessary. The system shall provide an indication to the cockpit crew when the limits specified for the certification of the automatic landing system are being approached, when this automatic landing system is being used.

(c) The system should also provide an indication to the pilot when the limits specified for the certification of automatic landing equipment are being approached, when such equipment is in use.

121.359 Electronic flight bags (EFBs)

Note.— Guidance on EFB equipment, functions and specific approval is contained in EAC 121.15 and the Manual on Electronic Flight Bags (ICAO Doc 10020).

(a) Where portable EFBs are used on board an aeroplane or a helicopter, the operator shall ensure that they do not affect the performance of the aeroplane systems, equipment or the ability to operate the aeroplane or the helicopter.

(b) Where EFBs are used on board an aeroplane or the helicopter the operator shall:

(1) Assess the safety risk(s) associated with each EFB function;

(2) Establish and document the procedures for the use of, and training requirements for, the device and each EFB function; and

(3) Ensure that, in the event of an EFB failure, sufficient information is readily available to the flight crew for the flight to be conducted safely.

Note.— Guidance on safety risk assessments is contained in the Safety Management Manual (SMM) (Doc 9859).

(c) the ECAA shall issue a specific approval for the operational use of EFB functions to be used for the safe operation of aeroplanes or helicopters.

(d) When issuing a specific approval for the use of EFBs, the ECAA shall ensure that:

(1) The EFB equipment and its associated installation hardware, including interaction with aeroplane or helicopter systems if applicable, meet the appropriate airworthiness certification requirements;

(2) The operator has assessed the safety risks associated with the operations supported by the EFB function(s);

(3) The operator has established requirements for redundancy of the information (if appropriate) contained in and displayed by the EFB function(s);

(4) The operator has established and documented procedures for the management of the EFB function(s) including any database it may use; and

(5) The operator has established and documented the procedures for the use of, and training requirements for, the EFB and the EFB function(s).

121.360 Ground proximity, glide slope deviation and terrain avoidance warning systems

(a) All turbine-engine aeroplanes of a maximum certificated take-off mass in excess of 5 700 kg or authorized to carry more than nine passengers shall be equipped with a ground proximity warning system which has a forward-looking terrain avoidance function.

(b) The operator shall implement database management procedures that ensure the timely distribution and update of current terrain and obstacle data to the ground proximity warning system.

(c) Recommendation: All turbine-engine aeroplanes of a maximum certificated take-off mass of 5700 kg or less and authorized to carry more than five but not more than nine passengers should be equipped with a ground proximity warning system which provides the warnings of (h)(1) and 3), warning of unsafe terrain clearance and a forward looking terrain avoidance function

(d) All turbine-engine aeroplanes of a maximum certificated take-off mass of 5 700 kg or less and

authorized to carry more than five but not more than nine passengers for which the individual certificate of airworthiness is first issued on or after 1 January 2026, shall be equipped with a ground proximity warning system which provides the warning for unsafe terrain clearance and a forward-looking terrain avoidance function.

(e) From 1 January 2007 all piston-engine aeroplanes of a maximum certificated take-off mass in excess of 5700 kg or authorized to carry more than nine passengers shall be equipped with a ground proximity warning system which provides the warnings in (f) (1) and (3) below, warning of unsafe terrain clearance and a forward looking terrain avoidance function.

(f) A ground proximity warning system shall provide automatically a timely and distinctive warning to the flight crew when the aeroplane is in potentially hazardous proximity to the earth's surface.

(g) A ground proximity warning system shall provide, unless otherwise specified herein, warnings of the following circumstances:
  (1) Excessive descent rate;
  (2) Excessive terrain closure rate;
  (3) Excessive altitude loss after take-off or go-around;
  (4) Unsafe terrain clearance while not in landing configuration;
    (i) Gear not locked down;
    (ii) Flaps not in a landing position; and
  (5) Excessive descent below the instrument glide path.

(h) The operator shall implement database management procedures that ensure the timely distribution and update of current terrain and obstacle data to the ground proximity warning system.

SUBPART L
Maintenance, Preventive Maintenance, and Alterations

121.361 Applicability

(a) An operator shall not operate an aircraft unless it is maintained and released to service by an organization appropriately approved by ECAA in accordance with Part 145.

(b) When an operator's aircraft maintenance could not be completely achieved by its appropriately approved Part145 maintenance organization, a certificate holder may make contractual arrangements with another approved maintenance organization for the performance of any maintenance, preventive maintenance, or alterations. Those contracts must be acceptable to the ECAA. However, this does not relieve the certificate holder of the responsibility for the airworthiness and performance of its aircraft.

121.363 Definitions

The following definitions from Part 145 shall apply to this subpart:

(a) "Pre-flight inspection / Pre-Departure Check" means the inspection carried out before flight to ensure that the aircraft is fit for the intended flight. It does not include defect rectification.

(b) "Approved standard" means a manufacturing/design/maintenance/quality standard approved by the ECAA.

121.365 Application and approval of the certificate holder's maintenance system

For the approval of the maintenance system an applicant for the initial issue, variation and renewal of an operations certificate shall submit to the ECAA:

(a) A maintenance control manual containing details of the organization structure including:
  (1) The nominated management personnel responsible for the maintenance system required by 121.59, 121.61, 121.367 (a) (5), and 121.369 (b);
  (2) The procedures that must be followed to satisfy the maintenance responsibility of 121.367 and the quality functions of 121.370, except that where the certificate holder is appropriately approved as a maintenance organization in accordance with Part 145, such details may be included in the Part 145 exposition (Policy and procedures manual).

(b) A certificate holder's maintenance management exposition and any subsequent amendment must be accepted by the ECAA.

(c) An applicant for the initial issue, variation and renewal of an operations certificate who meets the requirements of this subpart, in conjunction with an appropriate approved maintenance organization's exposition, is entitled to approval of the maintenance system by the ECAA.

121.367 Maintenance responsibility

(a) A certificate holder shall ensure the airworthiness of the aircraft and the serviceability of both operational and emergency equipment by:
  (1) The accomplishment of pre-flight inspections.
  (2) The rectification to an approved standard of any defect and damage affecting safe operation, taking into account the minimum equipment list and configuration deviation list if available for the aircraft type.
  (3) The accomplishment of all maintenance in accordance with the approved certificate holder's aircraft maintenance program specified in 121.374.
  (4) The analysis of the effectiveness of the certificate holder's approved aircraft maintenance program.
  (5) The accomplishment of any operational directive, airworthiness directive and any other continued airworthiness requirement made mandatory by the ECAA**.**
  (6) The accomplishment of modifications in accordance with an approved standard; and for non-mandatory modifications and repairs in accordance with an approved standard; and for non-mandatory modifications, the establishment of an embodiment policy.

(b) A certificate holder shall ensure the certificate of airworthiness for each operated aircraft remains valid with respect to:
  (1) Paragraph (a) requirements;

(2) Any calendar expiration date specified in the certificate; and
(3) Any other maintenance condition specified in the certificate.

(c) The requirements specified in paragraph (a) and (b) must be performed in accordance with procedures acceptable to the ECAA.

121.369 Maintenance management

(a) A certificate holder must be appropriately approved in accordance with Part 145 to carry out the requirements specified in 121.367, except when the ECAA approves maintenance that can be contracted to an appropriate Part 145 approved organization.

(b) A certificate holder must employ a person or group of persons acceptable to the ECAA to ensure that all maintenance is carried out on time to an approved standard such that the maintenance responsibility requirements prescribed in 121.367 are satisfied, and to ensure the functioning of the quality system required by 121.370. Those responsible must meet the requirements of 121.59 and 121.61.

(c) When a certificate holder is not appropriately approved in accordance with Part 145, arrangements must be made with such an organization to carry out the requirements specified in 121.367, but excluding 121.367 (a) (4). A maintenance contract must be agreed between the certificate holder and the Part 145 approved maintenance organization detailing the functions specified in 121.367, but excluding 121.367 (a) (4), and defining the support of the quality functions of 121.370. This contract, together with all amendments must be acceptable to the ECAA.

(d) A certificate holder must provide suitable office accommodations at appropriate locations for the personnel specified in paragraph (b) of this section.

(e) Maintenance and preventive maintenance personnel duty time limitations: Within Egypt, each certificate holder (or person performing maintenance or preventive maintenance functions for it) shall relieve each person performing maintenance or preventive maintenance from duty for a period of at least 24 consecutive hours during any seven consecutive days, or the equivalent thereof within any one calendar month.

(f) A pre-departure checks in item 121.367 (a)(1) may be accomplished by a cockpit crew member (after being approved according to ECAR 65) for aircrafts which having a maximum approved passenger seating configuration, excluding any required crewmember seat, of 10 seats or less only out of main base.

121.370 Quality system

(a) For maintenance purposes, the certificate holder's quality system, must additionally include at least the following functions:
(1) Monitoring that the activities of 121.367 are being performed in accordance with the accepted procedures.
(2) Monitoring that all contracted maintenance is carried out in accordance with the contract.
(3) Monitoring the continued compliance with the requirements of this subpart.

(b) Where the certificate holder is approved in accordance with Part 145, the quality system may be combined with that required by Part 145.

(c) Quality system shall obtain and assess continuing airworthiness information and recommendations available from the organization responsible for the type design and shall implement resulting actions considered necessary in accordance with a procedure acceptable to ECAA

121.371 Personnel for required inspections, and duplicate inspections for aircraft and engine controls

(a) No person may use any person to perform required inspections unless the person performing the inspection is appropriately certificated, properly trained, qualified, and authorized to do so.

(b) No person may allow any person to perform a required inspection unless, at that time, the person performing that inspection is under the supervision and control of an approved maintenance organization inspection unit.

(c) No person may perform a required inspection if he performed the item of work required to be inspected.

(d) A duplicate inspection item must be inspected and signed by two consecutive maintenance inspectors.

(e) Each certificated holder shall maintain, or shall determine that each person with whom it arranges to perform its required inspections maintains, a current listing of persons who have been trained, qualified, and authorized to conduct required inspections. The persons must be identified by name, occupational title, and the inspections that they are authorized to perform. The certificated holder (or person with whom it arranges to perform its required inspections) shall give written information to each person so authorized describing the extent of his responsibilities, authorities, and inspections limitations. This written information shall be made available for inspection by the ECAA upon request.

121.372 Maintenance Program Requirements for two- engine EDTO operations

In order to conduct EDTO flight using two – engine airplane, each certificate holder must develop and comply with the EDTO maintenance program, as authorized in the certificate holder's operations specifications, for each airplane - engine combination used in EDTO. The certificate holder must develop this EDTO maintenance program by supplementing the maintenance program currently approved for the certificate holder. This EDTO maintenance program must include the following elements:

(a) EDTO maintenance document. The certificate holder must have an EDTO maintenance document for use by each person involved in EDTO.
  (1) The document must:
    (i) List each EDTO significant system
    (ii) Refer to or include all of the EDTO maintenance elements in this section
    (iii) Refer to or include all supportive programs and procedures
    (iv) Refer to or include all duties and responsibilities, and
    (v) Clearly state where referenced material is located in the certificate holder's document system

(b) EDTO pre – departure service check. Except as provided in Appendix (M) of this part, the certificate holder must develop a pre – departure tailored to their specific operation.

(c) The certificate holder must complete a pre – departure service check immediately before each EDTO flight.

(d) At a minimum, this check must;
  (1) Verify the condition of all EDTO significant systems
  (2) Verify the overall status of the airplane by reviewing applicable maintenance records, and
  (3) Include an interior and exterior inspection to include a determination of engine and APU oil levels and consumption rates.

(e) An appropriately trained maintenance person , who is EDTO qualified , must accomplish and certify by signature EDTO specific tasks. Before an EDTO flight may commence, an EDTO pre – departure service check signatory person , who has been authorized , must certify by signature, that the EDTO pre – departure service check has been completed.

(f) For the purpose of this paragraph (b) only, the following definitions apply:
  (1) EDTO qualified person: A person is EDTO qualified when that person satisfactorily completes an approved EDTO training program and is authorized accordingly.
  (2) EDTO pre – departure service check signatory person: A person is an EDTO pre – departure service check signatory person when that person is EDTO qualified and that person:
    (i) Limitations on dual maintenance.
  (3) Except as specified in paragraph (c)(2), the certificate holder may not perform scheduled or unscheduled dual maintenance during the same maintenance visit on the same or a substantially similar system listed in the EDTO maintenance document, if the improper maintenance could result in the failure of an EDTO significant system.
  (4) In the event dual maintenance as defined in paragraph (c)(1) of this section cannot be avoided, the certificate holder may perform maintenance provided:

(i) The maintenance action on each affected EDTO significant system is performed by different person

(ii) The maintenance action on each affected EDTO significant system is performed by the same person

under the direct supervision of a second qualified individual; and

(g) Task identification. The certificate holder must identify all EDTO – specific tasks. An appropriately trained person who is EDTO qualified must accomplish and certify by signature that EDTO – specific task has been completed.

(h) Centralized maintenance control procedures. The certificate holder must develop and maintain procedures for centralized maintenance control of EDTO.

(i) Parts control program. The certificate holder must develop an EDTO parts control program to ensure the proper identification of parts used to maintain the configuration of airplanes used in EDTO

(j) Reliability Program. The certificate holder must have an EDTO reliability program. This program must be the certificate's existing reliability program. This program must be event – oriented and include procedures to report the events listed below, as follows:

(1) The certificate holder must report the following events within 96 hours of the occurrence to ECAA

(i) In diversions and turn backs for failures, malfunctions, or defects associated with any airplane or engine system.

(ii) Uncommented power or thrust changes or surges

(iii) Inability to control the engine or obtain desired power or thrust

(iv) Inadvertent fuel loss or unavailability, or uncorrectable fuel imbalance in flight

(v) Failures, malfunctions or defects associated with EDTO significant systems

(vi) Any event that would jeopardize the safe flight and landing of the airplane on an EDTO flight

(2) The certificate holder must investigate the cause of each event listed in paragraph (g)(1) of this section and submit findings and a description of corrective action to ECAA. This report must include the information specified in ECAR 121.703(e). The corrective action must be acceptable to ECAA

(k) Propulsion system monitoring.

(1) If the IFSD rate (computed on a 12 – month rolling average) for an engine installed as part of an airplane – engine combination exceeds the following values, the certificate holder must do a comprehensive review of its operations to identify any common cause effects and systematic error. The IFSD rate must be computed using all engines of that type in the certificate holder's entire fleet of airplanes approved for EDTO.

(i) A rate of 0.05 per 1,000 engine hours for EDTO up to and including 120 minutes

(ii) A rate of 0.03 per 1,000 engine hours for EDTO beyond 120 – minutes up to and including 207 minutes in the North Pacific area of operation and up to and including 180 – minutes elsewhere

(iii) A rate of 0.02 per 1,000 engine hours for EDTO beyond 207 – minutes in the North Pacific Area of operation and beyond 180- minutes elsewhere.

(2) Within 30 days of exceeding the rates above, the certificate holder must submit a report of investigation and any necessary corrective action taken to ECAA

(l) Engine condition monitoring.

(1) The certificate holder must have an engine condition monitoring program to detect deterioration at an early stage and to allow for corrective action before safe operation is affected.

(2)This program must describe the parameters to be monitored, the method of data collection, the method of analyzing data, and the process for taking corrective action.

(3)The program must ensure that engine – limit margins are maintained so that a prolonged engine – inoperative diversion may be conducted at approved power levels

an in all expected environmental conditions without exceeding approved engine limits. This includes approved limits for items such as rotor speeds and exhaust gas temperatures.

(m) Oil – Consumption monitoring.

The certificate holder must have an engine oil consumption monitoring program to ensure that there is enough oil to complete each EDTO flight. APU oil consumption must be included if an APU is required for EDTO. The operator's consumption limit may not exceed the manufacturer's recommendations. Monitoring must be continuous and includes oil added at each EDTO departure point. The program must compare the amount of oil added at each EDTO departure point with the running average consumption to identify sudden increase.

(n) APU- in – flight start program.

If the airplane type certificate requires an APU but does not require the APU to run during the EDTO portion of the flight, the certificate holder must develop and maintain a program acceptable to ECAA for cold soak in – flight star – and – run reliability

(o) Maintenance training.

For each airplane – engine combination, the certificate holder must develop a maintenance training program that provides training adequate to support EDTO. It must include EDTO specific training for all persons involved in EDTO maintenance that focuses on the special nature of EDTO. This training must be in addition to the operators' maintenance training program used to qualify individuals to perform work on specific airplane's engines.

(p) Configuration, Maintenance and Procedures (CMP) document.

If an airplane – engine combination has a CMP document, the certificate holder must use a system that ensures compliance with the applicable document approved by TC holder authority

(q) Procedural change:

Each substantial change to the maintenance or training procedures that were used to qualify the certificate holder for EDTO, must be submitted to ECAA for review. The certificate holder cannot implement a change until ECAA notifies the certificate holder that the review is completed.

121.373 Continuing analysis and surveillance

(a) Each certificate holder shall establish and maintain a system for the continuing analysis and surveillance of the performance and effectiveness of its inspection program and the program covering other maintenance, preventive maintenance, and alterations and for the correction of any deficiency in those programs, regardless of whether those programs are carried out by the certificate holder or by another person.

(b) Whenever the ECAA finds that either or both of the programs described in paragraph (a) of this section does not contain adequate procedures and standards to meet the requirements of this subpart, the certificate holder shall, after notification by the ECAA, make any changes in those programs that are necessary to meet those requirements.

121.374 Certificate holder's aircraft maintenance program

(a) A certificate holder must ensure that the aircraft is maintained in accordance with the certificate holder's aircraft maintenance program. The program must contain details, including frequency, of all maintenance required to be carried out. The program will be required to include a continuing structural integrity program, certification maintenance requirements and reliability program when the ECAA determines that such a reliability program is necessary. EAC121-08 provides general information and guidance on the development of required maintenance program.

(b) The certificate holder's aircraft maintenance program and any subsequent amendments must be approved by the ECAA for the Egyptian registered aircraft and by the state of registry for the leased aircraft. After the amendments are approved, the certificate holder must promptly distribute the amendments to all holders of the aircraft maintenance program.

(c) The maintenance program shall observe: Human Factors principles.

121.375 Certificate holder's aircraft journey log and technical log

(a) A certificate holder must use an aircraft journey log and technical log system to accurately track the following information for each aircraft:
  (1) Aircraft nationality and registration.
  (2) Date.
  (3) Names of the cockpit crew and their duty assignment.
  (4) Departure point and time of departure.
  (5) Arrival point and time of arrival.
  (6) Duration of the flight in hours and minutes or tenths.
  (7) Type of flight.
  (8) The current aircraft certificate of release to service.
  (9) The current maintenance status giving the aircraft maintenance status of what scheduled and out of phase maintenance is next due with regard to pending maintenance requirements.
  (10) Guidance and instructions for maintenance support arrangements.
  (11) Signature of the person responsible for completing the log.
  (12) Incidents, defects, observations and any action taken.

(b) All entries in the journey log or technical log must be accomplished in ink and the journey log and technical log and subsequent amendments must be approved by the ECAA.

(c) The certificate holder's aircraft journey log and technical log and any subsequent amendment must be accepted by the ECAA.

121.376 Maintenance records

(a) A certificate holder shall ensure that a system has been established to keep, in a form acceptable to the ECAA, the following records for the periods specified in paragraph (b):
  (1) All detailed maintenance records in respect of the aircraft and any aircraft component fitted thereto;
  (2) The total time and flight cycles, as appropriate, of the aircraft, engines, propellers, components, including the current status of all life limited components;
  (3) The time and flight cycles as appropriate, since last overhaul of the aircraft or aircraft component subjected to an overhaul life;
  (4) The current aircraft inspection status such that compliance with the approved certificate holder's aircraft maintenance program can be established;
  (5) The current status of airworthiness directives applicable to the aircraft and aircraft components; and
  (6) Details of current modifications and repairs to the aircraft, engine(s), propeller(s) and any other aircraft component vital to flight safety.

(b) Except as provided for in paragraph(c) the records specified in paragraph (a) must be retained as follows:
  (1) In the case of paragraph (a)(2), (a)(5) and (a)(6) for 12 months after the aircraft has been permanently withdrawn from service.
  (2) In the case of paragraphs (a)(3) and (a)(4) until another overhaul or inspection of equivalent work scope and detail has superseded a period of 90 days after the aircraft or aircraft component overhaul or inspection.
  (3) In the case of paragraphs (a)(1) 24 months after the aircraft or aircraft component was released to service.

(c) The certificate holder's aircraft technical log must be retained for 24 months after the date of any flight recorded therein.

(d) When an aircraft is permanently transferred from one certificate holder to another certificate holder the records specified in paragraphs (a) and (c) must also be transferred and the time periods in paragraphs (b) and (c) will continue to apply to the gaining certificate holder. In the event of a temporary change of operators then the original operator must make these records available to the gaining operator for the term of the temporary change.

121.377 Transfer of maintenance records

Each certificate holder who sells an Egyptian registered aircraft shall transfer to the purchaser, at the time of sale, the maintenance records of that aircraft, in plain language form or in coded form at the election of the purchaser, if the coded form provides for the preservation and retrieval of information in a manner acceptable to the ECAA.

121.378 Continued validity of the certificate holder's certificate

A certificate holder must comply with this subpart to ensure continued validity of the air carrier or air taxi certificate.

121.379 Equivalent safety case

A certificate holder shall not introduce alternative procedures to those prescribed in this subpart unless needed and an equivalent safety case has first been accepted by the ECAA.

121.380 Maintenance and preventive maintenance training program

Each certificate holder or person performing maintenance or preventive maintenance functions for it shall have a training program to ensure that each person (including inspection personnel) who determines the adequacy of work done is fully informed about procedures and techniques and new equipment in use and is competent to perform his duties.

SUBPART M
Crewmember and Dispatcher Requirements

121.381 Applicability
This subpart prescribes crewmember and dispatcher requirements for all certificate holders.

121.383 Limitations on use of services for cockpit crews
(a) No certificate holder may use any person as a pilot or flight engineer nor may any person serve as a pilot or flight engineer unless that person:
  (1) Holds an appropriate current pilot or flight engineer license issued by or validated by the ECAA**;**
  (2) Has any required appropriate current pilot or flight engineer medical certificates in his possession while engaged in operations under this Part; and
  (3) Is otherwise qualified for the operation for which they are to be used.

(b) Each pilot and flight engineer covered by paragraph (a)(1) and (2) of this section shall present his license and medical certificate for inspection upon the request of the ECAA.

(c) No certificate holder may:
  (1) Use the services of any person as a pilot on an aircraft engaged in operations under this Part if that person has reached his or her 65th birthday .
  (2) Use the services of any person as a pilot in command in operations under this part between Egypt and another country, or in operations between other countries, if that person has reached his or her 60th birthday unless there is another pilot in the flight deck crew who has not yet attained 60 years of age.

(d) No pilot may:
  (1) Serve as a pilot in operations under this part if that person has reached his or her 65th birthday.
  (2) Serve as a pilot in command in operations under this part between Egypt and another country, or in operations between other countries, if that person has reached his or her 60th birthday unless there is another pilot in the flight deck crew who has not yet attained 60 years of age.

121.385 Composition of the cockpit crew
(a) No certificate holder may operate an aircraft with less than the minimum cockpit crew as required by the type certificate or the aircraft flight manual approved for the type aircraft and required by this Part for the kind of operation being conducted.

(b) In any situation in this Part that requires the performance of two or more functions for a pilot or flight engineer license, that requirement is not satisfied by the performance of multiple functions at the same time by one person.

(c) The following minimum pilot crews apply:
  (1) Air carriers. An air carrier is required to operate with a minimum pilot crew of two pilots and the carrier shall designate one pilot in command and the other second in command.
  (2) Air taxi operators. If an air taxi operator is authorized to operate helicopters or fixed wing aircraft under IFR, the minimum pilot crew is two pilots and the operator shall designate one pilot as pilot in command and the other second in command. A person may operate an aircraft type certified for one pilot under IFR without a second in command if the aircraft;
    (i) Is equipped with an operative approved autopilot system and the use of that system is authorized by the ECAA; and
    (ii) The operator demonstrates that operations using the autopilot can be conducted safely under this Part.
    (iii) Headset with a boom microphone or equivalent and,
    (iv) Means of displaying charts that enables them to be readable in all ambient light conditions.

(d) On each flight requiring a flight engineer at least one cockpit crewmember, other than the flight engineer, must be qualified to provide emergency performance of the flight engineer's functions for the safe completion of the flight if the flight engineer becomes ill

or is otherwise incapacitated. A pilot need not hold a flight engineer's license to perform the flight engineer's functions in such a situation.

(e) The flight crew shall include at least one member authorized by the State of Registry to operate the type of radio transmitting equipment to be used.

Note.— Some States have dispensed with the system of issuing radio licences

(f) An aeroplane shall not be operated under the IFR or at night by a single pilot unless:
(1) the flight manual does not require a flight crew of more than one;
(2) the aeroplane is propeller-driven;
(3) the maximum approved passenger seating configuration is not more than nine;
(4) the maximum certificated take-off mass does not exceed 5 700 kg;
(5) the aeroplane is equipped as described in 121.385 (c) (2); and
(6) the pilot-in-command has satisfied requirements of experience, training, checking and recency

121.387 Flight engineer

No certificate holder may operate an aircraft for which a type certificate was issued before January 2, 1964, having a maximum certificate takeoff weight of more than 36,000 kg without a cockpit crewmember holding a current flight engineer license. For each aircraft type certificated after January 1, 1964, the requirement for a flight engineer is determined under the type certification requirements of Part 25, or equivalent.

121.389 Flight navigator and specialized navigation equipment

(a) No certificate holder may operate an aircraft, when its position cannot be reliably fixed for a period of more than one hour, without:
(1) A cockpit crewmember who holds a current flight navigator certificate; or
(2) Specialized means of navigation approved in accordance with Part 121.355 which enables a reliable determination to be made of the position of the aircraft by each pilot seated at his duty station.

(b) Notwithstanding paragraph (a) of this section, the ECAA may also require a flight navigator or special navigation equipment, or both, when specialized means of navigation is necessary for one hour or less. In making this determination, the ECAA considers:
(1) The speed of the aircraft;
(2) Normal weather conditions en route;
(3) Extent of air traffic control;
(4) Traffic congestion;
(5) Area of navigational radio coverage at destination;
(6) Fuel requirements;
(7) Fuel available for return to point of departure or alternates;
(8) Predication of flight upon operation beyond the point of no return; and
(9) Any other factors he determines are relevant in the interest of safety.

(c) Operations where a flight navigator or special navigation equipment, or both, are required, will be specified in the operations specifications of the air carrier or air taxi operator.

121.391 Cabin crew

(a) Each certificate holder shall provide at least the following cabin crew on each passenger-carrying airplane used:
(1) For airplanes having a seating capacity of more than 20 but less than 51 passengers: one cabin crewmember.
(2) For airplanes having a seating capacity of more than 50 but less than 101 passengers: two cabin crewmembers.
(3) For airplanes having a seating capacity of more than 100 passengers: two cabin crewmembers plus one additional cabin crewmember for each unit (or part of a unit) of 50 passenger seats above a seating capacity of 100 passengers.

(b) If, in conducting the emergency evacuation demonstration required under 121.291(a) or (b), the certificate holder used more cabin crews than is required under paragraph (a) of this section for the maximum seating capacity of the aircraft used in the demonstration, he may not, thereafter, take off that aircraft:
(1) In its maximum seating capacity configuration with fewer cabin crews than the number used during the emergency evacuation demonstration; or

(2) In any reduced seating capacity configuration with fewer cabin crews than the number required by paragraph (a) of this section for that seating capacity plus the number of cabin crew used during the emergency evacuation demonstration that were in excess of those required under paragraph (a) of this section.

(c) The numbers of cabin crew approved under paragraph (a) of this section are set forth in the certificate holder's operations specifications.

(d) During takeoff and landing, the cabin crew required by this section shall be located as near as practicable to required floor level exits and shall be uniformly distributed throughout the aircraft in order to provide the most effective egress of passengers in event of an emergency evacuation. During taxi, the cabin crew required by this section must remain at their duty stations with safety belts and shoulder harnesses fastened except to perform duties related to the safety of the aircraft and its occupants.

121.392 Personnel identified as Cabin Crew.

(a) Any person identified by the certificate holder as a Cabin Crew on an aircraft in operations under this part must be trained and qualified in accordance with subparts N and O of this part. This includes:
(1) Cabin Crew provided by the certificate holder in excess of the number required by 121.391(a); and
(2) Cabin Crew provided by the certificate holder when cabin crew are not required by 121.391(a).

(b) A qualifying Cabin Crew who is receiving operating experience on an aircraft in operations as provided in Subpart (O),121.435(e) of this part must be identified to passengers as a qualifying Cabin Crew.

121.393 Crewmember requirements at stops where passengers remain on board

At stops where passengers remain on board, the certificate holder must meet the following requirements:

(a) On each aircraft for which a cabin crew is not required by Part 121.391(a), the certificate holder must ensure that a person who is qualified in the emergency evacuation procedures for the aircraft, as required in section 121.417, and who is identified to the passengers, remains:
(1) On board the aircraft; or
(2) Nearby the aircraft, in a position to adequately monitor passenger safety, and
(3) The aircraft engines are shut down; and
(4) At least one floor level exit remains open to provide for the deplaning of passengers.

(b) On each aircraft for which cabin crew are required by section 121.391(a), but the number of cabin crew remaining on board is fewer than required by section 121.391(a), the certificate holder must meet the following requirements:
(1) The aircraft engines are shut down;
(2) At least one floor level exit remains open to provide for the deplaning of passengers; and
(3) The number of cabin crew on board is at least half the number required by 121.391(a), rounded down to the next lower number in the case of fractions, but never less than one.

(c) The certificate holder may substitute for the required cabin crews other persons qualified in the emergency evacuation procedures for that aircraft as required in section 121.417, if these persons are identified to the passengers.

(d) If only one cabin crew or another qualified person is on board during a stop, that cabin crew or other qualified person shall be located in accordance with the certificate holder's ECAA accepted operating procedures. If more than one cabin crew or other qualified person is on board, the cabin crew or other qualified persons shall be spaced throughout the cabin to provide the most effective assistance for the evacuation in case of an emergency.

121.395 Aircraft dispatcher

Each certificate holder conducting domestic or international operations shall provide enough qualified aircraft dispatchers at each dispatch center to ensure proper operational control of each flight.

(a) A flight operations officer/flight dispatcher in conjunction with a method of control and supervision of flight operations in accordance with 121.27 shall:
  (1) Assist the pilot-in-command in flight preparation and provide the relevant information;
  (2) Assist the pilot-in-command in preparing the operational and ATS flight plans, sign when applicable and file the ATS flight plan with the appropriate ATS unit;
  (3) Furnish the pilot-in-command while in flight, by appropriate means, with information which may be necessary for the safe conduct of the flight.

(b) In the event of an emergency, a flight operations officer/flight dispatcher shall:
  (1) Initiate such procedures as outlined in the operations manual while avoiding taking any action that would conflict with ATC procedures; and
  (2) Convey safety-related information to the pilot-in-command that may be necessary for the safe conduct of the flight, including information related to any amendments to the flight plan that become necessary in the course of the flight.

121.397 Emergency and emergency evacuation duties

(a) Each certificate holder shall, for each type and model of aircraft, assigned to each category of required crewmember, as appropriate, establish the necessary functions to be performed in an emergency or a situation requiring emergency evacuation. The certificate holder shall show those functions are realistic, can be practically accomplished, and will meet any reasonably anticipated emergency including the possible incapacitation of individual crewmembers or their inability to reach the passenger cabin because of shifting cargo in combination cargo/passenger aircraft.

(b) The certificate holder shall describe in its manual the functions of each category of required crewmembers under paragraph (a) of this section.

SUBPART N
Training Program

121. 400 Applicability and terms used

(a) This subpart prescribes the requirements applicable to each certificate holder for establishing and maintaining a training program for crewmembers, aircraft dispatchers, other operations personnel, and for the approval and use of training devices in the conduct of the program.

(b) For the purpose of this subpart, aircraft groups are as follows:
The aircraft are divided into four groups:

(1) Group (I):
All single engine aircraft of which the maximum total weight does not exceed 5700 kg's (12500 lbs).

(2) Group (II):
All aircraft having two or more engines of which the maximum total weight authorized does not exceed 5700 kg's (12500 lbs).

(3) Group (IIIP):
All aircraft of which the maximum total weight authorized exceeds 5700 kg's (12,500 lbs) that are propeller or turbo-propeller driven including reciprocating and turbo-propeller powered; and

(4) Group (IIIJ):
All aircraft of which the maximum total weight authorized exceeds 5700 kg's (12,500 lbs) and the aircraft are turbo-jet powered.

(c) For the purpose of this subpart, the terms and definitions listed in the Pilot Experience and Training Standards (ECATSH) will apply, in addition to the following terms and definitions apply:

(1) Initial training. The training required for crewmembers and dispatchers who have not qualified and served in the same capacity on another airplane of the same group.

(2) Transition training. The training required for crewmembers and dispatchers who have qualified and served in the same capacity on another airplane of the same group.

(3) Upgrade training. The training required for crewmembers who have qualified and served as second in command or flight engineer on a particular airplane type, before they serve as pilot in command or second in command, respectively, on that airplane.

(4) Differences training. The training required for crewmembers and dispatchers who have qualified and served on a particular type airplane, when the Administrator finds differences training is necessary before a crewmember serves in the same capacity on a particular variation of that airplane.

(5) Programmed hours. The hours of training prescribed in this subpart which may be reduced by the Administrator upon a showing by the certificate holder that circumstances justify a lesser amount.

(6) Inflight. Refers to maneuvers, procedures, or functions that must be conducted in the airplane.

(7) Training center. An organization governed by the applicable requirements of part 142 of this chapter that provides training, testing, and checking under contract or other arrangement to certificate holders subject to the requirements of this part.

(8) Requalification training. The training required for crewmembers previously trained and qualified, but who have become unqualified due to not having met within the required period the recurrent training requirements of 121.427 or the proficiency check requirements of 121.441.

(9) Related aircraft. Any two or more aircraft of the same make with either the same or different type certificates that have been demonstrated and determined by the Administrator to have commonality to the extent that credit between those aircraft may be applied for flightcrew member training, checking, recent experience, operating experience, operating cycles, and line operating flight time for consolidation of knowledge and skills.

(10) Related aircraft differences training. The flightcrew member training required for aircraft with different type certificates that have been designated as related by the Administrator.

(11) Base aircraft. An aircraft identified by a certificate holder for use as a reference to compare differences with another aircraft.

121.401 Training program: General

(a) Each certificate holder shall:

(1) Establish, obtain the appropriate initial and final approval of, and provide, a training program that meets the requirements of this subpart and appendices E and F of this

part that ensures that each crewmember, aircraft dispatcher, flight instructor and check airman, is adequately trained to perform his or her assigned duties;

(2) Provide adequate ground and flight training facilities and properly qualified ground instructors for the training required by this subpart;

(3) Provide and keep current with respect to each aircraft type and, if applicable, particular variations within that aircraft type, appropriate training material, examinations, forms, instructions, and procedures for use in conducting the training and checks required by this Part**;** and

(4) Provide enough flight instructors, simulator instructors, and approved check airmen to conduct required flight training and flight checks, and simulator training courses permitted under this Part**.**

(b) A crewmember or aircraft dispatcher required to complete recurrent training must complete the check or the training in the calendar month before or after the calendar month in which that training or check is required, he is considered to have taken or completed it in the calendar month in which it was required.

(c) Each approved check airman, instructor or examiner who is responsible for a particular ground training subject, segment of flight training, course of training subject, course of training, flight check, or competence check under this Part shall certify as to the proficiency and knowledge of the crewmember, flight instructor, or dispatcher upon completion of that training or check. That certification shall be made a part of that person's official training record. When the certification required by this paragraph is made by an entry in a computerized record keeping system, the certifying approved check airman, instructor or examiner must be identified with that entry by a method approved by the ECAA. However, the signature of the certifying approved check airman, instructor or examiner is required for all other record keeping systems.

(d) Training subjects that are applicable to more than one aircraft or crewmember position and that have been satisfactorily completed in prior training for another aircraft or another crewmember position, need not be repeated during subsequent training other than recurrent training.

(e) A person who progresses successfully through flight training, is recommended by his instructor or a check airman, and successfully completes the appropriate flight check for a designated examiner or check airman, need not complete the programmed hours of flight training for the particular aircraft, provided this reduction in training is applied for and approved by the ECAA.

(f) Flight crew member training programmers (Aeroplane)

An operator shall establish and maintain a ground and flight training programme, approved by the ECAA., which ensures that all flight crew members are adequately trained to perform their assigned duties. The training programme shall:

(1) Include ground and flight training facilities and properly qualified instructors as determined by ECAA;

(2) Consist of ground and flight training for the type(s) of aeroplane on which the flight crew member serves;

(3) Include proper flight crew coordination and training for all types of emergency and abnormal situations or procedures caused by engine, airframe or systems malfunctions, fire or other abnormalities;

(4) Include upset prevention and recovery training;

(5) Include training in knowledge and skills related to the visual and instrument flight procedures for the intended area of operation, human performance and threat and error management, the transport of dangerous goods;

(6) Ensure that all flight crew members know the functions for which they are responsible and the relation of these functions to the functions of other crew members, particularly in regard to abnormal or emergency procedures; and

(7) Be given on a recurrent basis, as determined by ECAA and shall include an assessment of competence.

Note 1.— The in-flight simulation of emergency or abnormal situations when passengers or cargo are being carried is prohibited in accordance with ECAR 121.406.

Note 2.— Flight training may, to the extent deemed appropriate by ECAA, be given in flight simulation training devices approved by the ECAA for that purpose.

Note 3.— The scope of the recurrent training may be varied and need not be as extensive as the initial training given in a particular type of aeroplane.

Note 4.— The use of correspondence courses and written examinations as well as other means may, to the extent deemed feasible by the ECAA, be utilized in meeting the requirements for periodic ground training.

Note 5.— Guidance material to design training programmes to develop knowledge and skills in human performance can be found in the Human Factors Training Manual (ICAO-Doc 9683).

Note 6.— Information for pilots and flight operations personnel on flight procedure parameters and operational procedures is contained in PANS-OPS (ICAO-Doc 8168), Volume I. Criteria for the construction of visual and instrument flight procedures are contained in PANS-OPS (Doc 8168), Volume II. Obstacle clearance criteria and procedures used in certain States may differ from PANS-OPS, and knowledge of these differences is important for safety reasons.

Note 7.— Guidance material to design flight crew training programmes can be found in the Manual of Evidence-based Training (ICAO-Doc 9995).

Note 8.— Guidance material on the different means used to assess competence can be found in the Attachment to Chapter 2 of the Procedures for Air Navigation Services — Training (PANS-TRG, Doc 9868).

Note 9.— Procedures for upset prevention and recovery training in a flight simulation training device are contained in the Procedures for Air Navigation Services — Training (PANS-TRG, ICAO-Doc 9868).

Note 10.— Guidance on upset prevention and recovery training in a flight simulation training device is contained in the Manual on Aeroplane Upset Prevention and Recovery Training (ICAO-Doc 10011).

(g) Flight crew member training programmers (Helicopter)

An operator shall establish and maintain a ground and flight training programme, approved by the ECAA., which ensures that all flight crew members are adequately trained to perform their assigned duties. The training programme shall:

(1) Include ground and flight training facilities and properly qualified instructors as determined by ECAA;

(2) Consist of ground and flight training for the type(s) of helicopter on which the flight crew member serves;

(3) Include proper flight crew coordination and training for all types of emergency and abnormal situations or procedures caused by power plant, transmission, rotor, airframe or systems malfunctions, fire or other abnormalities;

(4) Include training in knowledge and skills related to the visual and instrument flight procedures for the intended area of operation, human performance and threat and error management, the transport of dangerous goods and, where applicable, procedures specific to the environment in which the helicopter is to be operated;

(5) Ensure that all flight crew members know the functions for which they are responsible and the relation of these functions to the functions of other crew members, particularly in regard to abnormal or emergency procedures; and

(6) Be given on a recurrent basis, as determined by ECAA and shall include an assessment of competence.

Note 1.— The in-flight simulation of emergency or abnormal situations when passengers or cargo are being carried is prohibited in accordance with ECAR 121.406.

Note 2.— Flight training may, to the extent deemed appropriate by ECAA, be given in flight simulation training devices approved by the ECAA for that purpose.

Note 3.— The scope of the recurrent training may be varied and need not be as extensive as the initial training given in a particular type of helicopter.

Note 4.— The use of correspondence courses and written examinations as well as other means may, to the extent deemed feasible by the ECAA, be utilized in meeting the requirements for periodic ground training.

Note 5.— Guidance material to design training programmes to develop knowledge and skills in human performance can be found in the Human Factors Training Manual (ICAO-Doc 9683).

Note 6.— Information for pilots and flight operations personnel on flight procedure parameters and operational procedures is contained in PANS-OPS (ICAO-Doc 8168), Volume I. Criteria for the construction of visual and instrument flight procedures are contained in PANS-OPS (Doc 8168), Volume II. Obstacle clearance criteria and procedures used in certain States may differ from PANS-OPS, and knowledge of these differences is important for safety reasons.

Note 7.— Guidance material to design flight crew training programmes can be found in the Manual of Evidence-based Training (ICAO-Doc 9995).

Note 8.— Guidance material on the different means used to assess competence can be found in the Attachment to Chapter 2 of the Procedures for Air Navigation Services — Training (PANS-TRG, Doc 9868).

Note 9.— Procedures for upset prevention and recovery training in a flight simulation training device are contained in the Procedures for Air Navigation Services — Training (PANS-TRG, ICAO-Doc 9868).

Note 10.— Guidance on upset prevention and recovery training in a flight simulation training device is contained in the Manual on Aeroplane Upset Prevention and Recovery Training (ICAO-Doc 10011).

(h) Establishment of Training Programmes for Operators with no operational approval to transport dangerous goods as cargo:

The operators not approved to transport dangerous goods have to establish a dangerous goods training programme that meets the requirements of Annex 18, the applicable requirements of the Technical Instructions, Part 1, Chapter 4, and the requirements of the ECAR, as appropriate. Details of the dangerous goods training programme shall be included in the operator's operations manuals;

(i) Establishment of Training Programmes

Operators transporting dangerous goods as cargo

ECAA shall approve the transport of dangerous goods and ensure that the operator:

(1) Dangerous goods training programmes shall be established and updated as provided for in the Technical Instructions. Details of the dangerous goods training programme shall be included in the operator's operations manuals;

(2) Establishes dangerous goods policies and procedures in its operations manual to meet, at a minimum, the requirements of Annex 18, the Technical Instructions and the ECARs to enable operator personnel to:

(i) Identify and reject undeclared or misdeclared dangerous goods, including COMAT classified as dangerous goods;

(ii) Report to the appropriate authorities of Egypt and the State in which it occurred any:

(A) Occasions when undeclared or misdeclared dangerous goods are discovered in cargo or mail; and

(B) Dangerous goods accidents and incidents;

(C) Report to the appropriate authorities of Egypt and the State of Origin any occasions when dangerous goods are discovered to have been carried;

(D) When not loaded, segregated, separated or secured in accordance with the Technical Instructions, Part 7, Chapter 2; and

(E) Without information having been provided to the pilot-in-command;

(F) Accept, handle, store, transport, load and unload dangerous goods, including COMAT classified as dangerous goods as cargo on board an aircraft; and

(G) Provide the pilot-in-command with accurate and legible written or printed information concerning dangerous goods that are to be carried as cargo.

121.402 Training program: Special rules

(a) Other than the certificate holder, only a training center certificated under Part 142 is eligible under this subpart to provide flight training, testing, and checking under contract or other arrangement to those persons subject to the requirements of this subpart.

(b) A certificate holder may contract with, or otherwise arrange to use the services of, a training center certificated under Part 142 to provide training, testing, and checking required by this Part only if the training center:

(1) Holds applicable training specifications issued under Part 142;

(2) Has facilities, training equipment, and courseware meeting the applicable requirements of Part 142;

(3) Has approved curriculums, curriculum segments, and portions of curriculum segments applicable for use in training courses required by this subpart; and

(4) Has sufficient approved check airmen, instructors and examiners qualified under the applicable requirements of Part 121.411 or 121.413, to provide training, testing, and checking to persons subject to the requirements of this subpart.

121.403 Training program: Curriculum

(a) Each certificate holder must prepare and maintain current an approved training program curriculum for each type of aircraft with respect to dispatchers and each crewmember required for that type aircraft. The curriculum must include all ground and flight training required by this subpart.

(b) Each approved training program curriculum must include:

(1) A list of principal ground training subjects, including emergency training subjects and training in human factors for all crew members and dispatchers including appropriate resource management training required;

(2) A list of all the training devices, mockups, systems trainers, procedures trainers, or other training aids that the certificate holder will use;

(3) Detailed descriptions or pictorial displays of the approved normal, abnormal, and emergency maneuvers, procedures and functions that will be performed during each flight training phase or flight check, indicating those maneuvers, procedures and functions that are to be performed during the in-flight portions of flight training and flight checks;

(4) A list of aircraft simulators or other training devices approved under 121.407, including approvals for the training programs to be conducted in the simulators/training devices and for any other particular maneuvers, procedures, or functions; and

(5) The approved programmed hours of training that will be applied to each phase of training.

Note: Refer to EAC 00-10 for human factor minimum requirements.

121.404 Crew and dispatcher resource management training

No certificate holder may use a person as a flight crewmember, and no certificate holder may use a person as a cabin crew or aircraft dispatcher unless that person has completed approved crew resource management (CRM) or dispatcher resource management (DRM) initial training, as applicable, with that certificate holder or with another certificate holder.

121.405 Training program and revision: Initial and final approval

(a) To obtain initial and final approval of a training program, or a revision to an approved training program, each certificate holder must submit to the ECAA:

(1) An outline of the proposed program or revision, including an outline of the proposed or revised curriculum, that provides enough information for a preliminary evaluation of the proposed training program or revised training program; and

(2) Additional relevant information as may be requested by the ECAA.

(b) If the proposed training program or revision complies with this subpart the ECAA grants initial approval in writing after which the certificate holder may conduct the training in accordance with that program. The ECAA then evaluates the effectiveness of the training program and advises the certificate holder of deficiencies, if any, that must be corrected.

(c) The ECAA grants final approval of the training program or revision if the certificate holder shows that the training conducted under the initial approval set forth in paragraph (b) of this section ensures that each person that successfully completes the training is adequately trained to perform his assigned duties.

(d) In granting initial and final approval of training programs or revisions, including reductions in programmed hours specified in this subpart, the ECAA considers the training aids, devices, methods, and procedures listed in the certificate holder's approved training program as set forth in 121.403 that enhance the quality and effectiveness of the training process.

121.406 In-flight simulation of emergencies

Emergency and abnormal situations will not be simulated during flight when passengers or cargo are on-board the aircraft.

121.407 Training program: Approval of aircraft simulators and other training devices

(a) Each aircraft simulator and other training device that is used in a training course permitted under this subpart, or in checks required under subpart O of this Part or as required in appendices E and F to this Part must:
  (1) Be specifically approved for:
    (i) The certificate holder;
    (ii) The type aircraft and, if applicable, the particular variation within type, for which the training or check is being conducted; and
    (iii) The particular maneuver, procedure, or crewmember function involved.
  (2) Maintain the performance, functional, and other characteristics that are required for approval;
  (3) Be modified to conform with any modification to the aircraft being simulated that results in changes to performance, functional, or other characteristics required for approval;
  (4) Be given a daily functional preflight check before being used; and
  (5) Have a daily discrepancy log kept with each discrepancy entered in that log by the appropriate instructor or check airman at the end of each training or check flight.

(b) A particular aircraft simulator or other training device may be approved for use by more than one certificate holder.

(c) An aircraft simulator may be used instead of the aircraft to satisfy the in-flight requirements of 121.439, and121.441 and appendices E and F of this Part, if the simulator:
  (1) Is approved under this section and meets the appropriate simulator requirements of appendix H and EAC 121-1 of this Part; and
  (2) Is used as part of an approved program that meets the training requirements of this subpart and appendix H of this Part.

(d) An aircraft simulator approved under this section must be used instead of the aircraft to satisfy the pilot flight training requirements prescribed in the certificate holder's approved low altitude windshear flight training program set forth in 121.409 (d) of this part.

(e) An aircraft simulator approved under this section must be used instead of the aircraft to satisfy the pilot flight training requirements prescribed in the extended envelope training set forth in 121.423 of this part. Compliance with this paragraph is required no later than March 12, 2019.

121.408 Training equipment other than flight simulation training devices.

(a) The ECAA must approve training equipment used in a training program approved under this part and that functionally replicates aircraft equipment for the certificate holder and the crewmember duty or procedure.

(b) The certificate holder must demonstrate that the training equipment described in paragraph (a) of this section, used to meet the training requirements of this subpart, meets all of the following:
  (1) The form, fit, function, and weight, as appropriate, of the aircraft equipment.
  (2) Replicates the normal operation (and abnormal and emergency operation, if appropriate) of the aircraft equipment including the following:
    (i) The required force, actions and travel of the aircraft equipment.
    (ii) Variations in aircraft equipment operated by the certificate holder, if applicable.

(3) Replicates the operation of the aircraft equipment under adverse conditions, if appropriate.

(c) Training equipment must be modified to ensure that it maintains the performance and function of the aircraft type or aircraft equipment replicated.

(d) All training equipment must have a record of discrepancies. The documenting system must be readily available for review by each instructor, check airman or supervisor, prior to conducting training or checking with that equipment.

(1) Each instructor, check airman or supervisor conducting training or checking, and each person conducting an inspection of the equipment who discovers a discrepancy, including any missing, malfunctioning or inoperative components, must record a description of that discrepancy and the date that the discrepancy was identified.

(2) All corrections to discrepancies must be recorded when the corrections are made. This record must include the date of the correction.

(3) A record of a discrepancy must be maintained for at least 60 days.

(e) No person may use, allow the use of, or offer the use of training equipment with a missing, malfunctioning, or inoperative component to meet the crewmember training or checking requirements of this chapter for tasks that require the use of the correctly operating component.

(f) Compliance with this section is required no later than March 12, 2019.

121.409 Training courses using aircraft simulators and other training devices

(a) Training courses utilizing aircraft simulators and other training devices may be included in the certificate holder's approved training program for use as provided in this section.

(b) A course of training in an aircraft simulator may be included for use as provided in 121.441 of this Part if that course:

(1) For helicopters provides at least 2 hours of training at the pilot controls (pilot flying) of an aircraft simulator as well as a proper briefing before and after the training;

(2) For airplanes provides at least 4 hours of training at the pilot controls (pilot flying) of an aircraft simulator as well as a proper briefing before and after the training;

(3) Provides training and a proficiency check in at least the following:-

(i) The procedures and maneuvers set forth in appendix F of this Part; or

(ii) Line-oriented flight training (LOFT) that—

(A) Before March 12, 2019,

(1) Utilizes a complete flight crew;

(2) Includes at least the maneuvers and procedures (abnormal and emergency) that may be expected in line operations; and

(3) Is representative of the flight segment appropriate to the operations being conducted by the certificate holder.

(B) Beginning on March 12, 2019—

(*1*) Utilizes a complete flight crew;

(*2*) Includes at least the maneuvers and procedures (abnormal and emergency) that may be expected in line operations;

(*3*) Includes scenario-based or maneuver-based stall prevention training before, during or after the LOFT scenario for each pilot;

(*4*) Is representative of two flight segments appropriate to the operations being conducted by the certificate holder; and

(*5*) Provides an opportunity to demonstrate workload management and pilot monitoring skills.

(4) Is given by at least an instructor who meets the applicable requirements of 121.412. The satisfactory completion of the course of training must be certified by either the ECAA or a qualified check airman.

(c) The programmed hours of flight training set forth in this subpart do not apply if the training program for the airplane type includes:

(1) A course of pilot training in an airplane simulator as provided in 121.424 (d); or

(2) A course of flight engineer training in an airplane simulator or other training device as provided in 121.425 (c).

(d) Each certificate holder required to comply with the requirements of 121.358 this part must use an approved simulator for each aircraft type in each of its pilot training courses that

provides training in at least the procedures and maneuvers set forth in the certificate holder's approved low-altitude windshear flight training program. The approved low-altitude windshear flight training, if applicable, must be included in each of the pilot flight training courses prescribed in 121.409(b) 121.418, 121.424, and 121.427 of this subpart.

121.410 Training requirements for the use of head-up displays (HUD) and enhanced vision systems (EVS)

Refer to ECAR Part 91Appendix K for instructions and training requirements for the use of head-up displays (HUD) and enhanced vision systems (EVS) equipment as applicable.

121.411 Qualifications: Check airman (aircraft) and check airman (simulator)

(a) For the purposes of this section and 121.413:

(1) A check airman (aircraft) is a person who is qualified, and permitted, to conduct flight checks or instruction in an aircraft, in a flight simulator, or in a flight training device for a particular type aircraft.

(2) A check airman (simulator) is a person who is qualified to conduct flight checks or instruction, but only in a flight simulator or in a flight training device for a particular type aircraft.

(3) Check airman (aircraft), and check airman (simulator) are those check airman who perform the functions described in 121.400(a) and 121.401(a)(4) and (c).

NOTE:

(i) Flight instructor is not required to hold an ECAA Flight Instructor Certificate issued under ECAR Part 61 when instructing in ECAR Part 121 training programs

(ii) The ECAA licencing authority shall renew Flight instructor rating endorsed on the applicant licence when he or she hold an ECAA check airman designation issued under this part or pilot examiner designation issued under ECAR part 183.

(b) No certificate holder may use a person nor may any person serve as a check airman (aircraft) in a training program established under this subpart unless, with respect to the aircraft type involved, that person:

(1) Holds the licenses and ratings required to serve as a pilot in command or flight engineer, as applicable, in operations under this Part;

(2) Has satisfactorily completed the appropriate training phases for the airplane, including recurrent training, that are required to serve as a pilot in command or flight engineer, as applicable, in operations under this Part;

(3) Has satisfactorily completed the appropriate proficiency or flight checks that are required to serve as a pilot in command or flight engineer, as applicable, in operations under this Part;

(4) Has satisfactorily completed the applicable training requirements of 121.413; including in-flight training and practice for initial and transition training;

(5) Holds a Class 1 medical certificate;

(6) Has satisfied the recency of experience requirements of 121.439 of this part, as applicable; and

(7) Has been approved by the ECAA for the check airman duties involved.

(c) No certificate holder may use a person nor may any person serve as a check airman (simulator) in a training program established under this subpart unless, with respect to the airplane type involved, that person meets the provisions of paragraph (b) of this section, or—

(1) Holds the airman certificates and ratings, except medical certificate, required to serve as a pilot in command or a flight engineer, as applicable, in operations under this part;

(2) Has satisfactorily completed the appropriate training phases for the airplane, including recurrent training, that are required to serve as a pilot in command or flight engineer, as applicable, in operations under this part;

(3) Has satisfactorily completed the appropriate proficiency or flight checks that are required to serve as a pilot in command or flight engineer, as applicable, in operations under this part;

(4) Has satisfactorily completed the applicable training requirements of 121.413; and

(5) Has been approved by the ECAA for the check airman (simulator) duties involved.

(d) Completion of the requirements in paragraphs (b) (2), (3), and (4) or (c) (2), (3), and (4) of this section, as applicable, shall be entered in the individual's training record maintained by the certificate holder.

(e) Check airman who have reached their 65th birthday or who do not hold an appropriate medical certificate may function as check airman, but may not serve as pilot flightcrew members in operations under this part.

(f) A check airman (simulator) must accomplish the following—

(1) Fly at least two flight segments as a required crewmember for the type airplane involved within the 12-month period preceding the performance of any check airman duty in a flight simulator; or

(2) Satisfactorily complete an approved line-observation program within the period prescribed by that program and that must precede the performance of any check airman duty in a flight simulator.

(g) The flight segments or line-observation program required in paragraph (f) of this section are considered to be completed in the month required if completed in the calendar month before or in the calendar month after the month in which it is due.

121.412 Qualifications: Flight instructors (aircraft) flight instructors (simulator)

(a) For the purposes of this section and section 121.414:

(1) A flight instructor (aircraft) is a person who is qualified to instruct in an airplane, in an FFS, or in a flight training device for a particular type airplane.

(2) A flight instructor (simulator) is a person who is qualified to instruct, but only in a flight simulator, in a flight training device, or both, for a particular type aircraft.

(3) Flight instructors (aircraft), and flight instructors (simulator) are those instructors who perform the functions described in121.400(a) and 121.401(a)(4) and (c).

NOTE: (i) Flight instructor is not required to hold an ECAA Flight Instructor Certificate issued under ECAR Part 61 when instructing in ECAR Part 121 training programs

(ii) The ECAA licencing authority shall renew Flight instructor rating endorsed on the applicant licence when he or she hold an ECAA checkairmen designation issued under this part or pilot examiner designation issued under ECAR part 183.

(b) No certificate holder may use a person nor may any person serve as a flight instructor (aircraft) in a training program established under this subpart unless, with respect to the aircraft type involved, that person:

(1) Holds the licences and ratings required to serve as a pilot in command or a flight engineer, as applicable, in operations under this Part;

(2) Has satisfactorily completed the appropriate training phases for the aircraft, including recurrent training, that are required to serve as a pilot in command or flight engineer as applicable, in operations under this Part;

(3) Has satisfactorily completed the appropriate proficiency or flight checks that are required to serve as a pilot in command or flight engineer as applicable, in operations under this Part;

(4) Has satisfactorily completed the applicable training requirements of 121.414. including inflight training and practice for initial and transition training;

(5) Holds a Class I medical certificate; and

(6) Has satisfied the recency of experience requirements of 121.439 of this subpart, as applicable; and

(7) The applicant for a flight instructor aircraft/simulator rating must have a total flight time of at least 1000 hours as pilot in command or flight engineer.
In addition; flight instructor (airplane) must have a total flight time of at least 300 hours as pilot in command on type.
Note: The privilege of flight instructor shall be extended to further variants.

(c) No certificate holder may use a person, nor may any person serve as a flight instructor (simulator) in a training program established under this subpart, unless, with respect to the airplane type involved, that person meets the provisions of paragraph (b) of this section, or—
(1) Holds the airman certificates and ratings, except medical certificate, required to serve as a pilot in command or flight engineer, as applicable, in operations under this part;
(2) Has satisfactorily completed the appropriate training phases for the airplane, including recurrent training, that are required to serve as a pilot in command or flight engineer, as applicable, in operations under this part;
(3) Has satisfactorily completed the appropriate proficiency or flight checks that are required to serve as a pilot in command or flight engineer, as applicable, in operations under this part; and
(4) Has satisfactorily completed the applicable training requirements of § 121.414.

(d) Completion of the requirements in paragraphs (b) (2), (3), and (4) or (c) (2), (3), and (4) of this section as applicable shall be entered in the individual's training record maintained by the certificate holder.

(e) Flight instructors who have reached their 65th birthday or who do not hold an appropriate medical certificate may function as flight instructors, but may not serve as pilot flightcrew members in operations under this part.

(f) A flight instructor (simulator) must accomplish the following—
(1) Fly at least two flight segments as a required crewmember for the type of airplane within the 12-month period preceding the performance of any flight instructor duty in an FFS (and must hold a Class I medical certificate as appropriate); or
(2) Satisfactorily complete an approved line-observation program within the period prescribed by that program preceding the performance of any flight instructor duty in an FFS.

(g) The flight segments or line-observation program required in paragraph (f) of this section is considered completed in the month required if completed in the calendar month before, or the calendar month after the month in which it is due.

Note: Requirements for Pilot, flight engineer and cabin crew examiners are contained in ECAR Part 183.23

121.413 Initial, transition and recurrent training and checking requirements: Check airman (aircraft), check airman (simulator)

(a) No certificate holder may use a person nor may any person serve as a check airman unless:
(1) That person has satisfactorily completed initial or transition check airman training; and
(2) Within the preceding 24 calendar months that person satisfactorily conducts a check or supervises operating experience under the observation of an ECAA inspector or a designated examiner employed by the operator. The observation check may be accomplished in part or in full in an aircraft or in a flight simulator, or in a flight training device.

(b) The observation check required by paragraph (a)(2) of this section is considered to have been completed in the month required if completed in the calendar month before, or the calendar month after, the month in which it is due.

(c) The initial ground training for check airmen must include the following:
  (1) Check airman duties, functions, and responsibilities;
  (2) The applicable ECAR Part and the certificate holder's policies and procedures;
  (3) The appropriate methods, procedures and techniques for conducting the required checks;
  (4) Proper evaluation of student performance including the detection of:
    (i) Improper and insufficient training; and
    (ii) Personal characteristics of an applicant that could adversely affect safety.
  (5) The appropriate corrective action in the case of unsatisfactory checks;
  (6) The approved methods, procedures, and limitations for performing the required normal, abnormal, and emergency procedures in the aircraft; and
  (7) For check airmen who conduct training or checking in a flight simulator or a flight training device, the following subjects specific to the device(s) for the airplane type:
    (i) Proper operation of the controls and systems;
    (ii) Proper operation of environmental and fault panels;
    (iii) Data and motion limitations of simulation; and
    (iv) The minimum airplane simulator equipment required by APPENDIX H of this part, for each maneuver and procedure completed in a flight simulator or a flight training device.

(d) The transition ground training for check airmen must include the following: -
  (1) The approved methods, procedures, and limitations for performing the required normal, abnormal, and emergency procedures applicable to the airplane to which the check airman is transitioning.
  (2) For check airmen who conduct training or checking in a flight simulator or a flight training device, the following subjects specific to the device(s) for the airplane type to which the check airman is transitioning:
    (i) Proper operation of the controls and systems;
    (ii) Proper operation of environmental and fault panels;
    (iii) Data and motion limitations of simulation; and
    (iv) The minimum airplane simulator equipment required by APPENDIX H of this part, for each maneuver and procedure completed in a flight simulator or a flight training device.

(e) The initial and transition flight training for pilot check airman (aircraft), must include the following:
  (1) The safety measures for emergency situations that are likely to develop during a check;
  (2) The potential results of improper, untimely or non-execution of safety measures during a check;
  (3) For pilot check airman (aircraft):
    (i) Training and practice in conducting flight checks from the left and right pilot seats in the required normal, abnormal, and emergency procedures to ensure competence to conduct the pilot flight checks required by this Part; and
    (ii) The safety measures to be taken from either pilot seat for emergency situations that are likely to develop during a check.
  (4) For flight engineer check airmen (aircraft), training to ensure competence to perform their assigned duties.

(f) The requirements of paragraph (e) of this section may be accomplished in full or in part in flight, in a flight simulator, or in a flight training device, as appropriate.

(g) The initial and transition flight training for check airman (simulator) must include the following:
  (1) Training and practice in conducting flight checks in the required normal, abnormal, and emergency procedures to ensure competence to conduct the flight checks required by this Part. This training and practice must be accomplished in a flight simulator or in a flight training device;
  (2) Training in the operation of flight simulators or flight training devices, or both, to ensure competence to conduct the flight checks required by this Part.

(h) Recurrent ground training for check airmen who conduct training or checking in a flight simulator or a flight training device must be completed every 12 calendar months and must include the subjects required in paragraph (c)(7) of this section.

121.414 Initial, transition and recurrent training and checking requirements: Flight instructors (aircraft), flight instructors (simulator) for Air carrier and Air Taxi operations.

(a) No certificate holder may use a person nor may any person serve as a flight instructor unless:
  (1) That person has satisfactorily completed initial or transition flight instructor training; and
  (2) Within the preceding 24 calendar months, that person satisfactorily conducts instruction under the observation of an ECAA inspector, an operator check airman, or designated examiner employed by the operator. The observation check must be accomplished in an aircraft, a flight simulator, or a flight training device as appropriate.

(b) The observation check required by paragraph (a)(2) of this section is considered to have been completed in the month required if completed in the calendar month before, or the calendar month after, the month in which it is due.

(c) The initial ground training for flight instructors must include the following:
  (1) Flight instructor duties, functions, and responsibilities;
  (2) The applicable ECAR Parts and the certificate holder's policies and procedures;
  (3) The appropriate methods, procedures, and techniques for conducting flight instruction;
  (4) Proper evaluation of student performance including the detection of:
    (i) Improper and insufficient training; and
    (ii) Personal characteristics of an applicant that could adversely affect safety.
  (5) The corrective action in the case of unsatisfactory training progress;
  (6) The approved methods, procedures, and limitations for performing the required normal, abnormal, and emergency procedures in the aircraft;
  (7) Except for holders of a flight instructor certificate:
    (i) The fundamental principles of the teaching-learning process;
    (ii) Teaching methods and procedures; and
    (iii) The instructor-student relationship; and
  (8) For flight instructors who conduct training in a flight simulator or a flight training device, the following subjects specific to the device(s) for the airplane type:
    (i) Proper operation of the controls and systems;
    (ii) Proper operation of environmental and fault panels;
    (iii) Data and motion limitations of simulation; and
    (iv) The minimum airplane simulator equipment required by APPENDIX H of this part, for each maneuver and procedure completed in a flight simulator or a flight training device.

(d) The transition ground training for flight instructors must include the following: -
  (1) The approved methods, procedures, and limitations for performing the required normal, abnormal, and emergency procedures applicable to the airplane to which the flight instructor is transitioning.
  (2) For flight instructors who conduct training in a flight simulator or a flight training device, the following subjects specific to the device(s) for the airplane type to which the flight instructor is transitioning:
    (i) Proper operation of the controls and systems;
    (ii) Proper operation of environmental and fault panels;
    (iii) Data and motion limitations of simulation; and

(iv) The minimum airplane simulator equipment required by APPENDIX H of this part, for each maneuver and procedure completed in a flight simulator or a flight training device.

(e) The initial and transition flight training for flight instructor (Aircraft) and flight engineer instructor (Aircraft) must include the following:

(1) The safety measures for emergency situations that are likely to develop during instruction;

(2) The potential results of improper, untimely or non-execution of safety measures during instruction;

(3) For pilot flight instructor (Aircraft), the following must be accomplished in full or in part, in a flight simulator, or in a flight training device, as appropriate, for at least 2 hours under the supervision of a designated pilot examiner; and in addition be observed by an ECAA inspector:

(i) Training and practice in conducting flight instruction from the left and right pilot seats in the required normal, abnormal, and emergency procedures to ensure competence as an instructor for at least 2 sectors from each seat; and

(ii) The safety measures to be taken from either pilot seat for emergency situations that are likely to develop during instruction; and

(4) For flight engineer instructors (aircraft), inflight training to ensure competence to perform assigned duties.

(f) The initial and transition flight training for flight instructors (simulator) must include the following:

(1) Training and practice for at least 8 hours in the required normal, abnormal, and emergency procedures to ensure competence to conduct the flight instruction required by this part. This training and practice must be accomplished in full or in part in an FFS or in a flight training device observed by designated pilot examiner employed by the operator or ECAA inspector.

(2) Training in the operation of FFSs or flight training devices, or both, to ensure competence to conduct the flight instruction required by this part observed by designated pilot examiner employed by the operator or ECAA inspector.

(g) Recurrent flight instructor ground training for flight instructors who conduct training in a flight simulator or a flight training device must be completed every 12 calendar months and must include the subjects required in paragraph (c)(8) of this section.

121.415 Crewmember and dispatcher training program requirements

(a) Each training program must provide the following ground training as appropriate to the particular assignment of the crewmember or dispatcher:

(1) Basic indoctrination ground training for newly hired crewmembers or dispatchers including 40 programmed hours of instruction, unless reduced under 121.405 to a minimum 20 programmed hours as specified in 121.401(d), in at least the following:

(i) Duties and responsibilities of crewmembers or dispatchers, as applicable;

(ii) Appropriate provisions of the Egyptian Civil Aviation Regulations;

(iii) Contents of the certificate holder's operating certificate and operations specifications (not required for cabin crew); and

(iv) Appropriate portions of the certificate holder's operating manual.

(2) The initial and transition ground training specified in 121.419, 121.421 and 121.422, as applicable.

(3) Emergency training for crewmembers as specified in 121.417 and 121.805; and

(4) Training for crewmembers and dispatchers in their roles and responsibilities in the certificate holder's passenger recovery plan, if applicable.

(b) Each training program must provide the flight training specified in 121.424 through 121.425, as applicable.

(c) Each training program must provide recurrent ground and flight training as provided in 121.427.

(d) Each training program must provide the differences training specified in 121.418(a) if the ECAA finds that, due to differences between airplane of the same type operated by the certificate holder, additional training is necessary to insure that each crewmember and dispatcher is adequately trained to perform their assigned duties.
(e) Upgrade training as specified in 121.419 and 121.424 for a particular type airplane may be included in the training program for crewmembers who have qualified and served as second-in-command pilot or flight engineer on that airplane.
(f) Particular subjects, maneuvers, procedures, or parts thereof specified in 121.419, 121.421, 121.422, 121.424 and 121.425 for transition or upgrade training, as applicable, may be omitted, or the programmed hours of ground instruction or inflight training may be reduced, as provided in 121.405.
(g) In addition to initial, transition, upgrade, recurrent and differences training, each training program must also provide ground and flight training, instruction, and practice as necessary to insure that each crewmember and dispatcher:
(1) Remains adequately trained and currently proficient with respect to each airplane, crewmember position, and type of operation in which he serves; and
(2) Qualifies in new equipment, facilities, procedures, and techniques, including modifications to airplane.

(h) Each training program must include a process to provide for the regular analysis of individual pilot performance to identify pilots with performance deficiencies during training and checking and multiple failures during checking.

(i) Each training program must include methods for remedial training and tracking of pilots identified in the analysis performed in accordance with paragraph (h) of this section.

(j) Compliance with paragraphs (h) and (i) of this section is required no later than March 12, 2019.

121.417 Crewmember emergency training

(a) Each training program must provide the emergency training set forth in this section with respect to each aircraft type, model, and configuration, each required crewmember, and each kind of operation conducted, insofar as appropriate for each crewmember of the certificate holder.
(b) Every year the emergency training must provide the following:
(1) Instruction in emergency assignments and procedures, including coordination among crewmembers;
(2) Individual instruction in the location, function, and operation of emergency equipment including:
(i) Equipment used in ditching and evacuation;
(ii) Reserved;
(iii) Portable fire extinguishers, with emphasis on type of extinguisher to be used on different classes of fires; and
(iv) Emergency exits in the emergency mode with the evacuation slide/raft pack attached (if applicable), with training emphasis on the operation of the exits under adverse conditions.
(3) Instruction in the handling of emergency situations including:
(i) Rapid decompression;
(ii) Fire in flight or on the surface, and smoke control procedures with emphasis on electrical equipment and related circuit breakers found in cabin areas including all galleys, service centers, lifts, lavatories and movie screens;
(iii) Ditching and other evacuation, including the evacuation of persons and their attendants, if any, who may need the assistance of another person to move expeditiously to an exit in the event of an emergency;
(iv) Reserved; and
(v) Hijacking and other unusual situations.
(4) Review and discussion of previous aircraft accidents and incidents pertaining to actual emergency situations.
(c) Each cabin crew member must accomplish the following emergency training during the specified training periods, using those items of installed emergency equipment for each type of airplane in which he or she is to serve (Alternate recurrent training required by 121.433(c) of this part may be accomplished by approved pictorial presentation or demonstration):

(1) One time emergency drill requirements to be accomplished during initial training. Each crewmember must perform:

(i) At least one approved protective breathing equipment (PBE) drill in which the crewmember combats an actual or simulated fire using at least one type of installed hand fire extinguisher or approved fire extinguisher that is appropriate for the type of actual fire or simulated fire to be fought while using the type of installed PBE required by section 121.337 or approved PBE simulation device as defined by paragraph (d) of this section for combatting fires aboard airplane;

(ii) At least one approved fire-fighting drill in which the Cabin Crew combats an actual fire using at least one type of installed hand fire extinguisher or approved fire extinguisher that is appropriate for the type of fire to be fought. This fire-fighting drill is not required if the Cabin Crew performs the PBE drill of paragraph(c)(1)(i) by combating an actual fire; and

(iii) An emergency evacuation drill with each person egressing the airplane or approved training device using at least one type of installed emergency evacuation slide. The Cabin Crew may either observe the airplane exits being opened in the emergency mode and the associated exit-slide/raft pack being deployed and inflated, or perform the tasks resulting in the accomplishment of these actions.

(2) Additional emergency drill requirements to be accomplished during initial training and once each 24 calendar months during recurrent training. Each Cabin crew must:

(i) Perform the following emergency drills and operate the following equipment:

(A) Each type of emergency exit in the normal and emergency modes, including the actions and forces required in the deployment of the emergency evacuation slides;

(B) Each type of installed hand fire extinguisher;

(C) Each type of emergency oxygen system to include protective breathing equipment;

(D) Donning, use, and inflation of individual flotation means, if applicable; and

(E) Ditching, if applicable, including but not limited to, as appropriate:

(1) Cockpit preparation and procedures;

(2) Crew coordination;

(3) Passenger briefing and cabin preparation;

(4) Donning and inflation of life preservers;

(5) Use of life lines; and

(6) Boarding of passengers and crew into a raft or a slide/raft pack.

(ii) Observe the following drills:

(A) Removal from the airplane (or training device) and inflation of each type of life raft, if applicable;

(B) Transfer of each type of slide/raft pack from one door to another;

(C) Deployment, inflation, and detachment from the airplane (or training device) of each type of slide/raft pack; and

(D) Emergency evacuation including the use of a slide.

(d) Each Flight crew member must accomplish the following emergency training during the specified training periods, using those items of installed emergency equipment for each type of airplane in which he or she is to serve (Alternate recurrent training required by 121.433(c) of this part may be accomplished by approved pictorial presentation or demonstration):

(1) One time emergency drill requirements to be accomplished during initial training. Each Flight crew member must perform:

(i) At least one approved protective breathing equipment (PBE) drill in which the Flight crew member combats an actual or simulated fire using at least one type of installed hand fire extinguisher or approved fire extinguisher that is appropriate

for the type of actual fire or simulated fire to be fought while using the type of installed PBE required by section 121.337 or approved PBE simulation device as defined by paragraph (d) of this section for combatting fires aboard airplane;

(ii) At least one approved fire-fighting drill in which the Flight crew member combats an actual fire using at least one type of installed hand fire extinguisher or approved fire extinguisher that is appropriate for the type of fire to be fought. This fire-fighting drill is not required if the Flight crew member performs the PBE drill of paragraph(d)(1)(i) by combating an actual fire; and

(iii) An emergency evacuation drill with each person egressing the airplane or approved training device using at least one type of installed emergency evacuation slide. The Flight crew member may either observe the airplane exits being opened in the emergency mode and the associated exit-slide/raft pack being deployed and inflated, or perform the tasks resulting in the accomplishment of these actions.

(2) Additional emergency drill requirements to be accomplished during initial training and once each 36 calendar months during recurrent training. Each Flight crew member must:

(i) Perform the following emergency drills and operate the following equipment:

(A) Each type of emergency exit in the normal and emergency modes, including the actions and forces required in the deployment of the emergency evacuation slides;

(B) Each type of installed hand fire extinguisher;

(C) Each type of emergency oxygen system to include protective breathing equipment;

(D) Donning, use, and inflation of individual flotation means, if applicable; and

(E) Ditching, if applicable, including but not limited to, as appropriate:

(1) Cockpit preparation and procedures;

(2) Crew coordination;

(3) Passenger briefing and cabin preparation;

(4) Donning and inflation of life preservers;

(5) Use of life lines; and

(6) Boarding of passengers and crew into a raft or a slide/raft pack.

(ii) Observe the following drills:

(A) Removal from the airplane (or training device) and inflation of each type of life raft, if applicable;

(B) Transfer of each type of slide/raft pack from one door to another;

(C) Deployment, inflation, and detachment from the airplane (or training device) of each type of slide/raft pack; and

(D) Emergency evacuation including the use of a slide

(e) Every 3 years the programme of crew member training should include the following:

(1) The successful resolution of aircraft emergencies requires interaction between flight crew and cabin crew and emphasis should be placed on the importance of effective coordination and two-way communication between all crew members in various emergency situations.

(2) Emergency and safety equipment training should include joint practice in aircraft evacuations so that all who are involved are aware of the duties other crew members should perform. When such practice is not possible, combined flight crew and cabin crew training should include joint discussion of emergency scenarios.

(f) No crewmember may serve in operations under this Part unless that crewmember has performed the PBE drill and the fire-fighting drill described by paragraphs (c)(1)(i),(c)(1)(ii) and (d)(1)(i),(d)(1)(ii) of this section, as part of a one-time training requirement of paragraphs (c)(1) or (c)(2) and (d)(1) or (d)(2) , as appropriate, of this section. Any crewmember who performs the PBE drill and the fire-fighting drill prescribed

in paragraphs (c)(1)(i),(c)(1)(ii) and (d)(1)(i),(d)(1)(ii) of this section, is deemed to be in compliance with this regulation upon presentation of information or documentation, in a form and manner acceptable to the ECAA, showing that the appropriate drills have been accomplished.

(g) Crewmembers who serve in operations above 25,000 feet must receive instruction in the following:
  (1) Respiration;
  (2) Hypoxia;
  (3) Duration of consciousness without supplemental oxygen at altitude;
  (4) Gas expansion;
  (5) Gas bubble formation; and
  (6) Physical phenomena and incidents of decompression.

(h) For the purposes of this section the following definitions apply:
  (1)"Actual fire" means an ignited combustible material, in controlled conditions, of sufficient magnitude and duration to accomplish the training objectives outlined in paragraphs(c)(1)(i),(c)(1)(ii) and (d)(1)(i) ,(d)(1)(ii) of this section;
  (2)"Approved fire extinguisher" means a training device that has been approved by the ECAA for use in meeting the training requirements of section 121.417(c);
  (3)"Approved PBE simulation device" means a training device that has been approved by the ECAA for use in meeting the training requirements of section 121.417(c);
  (4)"Combats" in this context, means to properly fight an actual or simulated fire using an appropriate type of fire extinguisher until that fire is extinguished.
  (5)"Observe" means to watch without participating actively in the drill;
  (6)"PBE drill" means an emergency drill in which a crewmember demonstrates the proper use of protective breathing equipment while fighting an actual or simulated fire;
  (7)"Perform" means to satisfactorily accomplish a prescribed emergency drill using established procedures that stress the skill of the persons involved in the drill; and
  (8)"Simulated fire" means an artificial duplication of smoke or flame used to create various aircraft fire-fighting scenarios, such as lavatory, galley oven, and aircraft seat fires.

121.418 Differences training and related aircraft differences training

(a) Differences training
  (1) Differences training for crewmembers and dispatchers must consist of at least the following as applicable to their assigned duties and responsibilities:
    (i) Instruction in each appropriate subject or part thereof required for initial ground training in the aircraft unless the ECAA finds that particular subjects are not necessary;
    (ii) Flight training in each appropriate maneuver or procedure required for initial flight training in the aircraft unless the ECAA finds that particular maneuvers or procedures are not necessary; and
    (iii) The number of programmed hours of ground and flight training determined by the ECAA to be necessary for the aircraft, the operation, and the crewmember or aircraft dispatcher involved.
  (2) Differences training for all variations of a particular type airplane may be included in initial, transition, upgrade, and recurrent training for the airplane.

(b) Related aircraft differences training.
  (1) In order to seek approval of related aircraft differences training for flightcrew members, a certificate holder must submit a request for related aircraft designation to the ECAA, and obtain approval of that request.
  (2) If the ECAA determines under paragraph (b)(1) of this section that a certificate holder is operating related aircraft, the certificate holder may submit to the ECAA a request for approval of a training program that includes related aircraft differences training.

(3) A request for approval of a training program that includes related aircraft differences training must include at least the following:
(i) Each appropriate subject required for the ground training for the related aircraft.
(ii) Each appropriate maneuver or procedure required for the flight training and crewmember emergency training for the related aircraft.
(iii) The number of programmed hours of ground training, flight training and crewmember emergency training necessary based on review of the related aircraft and the duty position.

(c) Approved related aircraft differences training. Approved related aircraft differences training for flightcrew members may be included in initial, transition, upgrade and recurrent training for the base aircraft. If the certificate holder's approved training program includes related aircraft differences training in accordance with paragraph (b) of this section, the training required by 121.419, 121.424, 121.425, and 121.427, as applicable to flightcrew members, may be modified for the related aircraft.

121.419 Pilots and flight engineers: Initial, transition, and upgrade ground training

(a) Except as provided in paragraph (b) of this section, initial, transition, and upgrade ground training for pilots and flight engineers must include instruction in at least the following as applicable to their assigned duties:
(1) General subjects:
(i) The certificate holder's dispatch or flight release procedures;
(ii) Principles and methods for determining weight and balance, and runway limitations for takeoff and landing;
(iii) Enough meteorology to insure a practical knowledge of weather phenomena, including the principles of frontal systems, icing, fog, thunderstorms, and high altitude weather situations;
(iv) Air traffic control systems, procedures, and phraseology;
(v) Navigation and the use of navigation aids, including instrument approach procedures;
(vi) Normal and emergency communication procedures;
(vii) Visual cues prior to and during descent below DA/DH or MDA;
(viii) Approved crew resource management initial training; and
(ix) Other instructions as necessary to ensure pilot or flight engineer competence.
(2) For each aircraft type:
(i) A general description;
(ii) Performance characteristics;
(iii) Engines and propellers;
(iv) Major components;
(v) Major aircraft systems (e.g., flight controls, electrical, hydraulic); other systems as appropriate; principles of normal, abnormal, and emergency operations; appropriate procedures and limitations;
(vi) Procedures for:
(A) Recognizing and avoiding severe weather situations;
(B) Escaping from severe weather situations, in case of inadvertent encounters, including low-altitude windshear; and
(C) Operating in or near thunderstorms (including best penetrating altitudes), turbulent air (including clear air turbulence), icing, hail, and other potentially hazardous meteorological conditions;
(vii) Operating limitations;
(viii) Fuel consumption and cruise control;
(ix) Flight planning;
(x) Each normal and emergency procedure;
(xi) The approved Airplane Flight Manual.
(xii) For pilots, stall prevention and recovery in clean configuration, takeoff and maneuvering configuration, and landing configuration; and
(xiii) For pilots, upset prevention and recovery.

(b) Initial ground training for pilots who have completed the airline transport pilot certification training program in 61.156 must include instruction in at least the following as applicable to their assigned duties:
(1) Ground training specific to the certificate holder's—

(i) Dispatch or flight release procedures;
(ii) Method for determining weight and balance and runway limitations for takeoff and landing;
(iii) Meteorology hazards applicable to the certificate holder's areas of operation;
(iv) Approved departure, arrival, and approach procedures;
(v) Normal and emergency communication procedures; and
(vi) Approved crew resource management training.

(2) The training required by paragraph (a)(2) of this section for the airplane type.

(c) Initial ground training for pilots and flight engineers must consist of at least the following programmed hours of instruction in the required subjects specified in paragraph (a) of this section and in 121.415(a) unless reduced under 121.405:

(1) Air carriers:
(i) Group IIIP aircraft:
(A) Reciprocating powered, 64 hours; and
(B) Turbopropeller powered, 80 hours.
(ii) Group IIIJ aircraft, 120 hours.

(2) Air taxi:
(i) Single-engine aircraft:
(A) Initial 20 hours;
(B) Initial Equipment, 16 hours;
(C) Transition, 16 hours; and
(D) Upgrade, 4 hours.
(ii) Multi-engine aircraft:
(A) Initial, 32 hours;
(B) Initial Equipment, 24 hours;
(C) Transition, 16 hours; and
(D) Upgrade, 8 hours.

121.420 Cabin Crew Instructor requirements:

The following provisions establish the requirements for cabin crew instructor certification which is valid for 12 months and is for a maximum of three types:

(a) Conditions for approving a cabin crew instructor:
(1) A valid license on the aircraft type requested;
(2) Not less than 5 years total experience as a qualified cabin crew member whether continuous or not including experience for at least one year on the type requested.

(b) Conditions for qualifying cabin crew instructor:
(1) Successfully pass instructor ground training attend and pass an approved course on the professional skills for cabin crew instructors acceptable by the ECAA, in at least the following:
(i) The learning process.
(ii) Elements of effective learning.
(iii) Student evaluation and testing.
(iv) Course development.
(v) Lesson planning.
(vi) Classroom training techniques.
(2) Successfully conducts an initial, transition or recurrent ground training for minimum 4 cabin crew members under the supervision of an ECAA inspector (or cabin crew examiner upon ECAA approval) and;
(3) Successfully conduct a competency check for 2 cabin crew members on any aircraft type required for certification on a flight (2 sectors) under supervision of an ECAA inspector (or cabin crew examiner upon ECAA approval).

(c) Requirement for renewal of a cabin crew instructor:
(1) Hold a valid licence.
(2) Complete one of the following:
(i) Successfully conducts an initial, transition or recurrent ground training for minimum 4 cabin crew members under the supervision of a qualified cabin crew instructor ,examiner / inspector and;
(ii) Successfully conduct a competency check for 2 cabin crew members on any aircraft type required for certification on a flight (2 sectors) under supervision of an ECAA inspector (or cabin crew examiner upon ECAA approval).

(d) Requirements for issuance and renewal of ground cabin crew instructor:

(1) For issuance: The applicant must satisfy the requirements as provided in 121.420 (a)(2),(b)(1) (2).

(2) For renewal: Successfully conducts an initial, transition or recurrent ground training during the preceding 12 months period for minimum 4 cabin crew members under the supervision of an ECAA inspector (or cabin crew examiner upon ECAA approval)..

121.421 Cabin crew: Initial and transition ground training

(a) Initial and transition ground training for cabin crew must include instruction in at least the following:

(1) General subjects:

(i) The authority of the pilot in command;

(ii) Passenger handling, including the procedures to be followed in the case of deranged persons or other persons whose conduct might jeopardize safety; and

(iii) Approved crew resource management initial training.

(2) For each airplane type:

(i) A general description of the airplane emphasizing physical characteristics that may have a bearing on ditching, evacuation, and in-flight emergency procedures and on other related duties;

(ii) The use of both the public address system and the means of communicating with other flight crewmembers, including emergency means in the case of attempted hijacking or other unusual situations; and

(iii) Proper use of electrical galley equipment and the controls for cabin heat and ventilation.

(b) Initial and transition ground training for cabin crew must include a competence check to determine ability to perform assigned duties and responsibilities.

(c) Initial ground training for cabin crew must consist of at least the following programmed hours of instruction in the subjects specified in paragraph (a) of this section and in section 121.415(a) unless reduced under 121.405:

(1) Group IIIP aircraft:

(i) Reciprocating powered, 8 hours; and

(ii) Turbopropeller powered, 8 hours.

(2) Group IIIJ aircraft, 16 hours; and

(3) All single and multiengine aircraft under 5700 kg MGTW, 8 hours.

(e) Cabin crew must complete a competence check to determine their ability to perform their assigned duties and responsibilities at the completion of their initial or recurrent training.

121.422 Aircraft dispatchers: Initial and transition ground training

(a) Initial and transition ground training for aircraft dispatchers must include instruction in at least the following:

(1) General subjects:

(i) Use of communications systems including the characteristics of those systems and the appropriate normal and emergency procedures;

(ii) Meteorology, including various types of meteorological information and forecasts, interpretation of weather data (including forecasting of en route and terminal temperatures and other weather conditions), frontal systems, wind conditions, and use of actual and prognostic weather charts for various altitudes;

(iii) The NOTAM system;

(iv) Navigational aids and publications;

(v) Joint dispatcher/pilot responsibilities;

(vi) Characteristics of appropriate airports;

(vii) Prevailing weather phenomena and the available sources of weather information;

(viii) Air traffic control and instrument approach procedures; and

(ix) Approved dispatcher resource management (DRM) initial training.

(x) made, within the preceding 12 months, at least a one qualification flight in the flight crew compartment of an aircraft over any area for which that individual is authorized to exercise flight supervision. The flight should include landings at as many aerodromes as practicable;

Note.— For the purpose of the qualification flight, flight dispatcher must be able to monitor the flight crew intercommunication system and radio communications, and be able to observe the actions of the flight crew.

(2) For each aircraft:
  (i) A general description of the aircraft emphasizing operating and performance characteristics, navigation equipment, instrument approach and communication equipment, emergency equipment and procedures, and other subjects having a bearing on dispatcher duties and responsibilities;
  (ii) Flight operation procedures; including procedures specified in section 121.419(a)(2)(vi);
  (iii) Weight and balance computations;
  (iv) Basic aircraft performance dispatch requirements and procedures;
  (v) Flight planning including track selection, flight time analysis, and fuel requirements; and
  (vi) Emergency procedures.

(3) Emergency procedures must be emphasized, including the alerting of proper governmental, company, and private agencies during emergencies to give maximum help to an aircraft in distress.

(b) Initial and transition ground training for aircraft dispatchers must include a competence check given by an appropriate supervisor or ground instructor that demonstrates knowledge and ability with the subjects set forth in paragraph (a) of this section in addition to :
(1) The contents of the operations manual;
(2) The radio equipment in the aircrafts used; and
(3) The navigation equipment in the aircrafts used;
(4) The seasonal meteorological conditions and the sources of meteorological information;
(5) The effects of meteorological conditions on radio reception in the aircrafts used;
(6) The peculiarities and limitations of each navigation system which is used by the operation; and
7) the aircrafts loading instructions;.

(c) Initial ground training for aircraft dispatchers must consist of at least the following programmed hours of instruction in the subjects specified in paragraph (a) of this section and in section 121.415(a) unless reduced under section 121.405:
(1) Group IIIP aircraft:
  (i) Reciprocating powered, 30 hours; and
  (ii) Turbopropeller powered, 40 hours.
(2) Group IIIJ aircraft, 40 hours; and
(3) All single and multiengine aircraft under 5700 kg MGTW, 30 hours.

121.423 Pilot: Extended Envelope Training

(a) Each certificate holder must include in its approved training program, the extended envelope training set forth in this section with respect to each airplane type for each pilot. The extended envelope training required by this section must be performed in a Level C or higher full flight simulator, approved by the ECAA in accordance with 121.407 of this part.

(b) Extended envelope training must include the following maneuvers and procedures:
(1) Manually controlled slow flight;
(2) Manually controlled loss of reliable airspeed;
(3) Manually controlled instrument departure and arrival;
(4) Upset recovery maneuvers; and
(5) Recovery from bounced landing.

(c) Extended envelope training must include instructor-guided hands on experience of recovery from full stall and stick pusher activation, if equipped.

(d) Recurrent training: Within 24 calendar months preceding service as a pilot, each person must satisfactorily complete the extended envelope training described in paragraphs (b)(1) through (4) and (c) of this section. Within 36 calendar months preceding service as a pilot, each person must satisfactorily complete the extended envelope training described in paragraph (b)(5) of this section.

(e) Deviation from use of Level C or higher full flight simulator:
(1) A certificate holder may submit a request to the ECAA for approval of a deviation from the requirements of paragraph (a) of this section to conduct the extended

envelope training using an alternative method to meet the learning objectives of this section.

(2) A request for deviation from paragraph (a) of this section must include the following information:

(i) A simulator availability assessment, including hours by specific simulator and location of the simulator, and a simulator shortfall analysis that includes the training that cannot be completed in a Level C or higher full flight simulator; and

(ii) Alternative methods for achieving the learning objectives of this section.

(3) A certificate holder may request an extension of a deviation issued under this section.

(4) Deviations or extensions to deviations will be issued for a period not to exceed 12 months.

(f) Compliance with this section is required no later than March 12, 2019. For the recurrent training required in paragraph (d) of this section, each pilot qualified to serve as second in command or pilot in command in operations under this part on March 12, 2019 must complete the recurrent extended envelope training within 12 calendar months after March 12, 2019.

121.424 Pilots: Initial, transition, and upgrade flight training

(a) Initial, transition, and upgrade flight training for pilots must include the following:-

(1) Flight training and practice in the maneuvers and procedures set forth in the certificate holder's approved low altitude windshear flight training program and in Appendix E to this Part, as applicable; and

(2) Extended envelope training set forth in 121.423.

(b) The training required by paragraph (a) of this section must be performed inflight except:

(1) That windshear maneuvers and procedures must be performed in a simulator in which the maneuvers and procedures are specifically authorized to be accomplished;

(2) That the extended envelope training required by 121.423 must be performed in a Level C or higher full flight simulator unless the ECAA has issued to the certificate holder a deviation in accordance with 121.423(e); and

(3) To the extent that certain other maneuvers and procedures may be performed in an aircraft simulator, an appropriate training device, or a static aircraft as permitted in appendix E to this Part.

(c) Except as permitted in paragraph (d) of this section, the initial flight training required by paragraph (a)(1) of this section must include at least the following programmed hours of in-flight training and practice unless reduced under section 121.405:-

(1) Group IIIP airplanes—

(i) Reciprocating powered. Pilot in command, 10 hours; second in command, 6 hours; and

(ii) Turbopropeller powered. Pilot in command, 15 hours; second in command, 7 hours.

(2) Group IIIJ airplanes. Pilot in command, 20 hours; second in command, 10 hours.

(d) If the certificate holder's approved training program includes a course of training utilizing an aircraft simulator under section 121.409(c) & (d) of this Part, each pilot must successfully complete:

(1) With respect to 121.409(c) of this Part:

(i) Training and practice in the simulator in at least all of the maneuvers and procedures set forth in appendix E to this Part, for initial flight training that are capable of being performed in an aircraft simulator without a visual system; and

(ii) A flight check in the simulator or the aircraft to the level of proficiency of a pilot in command or second in command, as applicable, in at least the maneuvers and procedures set forth in appendix F to this Part that are capable of being performed in an airplane simulator without a visual system.

(2) With respect to 121.409(d) of this Part, training and practice in at least the maneuvers and procedures set forth in the certificate holder's approved low-altitude windshear flight training program that are capable of being performed in an airplane simulator in which the maneuvers and procedures are specifically authorized.

(e) Compliance with paragraphs (a)(2) and (b)(2) of this section is required no later than March 12, 2019.

121.425 Flight engineers: Initial and transition flight training

(a) Initial and transition flight training for flight engineers must include at least the following:
  (1) Training and practice in procedures related to the carrying out of flight engineer duties and functions. This training and practice may be accomplished either inflight, in an airplane simulator, or in a training device.
  (2) A flight check that includes:
    (i) Preflight inspection;
    (ii) Inflight performance of assigned duties accomplished from the flight engineer station during taxi, runup, takeoff, climb, cruise, descent, approach, and landing;
    (iii) Accomplishment of other functions, such as fuel management and preparation of fuel consumption records, and normal and emergency or alternate operation of all airplane flight systems, performed either inflight, in an airplane simulator, or in a training device; and
    (iv) Flight engineers possessing a commercial pilot license with an instrument rating, appropriate category and class rating, or pilots already qualified as second in command and reverting to flight engineer, may complete the entire flight check in an approved airplane simulator.

(b) Except as permitted in paragraph(c) of this section, the initial flight training required by paragraph (a) of this section must include at least the same number of programmed hours of flight training and practice that are specified for a second in command pilot under 121.424 (c) unless reduced under 121.405.

(c) If the certificate holder's approved training program includes a course of training utilizing an airplane simulator or other training device under 121.409(c) each flight engineer must successfully complete in the simulator or other training device:
  (1) Training and practice in at least all of the assigned duties, procedures, and functions required by paragraph (a) of this section; and
  (2) A flight check to a flight engineer level of proficiency in the assigned duties, procedures, and functions.

121.427 Recurrent training

(a) Recurrent training must ensure that each crewmember or dispatcher is adequately trained and currently proficient with respect to the type aircraft (including differences training, if applicable) including regulation training and crewmember position involved.

(b) Recurrent ground training for crewmembers and dispatchers must include at least the following;
  (1) Ground training for flight crew only:
    (i) The ground training programme should include:
      (A) aircraft systems;
      (B) operational procedures and requirements, including ground de-icing/anti-icing and pilot incapacitation; and
      (C) accident/incident and occurrence review.
    (ii) Knowledge of the ground training should be verified by a questionnaire or other suitable methods.
    Note: A quiz or other review to determine the state of cabin crew members or dispatcher's knowledge with respect to the aircraft and position involved.
    (iii) When the ground training is conducted within 3 calendar months prior to the expiry of the 12 calendar months period, the next ground and refresher training should be completed within 12 calendar months of the original expiry date of the previous training.
  (2) Emergency and safety equipment training (not required for aircraft dispatchers)
    (i) Every year the crewmember emergency training as provided in 121.417(b)
    (ii) Every 2 years the cabin crew member emergency drill requirements as provided in 121.417(c).
    (iii) Every 3 years the flight crew member emergency drill requirements as provided in 121.417(d)
    (v) Every 3 years the crewmember emergency and safety equipment training drill requirements includes the aircraft emergencies requires interaction between flight crew and cabin crew including the joint practice in aircraft evacuations as provided in 121.417(e).
  (3) CRM

(i) Elements of CRM should be integrated into all appropriate phases of recurrent training.

(ii) A specific modular CRM training programme should be established such that all major topics of CRM training are covered over a period not exceeding 3 years, as follows:

(A) human error and reliability, error chain, error prevention and detection;

(B) operator safety culture, standard operating procedures (SOPs), organizational factors;

(C) stress, stress management, fatigue and vigilance;

(D) information acquisition and processing, situation awareness, workload management;

(E) decision making;

(F) communication and coordination inside and outside the flight crew compartment;

(G) leadership and team behavior, synergy;

(H) automation and philosophy of the use of automation (if relevant to the type);

(I) specific type-related differences;

(J) case studies;

(K) additional areas which warrant extra attention, as identified by the safety management system.

(iii) Operators should establish procedures to update their CRM recurrent training programme. Revision of the programme should be conducted over a period not exceeding 3 years. The revision of the programme should take into account the de-identified results of the CRM assessments of crews, and information identified by the safety

(4) SMS. All major topics of SMS training according to operator approved training program are covered over a period not exceeding 3 years.

(5) Aviation Security (not required for aircraft dispatchers)

Every year All major topics of Aviation security training are covered as provided in ECAR 108.21.

(6) Meteorology (not required for cabin crew). All major topics of Meteorology training according to operator approved training program are covered over a period not exceeding 3 years.

(7) Instruction as necessary in the subjects required for initial ground training by 121.415(a) and 121.805, as appropriate, including emergency training (not required for aircraft dispatchers);

(8)For cabin crew and dispatchers, a competence check as required by 121.421(b) and 121.422(b) respectively; and

(9)CRM and DRM training. For flightcrew members, CRM training or portions thereof may be accomplished during an approved simulator line operational flight training (LOFT) session. The recurrent CRM or DRM training requirements do not apply until a person has completed the applicable initial CRM or DRM training required by 121.419, 121.421, or 121.422.

(c) Recurrent ground training for crewmembers and dispatchers must consist of at least the following programmed hours unless reduced under121.405:

(1) For pilots and flight engineers:

(i) Group IIIP, reciprocating powered aircraft, 16 hours;

(ii) Group IIIP turbopropeller powered aircraft, 20 hours; and Group IIIJ turbojet powered aircraft, 25 hours.

(iii) Air taxi, 2 hours

(2) For cabin crew:

(i) Group IIIP, reciprocating powered aircraft, 4 hours;

(ii) Group IIIP turbopropeller powered aircraft, 5 hours; and

(iii) Group IIIJ aircraft, 12 hours.

(3) For aircraft dispatchers:

(i) Group IIIP, reciprocating powered aircraft, 8 hours;

(ii) Group IIIP turbopropeller powered aircraft, 10 hours; and

(iii) Group IIIJ aircraft, 20 hours.

(d) Recurrent flight training for cockpit crewmembers must include at least the following:

(1) For pilots—
(i) Extended envelope training as required by 121.423 of this part; and
(ii) Flight training in an approved simulator in maneuvers and procedures set forth in the certificate holder's approved low-altitude windshear flight training program and flight training in maneuvers and procedures set forth in appendix F to this part, or in a flight training program approved by the ECAA, This requirement is met by fulfilling the provisions of 121.409(b), proficiency training except as follows—
(A) The number of programmed inflight hours is not specified; and
(B) Satisfactory completion of a proficiency check may be substituted for recurrent flight training as permitted in 121.433(c) and (e) of this part.

NOTE: for pilots conduct operations by air taxi operations up to 15 passengers seating capacity under 121.2(b), that pilot has satisfactorily completed a proficiency check required by 121.441 (a)(2) within the preceding 12 calendar moth may be substituted for proficiency training.

(2) For flight engineers, flight training as provided by 121.425(a) except as follows—
(i) The specified number of inflight hours is not required; and
(ii) The flight check, other than the preflight inspection, may be conducted in an approved airplane simulator or other training device. The preflight inspection may be conducted in an airplane, or by using an approved pictorial means that realistically portrays the location and detail or preflight inspection items and provides for the portrayal of abnormal conditions. Satisfactory completion of an approved line-oriented simulator training program may be substituted for the flight check.

(e) Compliance and pilot programmed hours:
(1) Compliance with the requirements identified in paragraphs (d)(1)(i) of this section is required no later than March 12, 2019.
(2) After March 12, 2019, recurrent programmed hours applicable to pilots as specified in paragraph (c)(1) of this section must include 30 additional minutes.
Note: the aircraft /Simulator training programme should be established in a way that all major failures of aircraft systems and associated procedures will have been covered in the preceding 3 year period.

121.428 Re-qualification training

(a) Re-qualification training must ensure that each crewmember or dispatcher is adequately trained and currently proficient with respect to the type aircraft and crewmember position involved.
(b) Re-qualification ground and flight training for crewmembers or dispatcher as required by this subpart must include at least the following:

(1) Re-qualification curriculums for cockpit crew members overdue training

Time past month due	**Required ground re-qualification segment**	**Required flight** re-qualification segment	**Additional qualification segments**
Up to 12 calendar months	The portion of ground recurrent training not accomplished when due.	The elements not accomplished when due: Proficiency check.	The modules not accomplished in the eligibility period: Line check or special airports.

12 to 35 months	16 hours including HAZMAT, safety and emergency training hands on.	8 Hours including proficiency check.	All qualification modules of the transition curriculum, line check, or special airports. airports.
36 to 59 months	24 hours Including HAZMAT, safety and emergency training hands on.	16 hours Including proficiency check.	All qualification modules of the transition curriculum, line check, or special airports.
More than 59 months	--Same as initial equipment training --		

(2) Re-qualification curriculum for cabin crew members overdue training

Time elapsed without exercising license privilege	Valid license	Non valid license
91 days – 12 months	Operating experience (ECAR121.435)(e)(3)(i)	Recurrent training depending on his last recurrent and operating experience (ECAR121.435)(e)(3)(i)
12 month – up to 36 months	Recurrent training depending on his last recurrent and operating experience (ECAR121.435)(e)(3)(i) on each aircraft type.	
more than 36 months	- Initial general emergency training on aircraft types. - A tailored basic indoctrination program & civil aviation regulations. - Operating experience (ECAR121.435)(e)(3)(ii).	

(3) Re-qualification curriculums for aircraft dispatcher

Re qualification Training		
Time past month due	**Ground Training**	**Qualification**
Up to 3 calendar months	Recurrent training (if not accomplished in eligibility period)	Any training not accomplished in eligibility: CC or OF
More than 3 and less than 6 months	8 hours remedial and (if not accomplished in eligibility period) recurrent training	CC and (if not accomplished in eligibility OF
More than 6 and less than 12 months	8 hours remedial ,recurrent training, and OJT to proficiency	CC and OF
More than 12 and less than 36 months	16 hours remedial ,recurrent training, and OJT to proficiency	CC and OF
More than 36 months	Initial training	CC and OF

Re qualification Training		
Time past month due	**Ground Training**	**Qualification**
KEY : CC =	Competency check	
OF =	Operational familiarization	
OJT =	On the Job Training	

121.429 Prohibited drugs

(a) Each certificate holder shall provide each employee performing a function listed in appendix I to this Part and his or her supervisor with the training specified in that appendix.

(b) No certificate holder may use any contractor to perform a function listed in appendix I to this Part unless that contractor provides each of its employees performing that function for the certificate holder and his or her supervisor with the training specified in that appendix.

SUBPART O
Crewmember Qualifications

121.431 Applicability

(a) This subpart:

(1) Prescribes crewmember qualifications for all certificate holders except where otherwise specified; and

(2) Permits training center personnel authorized under Part 142 who meet the requirements of Part 121.411 through 121.414 to provide training, testing, and checking under contract or other arrangement to those persons subject to the requirements of this subpart.

(b) For the purpose of this subpart, the aircraft groups and terms and definitions prescribed in 121.400, and the following definitions apply:

(1) Consolidation is the process by which a person through practice and practical experience increases proficiency in newly acquired knowledge and skills;

(2) Line operating flight time is flight time performed in operations under this Part; and

(3) Operating cycle is a complete flight segment consisting of a takeoff, climb, en route portion, descent, and a landing.

121.432 General

(a) Certificate holders shall ensure that flight crew members demonstrate the ability to speak and understand the language used for aeronautical radiotelephony communications as specified in Part 61.

(b) Except in the case of operating experience required under 121.435, a pilot who serves as second in command of an operation that requires three or more pilots must be fully qualified to act as pilot in command of that operation.

(c) Except for pilot line checks and flight engineer flight checks, the person being trained or checked may not be used as a required crewmember.

121.433 Training required

(a) Initial training: No certificate holder may use any person nor may any person serve as a required crewmember on an aircraft unless that person has satisfactorily completed, in a training program approved under 121.415 of this Part, initial ground and flight training for that type aircraft and for the particular crewmember position, except as follows:

(1) Crewmembers who have qualified and served as a crewmember on another type aircraft of the same group may serve in the same crewmember capacity upon completion of transition training as provided in 121.415; and

(2) Crewmembers who have qualified and served as second in command on a particular type aircraft may serve as pilot in command or second in command, respectively, upon completion of upgrade training for that aircraft as provided in 121.415.

(b) Differences training: No certificate holder may use any person nor may any person serve as a required crewmember on an aircraft of a type for which difference training is included in the certificate holder's approved training program; unless that person has satisfactorily completed, with respect to both the crewmember position and the particular variation of the aircraft in which he serves: either initial or transition ground and flight training, or differences training, as provided in subpart N of this Part.

(c) Recurrent training

(1) No certificate holder may use any person nor may any person serve as a required crewmember on an aircraft unless that within the preceding 12 calendar months:

(i) For cockpit crewmembers, they have satisfactorily completed recurrent ground and flight training for that aircraft and crewmember position and a flight check as applicable;

(ii) For cabin crew and dispatchers, they have satisfactorily completed recurrent ground training and competence check; and

(iii) For pilots, they have satisfactorily completed recurrent ground training and a proficiency check in accordance with this subpart, and proficiency training required in 121.409(b). The proficiency check required in 121.441 and the proficiency training required by 121.409(b) may be completed in the calendar month before or the calendar month after in which that training or check is required. In order to satisfy this requirement they must occur in the same year and be separated by a period greater than four consecutive calendar months and less than eight consecutive calendar months.

(2) For pilots, a proficiency check as provided in 121.441 of this part may be substituted for the recurrent flight training required by this paragraph and the approved simulator course of training under 121.409(b) of this part may be substituted for alternate periods of recurrent flight training required in that aircraft, except as provided in paragraphs (d) and (e) of this section.

(d) For each aircraft in which a pilot serves as pilot in command or second in command , the person must satisfactorily complete either recurrent flight training or a proficiency check within the preceding 12 calendar months.

(e) Notwithstanding paragraphs (c)(2) and (d) of this section, a proficiency check as provided in 121.441 of this part may not be substituted for the extended envelope training required by 121.423 or training in those maneuvers and procedures set forth in a certificate holder's approved low-altitude windshear flight training program when that program is included in a recurrent flight training course as required by 121.409(d) of this part.

121.434 Training requirements: Handling and carriage of dangerous articles and magnetized materials

(a) No certificate holder may use any person to perform and no person may perform, any assigned duties and responsibilities for the handling or carriage of dangerous articles and magnetized materials governed by Part 175, unless within the preceding 24 calendar months that person has satisfactorily completed training in a program established and approved under this subpart which includes instructions regarding the proper packaging, marking, labeling, and documentation of dangerous articles and magnetized materials, as required by Part 175 and instructions regarding their compatibility, loading, storage, and handling characteristics. A person who satisfactorily completes training in the calendar month before, or the calendar month after, the month in which it becomes due, is considered to have taken that training during the month it became due.

(b) Each certificate holder shall maintain a record of the satisfactory completion of the initial and recurrent training given to crewmembers and ground personnel who perform assigned duties and responsibilities for the handling and carriage of dangerous articles and magnetized materials.

(c) A certificate holder operating in a foreign country where the loading and unloading of aircraft must be performed by personnel of the foreign country, may use personnel not meeting the requirements of paragraphs (a) and (b) of this section if they are supervised by a person qualified under paragraphs (a) and (b) of this section to supervise the loading, offloading and handling of hazardous materials.

(d) Each certificate holder that elects not to accept or transport hazardous materials shall ensure that each crewmember, or any other person who accepts baggage or freight, is adequately trained to recognize those items classified as hazardous material.

121.435 Operating experience, operating cycles, and consolidation of knowledge and skills

(a) No certificate holder may use a person nor may any person serve as a required crewmember of an aircraft unless the person has satisfactorily completed, on that type aircraft and in that crewmember position, the operating experience, operating cycles, and the line operating flight time for consolidation of knowledge and skills, required by this section, except as follows:

(1) Crewmembers other than pilots in command may serve as provided herein for the purpose of meeting the requirements of this section;

(2) Pilots who are meeting the pilot in command requirements may serve as second in command; and

(3) Separate operating experience, operating cycles, and line operating flight time for consolidation of knowledge and skills are not required for variations within the same type aircraft.

(b) In acquiring the operating experience, operating cycles, and line operating flight time for consolidation of knowledge and skills, crewmembers must comply with the following:

(1) In the case of a cockpit crewmember, he must hold the appropriate licenses and ratings for the crewmember position and the aircraft, except that a pilot who is meeting the pilot in command requirements must hold the appropriate licenses and ratings for a pilot in command of the aircraft;

(2) The operating experience, operating cycles, and line operating flight time for consolidation of knowledge and skills must be acquired after satisfactory completion of the appropriate ground and flight training for the particular aircraft type and crewmember position; and

(3) The experience must be acquired in flight during operations under this Part. However, in the case of an aircraft not previously used by the certificate holder in operations under this Part, operating experience acquired in the aircraft during proving flights or ferry flights may be used to meet this requirement.

(c) Pilot crewmembers must acquire operating experience and operating cycles as follows:

(1) A pilot in command must;

(i) Perform the duties of a pilot in command under the supervision of a check pilot; and

(ii) In addition, if a qualifying pilot in command is completing initial or upgrade training specified in subpart N of this Part, be observed in the performance of prescribed duties by an ECAA inspector during at least one flight leg which

includes a takeoff and landing. During the time that a qualifying pilot in command is acquiring the operating experience in paragraphs (c)(l) (i) and (ii) of this section, a check pilot who is also serving as the pilot in command must occupy a pilot station. However, in the case of a transitioning pilot in command the check pilot serving as pilot in command may occupy the observer's seat, if the transitioning pilot has made at least two takeoffs and landings in the type aircraft used, and has satisfactorily demonstrated to the check pilot that he is qualified to perform the duties of a pilot in command of that type of aircraft.

(2) A second in command pilot must perform the duties of a second in command under the supervision of an appropriately qualified check pilot.

(3) The hours of operating experience and operating cycles for all pilots are as follows:

(i) For initial training, 20 hours in Group IIIP reciprocating powered aircraft, 30 hours in Group IIIP turbopropeller powered aircraft, and 40 hours in Group IIIJ aircraft. Operating experience in both aircraft groups must include at least 10 operating cycles (at least 5 as the pilot flying the aircraft);

(ii) For transition training, except as provided in paragraph (c)(3)(iii) of this section, 15 hours in Group IIIP reciprocating powered aircraft, 20 hours in Group IIIP turbopropeller powered aircraft, 40 hours for pilots in command in Group IIIJ aircraft, and 40 hours for second in command pilots in Group IIIJ aircraft. Operating experience in both aircraft groups must include at least 10 operating cycles (at least 5 as the pilot flying the aircraft); and

(iii) In the case of transition training where the certificate holder's approved training program includes a course of training in an aircraft simulator under subpart N of this Part each pilot in command must comply with the requirements prescribed in paragraph (c)(3)(i) of this section for initial training.

(d) A flight engineer must perform the duties of a flight engineer under the supervision of a check airman or a qualified flight engineer for at least the following number of hours:

(1) Group IIIP reciprocating powered aircraft, 8 hours;

(2) Group IIIP turbopropeller powered aircraft, 10 hours; and

(3) Group IIIJ aircraft, 12 hours.

(e) Cabin crew members must acquire operating experience as follows:

Cabin crew receiving operating experience shall not be assigned as a required crew member and must complete successfully;

(1) Initial :

For at least 6 sectors the assigned duties of a cabin crew member under the supervision of a cabin crew instructor / examiner who personally observes the performance of duties including at least 2 sectors under supervision of an ECAA inspector (or cabin crew examiner upon ECAA approval).

(2) Transition:

For at least 4 sectors the assigned duties of a cabin crew member under the supervision of a cabin crew instructor / examiner who personally observes the performance of duties including at least 2 sectors under supervision of an ECAA inspector (or cabin crew examiner upon ECAA approval).

(3) Requalification:

I. Less than 36 months:

For at least 4 sectors the assigned duties of a cabin crew member under the supervision of a cabin crew instructor / examiner who personally observes the performance of duties including at least 2 sectors under supervision of an ECAA inspector (or cabin crew examiner upon ECAA approval)..

II. More than 36 months

For at least 6 sectors the assigned duties of a cabin crew member under the supervision of a cabin crew instructor / examiner who personally observes the performance of duties including at least 2 sectors under supervision of an ECAA inspector (or cabin crew examiner upon ECAA approval).

(f) Cockpit crewmembers may substitute one additional takeoff and landing for each hour of flight to meet the operating experience requirements of this section, up to a maximum reduction of 50% of flight hours, except those in Group IIIJ initial training, and second in

command pilots in Group IIIJ transition training. Notwithstanding the reductions in programmed hours permitted under subpart N of this Part, the hours of operating experience for cockpit crewmembers are not subject to reduction other than as provided in this paragraph.

(g) Except as provided in paragraph (h) of this section, pilot in command and second in command crewmembers must each acquire at least 100 hours of line operating flight time for consolidation of knowledge and skills (including operating experience required under paragraph (c) of this section) within 120 days after the satisfactory completion of:
  (1) Any part of the flight maneuvers and procedures portion of either an airline transport pilot license with type rating skills test or an additional type rating skills test; or
  (2) A section 121.441 proficiency check.

(h) The following exceptions apply to the consolidation requirement of paragraph (g) of this section:
  (1) If, before completing the required 100 hours of line operating flight time, a pilot serves as a pilot in another aircraft type operated by the certificate holder, the pilot may not serve as a pilot in the aircraft for which the pilot has newly qualified unless the pilot satisfactorily completes re-qualification training as provided in the certificate holder's approved training program and that training is conducted by an appropriately qualified instructor or check pilot;
  (2) If the required 100 hours of line operating flight time are not completed within 120 days, the certificate holder may extend the 120 days period to no more than 150 days if:
    (i) The pilot continues to meet all other applicable requirements of subpart O of this Part; and
    (ii) On or before the 120th day the pilot satisfactorily completes re-qualification training conducted by an appropriately qualified instructor or check pilot as provided in the certificate holder's approved training program, or a check pilot determines that the pilot has retained an adequate level of proficiency after observing that pilot in a supervised line operating flight.
  (3) The ECAA, upon application by the certificate holder, may authorize deviations from the requirements of paragraph (g) of this section, by an appropriate amendment to the operations specifications, to the extent warranted by any of the following circumstances:
    (i) A newly certificated certificate holder does not employ any pilots who meet the minimum requirements of paragraph (g) of this section;
    (ii) An existing certificate holder adds to its fleet an aircraft type not before proven for use in its operations; and
    (iii) A certificate holder establishes a new domicile to which it assigns pilots who will be required to become qualified on the aircraft operated from that domicile.

    Notwithstanding the reductions in programmed hours permitted in subpart N of this Part, the hours of operating experience for cockpit crewmembers are not subject to reduction other than as provided in paragraphs (e) and (f) of this section.

121.437 Pilot qualification: licenses required

(a) No pilot may act as pilot in command of an aircraft (or as second in command of an aircraft in operations conducted under this Part that requires three or more pilots) unless he holds an airline transport pilot license and an appropriate type rating for that aircraft.

(b) No certificate holder may use nor may any pilot act as a pilot in a capacity other than those specified in paragraph (a) of this section unless the pilot holds at least a commercial pilot license with appropriate category and class ratings for the aircraft concerned, and an instrument rating. Notwithstanding the requirements of Part 61, a pilot who is currently employed by a certificate holder and meets applicable training requirements of subpart N of this Part, and the proficiency check requirements of section 121.441, may be issued the appropriate ratings by presenting proof of compliance with those requirements to the ECAA.

121.438 Pilot operating limitations and pairing requirements

(a) If the second in command has fewer than 100 hours of flight time as second in command in operations in the type of aircraft being flown, and the pilot in command is not an appropriately qualified check pilot, the pilot in command must make all takeoffs and landings in the following situations:
  (1) At special airports designated by the ECAA or at special airports designated by the certificate holder; and
  (2) In any of the following conditions:
    (i) The prevailing visibility value in the latest weather report for the airport is at or below (3/4) mile / 1200 meters;
    (ii) The runway visual range for the runway to be used is at or below 4,000-feet/1200 m;
    (iii) The runway to be used has water, snow, slush or similar conditions that may adversely affect aircraft performance;
    (iv) The braking action on the runway to be used is reported to be less than "good";
    (v) The crosswind component for the runway to be used is in excess of 15 knots;
    (vi) Windshear is reported in the vicinity of the airport; and
    (vii) Any other condition in which the pilot in command determines it to be prudent to exercise the pilot in command's prerogative.

(b) No person may conduct operations under this section unless, for that type aircraft, either the pilot in command or the second in command has at least 75 hours of line operating flight time. The ECAA may, upon application by the certificate holder, authorize deviations from the requirements of this paragraph (b) by an appropriate amendment to the operations specifications in any of the following circumstances:
  (1) A newly certificated certificate holder does not employ any pilots who meet the minimum requirements of this paragraph;
  (2) An existing certificate holder adds to its fleet a type aircraft not before proven for use in its operations; and
  (3) An existing certificate holder establishes a new domicile to which it assigns pilots who will be required to become qualified on the aircraft operated from that domicile.

121.439 Pilot qualification: Recent experience

(a) No certificate holder may use any person nor may any person serve as a required pilot cockpit crewmember, unless within the preceding 90 days, that person has made at least three takeoffs and landings in the type aircraft in which that person is to serve. The takeoffs and landings required by this paragraph may be performed in a visual simulator approved under subpart N to include takeoff and landing maneuvers. In addition, any person who fails to make the three required takeoffs and landings within any consecutive 90 days period must reestablish recency of experience as provided in paragraph (b) of this section.

(b) In addition to meeting all applicable training and checking requirements of this Part, a required pilot cockpit crewmember who has not met the requirements of paragraph (a) of this section must reestablish recency of experience as follows:
  (1) Under the supervision of a check airman, make at least three takeoffs and landings in the type aircraft in which that person is to serve or in an advanced simulator or visual simulator. When a visual simulator is used, the requirements of paragraph (c) of this section must be met;
  (2) The takeoffs and landings required in paragraph (b)(1) of this section must include;
    (i) At least one takeoff with a simulated failure of the most critical powerplant;
    (ii) At least one landing from an ILS approach to the lowest ILS minimum authorized for the certificate holder; and
    (iii) At least one landing to a full stop.

(c) A required pilot cockpit crewmember who performs the maneuvers prescribed in paragraph (b) of this section in a visual simulator must:
  (1) Have previously logged 100 hours of flight time in the same type aircraft in which he is to serve; and
  (2) Be observed on the first two landings made in operations under this section by an approved check airman who acts as pilot in command and occupies a pilot seat. The landings must be made in weather minimums that are not less than those contained in

the certificate holder's operations specifications for category I operations, and must be made within 45 days following completion of simulator training.

(d) When using a simulator to accomplish any of the requirements of paragraph (a) or (b) of this section, each required cockpit crewmember position must be occupied by an appropriately qualified person and the simulator must be operated as if in a normal in-flight environment without use of the repositioning features of the simulator.

(e) A check airman who observes the takeoffs and landings prescribed in paragraphs (b)(1) and (c) of this section shall certify that the person being observed is proficient and qualified to perform flight duty in operations under this Part and may require any additional maneuvers that are determined necessary to make this certifying statement.

(f) When Pilot-in-command or a co-pilot is flying several variants shall:

(1) The ECAA allow such pilots to fly several variants of the same type of aero plane with similar characteristics in terms of operating procedures, systems and handling.

(2) The ECAA shall not allow such pilot to fly several variant of different types of aero planes,

(g) The ECAA shall not allow any pilot to act as a cruise relief pilot in a type or variant of a type of aero plane unless such pilot act in the capacity of pilot on command.

(h) When a pilot-in-command is flying several variants of the same type of helicopter or different types of helicopters with similar characteristics in terms of operating procedures, systems and handling, the ECAA will decide under which conditions of the above requirements for each variant or each type of helicopter can be combined.

(i) An operator shall not continue to utilize a pilot as a pilot-in-command on an operation unless, within the preceding 12 months, the pilot has made at least one representative flight as a pilot member of the flight crew, or as a check pilot, or as an observer on the flight deck. In the event that more than 12 months elapse in which a pilot has not made such a representative flight, prior to again serving as a pilot-in-command on that operation.

121.440 Pilot Line checks and Cabin Crew member competency checks

(a) Pilot line checks:

(1) No certificate holder may use any person nor may any person serve as pilot in command of an aircraft unless, within the preceding 12 calendar months, that person has passed a line check in which he/she satisfactorily performs the duties and responsibilities of a pilot in command in one of the types of aircraft he is to fly.

(2) A pilot in command line check for operations conducted under this Part must:

I. Be given by a pilot check airman who is currently qualified on both the route and the aircraft; and

II. Consist of at least one flight over a typical section of the certificate holder's route, or over a foreign or domestic airway, or over a direct route.

(3) A pilot in command line check for air taxi operations must:

I. Be given by a pilot check airman who is currently qualified on the aircraft; and

II. Consist of at least one flight over part of a domestic airway, foreign airway, or advisory route over which the pilot may be assigned.

(b) Cabin crew member competency checks:

(1) No certificate holder may use any person nor may any person serve as cabin crew member of an aircraft unless, each year that person has passed a cabin crew member inflight competency check in which he/she satisfactorily performs the duties and responsibilities of a cabin crew member on any of the types of aircraft he/she is certified.

(2) A cabin crew in flight competency check for operations conducted under this part must:

I. Be given by a cabin crew instructor / examiner who is currently certified.

II. Consists of at least one flight (2 sectors).

III. In flight competency check is valid for 12 months.

(3) A cabin crew competency check for air taxi operations must:

I. Be given by a cabin crew instructor who is currently qualified on the aircraft; and

II. Consist of at least one flight.
III. In flight competency check is valid for 12 months.

121.441 Proficiency checks

a) The operator shall ensure that piloting technique and the ability to execute emergency procedures is checked in such a way as to demonstrate the pilot's competence on each type or variant of a type of aeroplane/helicopter. Where the operation may be conducted under instrument flight rules, the operator shall ensure that the pilot's competence to comply with such rules is demonstrated to either a check pilot of the operator or to a representative of the ECAA. Such checks shall be performed twice within any period of one year. Any two such checks which are similar and which occur within a period of four consecutive months shall not alone satisfy this requirement.

Note 1.— Flight simulation training devices approved by the ECAA may be used for those parts of the checks for which they are specifically approved.
Note 2.— See the Manual of Criteria for the Qualification of Flight Simulation Training Devices *(Doc 9625).*

(b) Except as provided in paragraph (c) and (d) of this section, a proficiency check must meet the following requirements:
(1) It must include at least the procedures and maneuvers set forth in appendix F to this Part unless otherwise specifically provided in that appendix; and
(2) An approved pilot examiner or an approved check airman must administer it.

(c) An approved aircraft simulator or other appropriate training device may be used in the conduct of a proficiency check as provided in appendix F to this Part.

(d) A person giving a proficiency check may, at his discretion, waive any of the maneuvers or procedures for which a specific waiver authority is set forth in appendix F to this section if:
(1) The ECAA has not specifically required the particular maneuver or procedure to be performed;
(2) The pilot being checked is, at the time of the check, employed by a certificate holder as a pilot; and
(3) The pilot being checked is currently qualified for operations under this Part in the particular type aircraft and cockpit crewmember position or has, within the preceding six calendar months, satisfactorily completed an approved training program for the particular type aircraft.

(e) If the pilot being checked fails any of the required maneuvers, the person giving the proficiency check may give additional training to the pilot during the course of the proficiency check. In addition to repeating the maneuvers failed, the person giving the proficiency check may require the pilot being checked to repeat any other maneuvers he finds are necessary to determine the pilot's proficiency.

(f) If the pilot being checked is unable to demonstrate satisfactory performance to the person conducting the check, the certificate holder may not use him nor may he serve in operations under this Part until he has satisfactorily completed a proficiency check.

(g) However, the entire proficiency check (other than the initial second in command proficiency check) required by this section may be conducted in an approved visual simulator if the pilot being checked accomplishes at least two landings in the appropriate aircraft during a line check or other check conducted by a pilot check airman.

(h) A pilot in command may observe and certify the satisfactory accomplishment of these landings by a second in command. If a pilot proficiency check is conducted in accordance with this paragraph, the next required proficiency check for that pilot must be conducted in the same manner, or in accordance with appendix F of this Part, or a course of proficiency training in an aircraft visual simulator under section 121.409 may be substituted therefor.

(i) When an operator schedules flight crew on several variants of the same type of Aeroplane/helicopter or different types of Aeroplane/helicopters with similar characteristics in terms of operating procedures, systems and handling, the State shall decide under which conditions the above requirements for each variant or each type of Aeroplane/helicopter can be combined.

(j) Limitation of privileges in case of vested interests (Conflict of Interest): Examiners shall not conduct:
  (1) Proficiency checks, skill tests or assessments of competence of applicants for the issue/renew of a license, rating or certificate to whom they have provided more than 25% of the required flight instruction for the license, rating or certificate for which the proficiency check, skill test or assessment of competence is being taken; and
  (2) Proficiency checks, skill tests or assessments of competence whenever they feel that their objectivity may be affected. Examples of a situation where the examiner should consider if their objectivity is affected are when the applicant is a relative or a friend of the examiner, or when they are linked by economic interests or political affiliations, etc.

121.443 Pilot in command qualification: Route and airports

(a) Each certificate holder shall provide a system acceptable to the ECAA for disseminating the information required by paragraph (b) of this section to the pilot in command and appropriate flight operation personnel. The system must also provide an acceptable means for showing compliance with this subpart.

(b) No certificate holder may use any person, nor may any person serve, as pilot in command unless the certificate holder has provided that person current information concerning the following subjects pertinent to the areas over which that person is to serve, and to each airport and terminal area into which that person is to operate, and ensures that that person has adequate knowledge of, and the ability to use, the information:
  (1) Weather information and characteristics appropriate to the season;
  (2) Navigation facilities and the procedures applicable to the areas of operation;
  (3) Communication procedures applicable to the area of operations;
  (4) Terrain and obstacles applicable to the areas of operation;
  (5) Minimum safe altitudes applicable to the areas of operation;
  (6) En route and terminal area arrival and departure procedures, holding procedures and authorized instrument approach procedures for all applicable airports;
  (7) Search and rescue procedures specific to the areas of operation;
  (8) Congested areas and physical layout of each airport and terminal areas which may be used; and
  (9) All applicable notices to airmen.

(c) A pilot-in-command for helicopter shall have made a flight, representative of the operation with which the pilot is to be engaged which must include a landing at a representative heliport, as a member of the flight crew and accompanied by a pilot who is qualified for the operation.

(d) A pilot-in-command shall have made an actual approach into each aerodrome of landing on the route, accompanied by a pilot who is qualified for the aerodrome, as a member of the flight crew or as an observer on the flight deck, unless:
  (1) the approach to the aerodrome is not over difficult terrain and the instrument approach procedures and aids available are similar to those with which the pilot is familiar, and a margin to be approved by the ECAA is added to the normal operating minima, or there is reasonable certainty that approach and landing can be made in visual meteorological conditions; or
  (2) the descent from the initial approach altitude can be made by day in visual meteorological conditions; or
  (3) the operator qualifies the pilot-in-command to land at the aerodrome concerned by means of an adequate pictorial presentation; or
  (4) the aerodrome concerned is adjacent to another aerodrome at which the pilot-in-command is currently qualified to land.

(e) The operator shall maintain a record, sufficient to satisfy the ECAA of the qualification of the pilot and of the manner in which such qualification has been achieved

(f) In the event that more than 12 months elapse in which a pilot-in-command has not made such a trip on a route in close proximity and over similar terrain, within such a specified area, route or aerodrome, and has not practiced such procedures in a training device which is adequate for this purpose, prior to again serving as a pilot-in-command within that area or on that route, that pilot must requalify in accordance with (b) and (d) above.

(g) The ECAA allows an operator to schedule flight crew on several variants of the same type of aeroplane or helicopter with similar characteristics in terms of operating procedures, systems and handling,

121.444 Single pilot operations under the instrument flight rules (IFR) or at night

The requirements of experience, recency and training applicable to the pilot-in-command as single pilot operations intended to be carried out under the IFR or at night as follow:

(a) For operations under the IFR or at night, have accumulated at least 50 hours flight time on the class of aero plane, of which at least 10 hours shall be as pilot-in-command;

(b) For operations under the IFR, have accumulated at least 25 hours flight time under the IFR on the class of aero plane, which may form part of the 50 hours flight time in sub-paragraph a);

(c) For operations at night, have accumulated at least 15 hours flight time at night, which may form part of the 50 hours flight time in sub-paragraph a);

(d) For operations under the IFR, have acquired recent experience as a pilot engaged in a single pilot operation under the IFR of:

(1) at least five IFR flights, including three instrument approaches carried out during the preceding 90 days on the class of aero plane in the single pilot role; or

(2) an IFR instrument approach check carried out on such an aero plane during the preceding 90 days;

(e) For operations at night, have made at least three take-offs and landings at night on the class of aero plane in the single pilot role in the preceding 90 days; and

(f) Have successfully completed training programmes that include, in addition to the requirements of 121.401, passenger briefing with respect to emergency evacuation, autopilot management, and the use of simplified in-flight documentation.

(g) The initial and recurrent flight training and proficiency checks indicated in 121.401 and 121.441 shall be performed by the pilot-in-command in the single pilot role on the class of aero plane in an environment representative of the operation.

121.445 Pilot in command airport qualification: Special areas and airports

The ECAA may determine that certain airports, because of surrounding terrain, obstructions, or complex approach or departure procedures, require special airport qualifications. Also, certain areas or certain routes, or both, may be designated as requiring special navigation qualification. All certificate holders must maintain comprehensive records that verify the special qualifications listed below have been met:

(a) Except as provided in paragraph (c) of this section, no certificate holder may use any person, nor may any person serve, as pilot in command to or from an airport determined to require special airport qualifications unless, within the preceding 12 calendar months:

(1) The pilot in command or second in command has made an entry to that airport (including a takeoff and landing) while serving as a pilot cockpit crewmember; or

(2) The pilot in command has qualified by using pictorial means acceptable to the ECAA for that airport.

(b) Paragraph (b) of this section does not apply when an entry to that airport (including a takeoff or a landing) is being made if the ceiling at that airport is at least 1,000 feet above the lowest MEA or MOCA, or initial approach altitude prescribed for the instrument approach procedure for that airport, and the visibility at that airport is at least 3 miles.

(c) No certificate holder may use any person, nor may any person serve, as pilot in command between terminals over a route or area that requires a special type of navigation qualification unless, within the preceding 12 calendar months, that person has demonstrated qualification on the applicable navigation system in a manner acceptable to the ECAA, by one of the following methods:

(1) By flying over a route or area as pilot in command using the applicable special type of navigation system;

(2) By flying over a route or area as pilot in command under the supervision of a check airman using the special type of navigation system; and

(3) By completing the training program requirements of appendix G of this Part.

121.447 Flight crew equipment

A flight crew member assessed as fit to exercise the privileges of a licence, subject to the use of suitable correcting lenses, shall have a spare set of the correcting lenses readily available when exercising those privileges.

121.453 Flight engineer qualifications

(a) No certificate holder may use any person nor may any person serve as a flight engineer on an aircraft unless, within the preceding 6 calendar months, he has had at least 50 hours of flight time as a flight engineer on that type aircraft or the certificate holder or the ECAA has checked him on that type aircraft and determined that he is familiar and competent with all essential current information and operating procedures.

(b) A flight check given in accordance with subpart N of this Part satisfies the requirements of paragraph (a) of this section.

121.455 Use of prohibited drugs

(a) This section applies to persons who perform a function listed in appendix I to this section for the certificate holder or operator. For the purpose of this section, a person who performs such a function pursuant to a contract with the certificate holder or operator is considered to be performing that function for the certificate holder.

(b) No certificate holder or operator may knowingly use any person to perform, nor may any person perform for a certificate holder or operator, either directly or by contract, any function listed in appendix I to this section while that person has a prohibited drug, as defined in that appendix, in his or her system.

(c) No certificate holder or operator shall knowingly use any person to perform, nor shall any person perform for a certificate holder or operator, either directly or by contract, any safety-sensitive function if the person has a verified positive drug test result on or has refused to submit to a drug test required by appendix I to Part121 and the person has not met the requirements of appendix I for returning to the performance of safety-sensitive duties.

121.457 Testing for prohibited drugs

(a) Each certificate holder or operator shall test each of its employees who performs a function listed in appendix I to this section in accordance with that appendix.

(b) No certificate holder or operator may use any contractor to perform a function listed in appendix I to this section unless that contractor tests each employee performing such a function for the certificate holder or operator in accordance with that appendix. Each certificate holder shall submit drug testing program plan to the ECAA (specifying the procedures for all testing required by appendix I) not later than January 1, 2002. Each certificate holder shall implement its program not later than 30 days after approval of the program by the ECAA. In any case the final implementation date of this program shall not be later than March 1, 2002.

(d) Starting from September 1, 2001, ECAA may conduct random drug testing checks.

121.458 Misuse of alcohol

(a) General: This section applies to employees who perform a function listed in appendix J to this section for a certificate holder (covered employees). For the purpose of this section, a person who meets the definition of covered employee in appendix J is considered to be performing the function for the certificate holder.

(b) Alcohol concentration: No covered employee shall report for duty or remain on duty requiring the performance of safety-sensitive functions while having an alcohol concentration of 0.04 or greater. No certificate holder having actual knowledge that an employee has an alcohol concentration of 0.04 or greater shall permit the employee to perform or continue to perform safety-sensitive functions.

(c) On-duty use: No covered employee shall use alcohol while performing safety-sensitive functions. No certificate holder having actual knowledge that a covered employee is using alcohol while performing safety-sensitive functions shall permit the employee to perform or continue to perform safety-sensitive functions.

(d) Pre-duty use:

(1) No covered employee shall perform cockpit crewmember or cabin crew duties within 8 hours after using alcohol. No certificate holder having actual knowledge that such an employee has used alcohol within 8 hours shall permit the employee to perform or continue to perform the specified duties.

(2) No covered employee shall perform safety-sensitive duties other than those specified in paragraph (d)(1) of this section within 4 hours after using alcohol. No certificate holder having actual knowledge that such an employee has used alcohol within 4 hours shall permit the employee to perform or continue to perform safety-sensitive functions.

(e) Use following an accident. No covered employee who has actual knowledge of an accident involving an aircraft for which he or she performed a safety-sensitive function at or near the time of the accident shall use alcohol for 8 hours following the accident, unless he or she has been given a post-accident test under appendix J of this Part, or the employer has determined that the employee's performance could not have contributed to the accident.

(f) Refusal to submit to a required alcohol test. No covered employee shall refuse to submit to a post-accident, random, reasonable suspicion, or follow-up alcohol test required under appendix J to this Part. No certificate holder shall permit an employee who refuses to submit to such a test to perform or continue to perform safety-sensitive functions.

121.459 Testing for alcohol

(a) Each certificate holder must establish an alcohol misuse prevention program in accordance with the provisions of appendix J to this Part.

(b) No certificate holder shall use any person who meets the definition of covered employee in appendix J to this section to perform a safety-sensitive function listed in that appendix unless such person is subject to testing for alcohol misuse in accordance with the provisions of appendix J. Each certificate holder shall submit an alcohol misuse prevention program plan to the ECAA (specifying the procedures for all testing required by appendix J) not later than January 1, 2002. Each certificate holder shall implement its program not later than 30 days after approval of the program by the ECAA. In any case the final implementation date of this program shall not be later than March 1, 2002.

(c) Starting from September 1, 2001, ECAA may conduct random alcoholic testing.

121.460 Offenses involving Alcohol , drugs or Psychoactive Substances

(a) General. This section applies to an employee who performs a pilot or a cabin crew or a maintenance, or a dispatch functions for a Part 121 certificate holder, not operated by the Egyptian military.

(b) A conviction for the violation of any Egyptian Law, Rule or Regulation relating to the growing, processing, manufacture, sale, disposition, possession, transportation, or importation of narcotic drugs, marihuana, or depressant or stimulant drugs or Psychoactive Substances is grounds for:

(1) Suspension of an application for a certificate or rating issued under this Part for a period of 6 months after the date of that act if the commission of an act was for the first time; or

(2) Suspension of an application for any certificate or rating issued under this Part for a period of 1 year after the date of that act if the commission of an act was for the second time; or

(3) Revocation of any certificate or rating issued under this Part after the date of that act if the commission of an act was for the third time

(c) The commission of an act prohibited by Part 91.17or 91.18 or 91.19 or121. 121.455 457 or121.458or 121.459 is grounds for:

(1) Suspension of an application for a certificate or rating issued under this Part for a period of 6 months after the date of that act if the commission of an act was for the first time; or

(2) Suspension of an application for any certificate or rating issued under this Part for a period of 1 year after the date of that act if the commission of an act was for the second time; or

(3) Revocation of any certificate or rating issued under this Part after the date of that act if the commission of an act was for the third time.

121.461 Refusal to submit to a drug or alcohol test

(a) General. This section applies to an employee who performs a pilot or a cabin crew or a maintenance, or a dispatch functions for a Part 121 certificate holder, not operated by the Egyptian military.

(b) Refusal by the holder of a certificate issued under this Part to take a drug test or an alcohol test or Psychoactive Substances test is grounds for:

(1) Suspension of an application for any license or rating issued under this for a period of 6 months after the date of that act if the commission of an act was for the first time; or

(2) Suspension of an application for any license or rating issued under this a period of 1 year after the date of that act if the commission of an act was for the second time; or

(3) Revocation of any certificate or rating issued under this Part after the date of that act if the commission of an act was for the third time

SUBPART P
Aircraft dispatcher qualifications and duty time limitations
Air carriers

121.462 Applicability

This subpart prescribes the qualifications and duty time limitations for aircraft dispatchers for air carriers.

121.463 Aircraft dispatcher qualifications

(a) No air carrier may use any person, nor may any person serve, as an aircraft dispatcher for a particular aircraft group unless that person has, with respect to an aircraft of that group, satisfactorily completed the following:

(1) Initial dispatcher training, except that a person who has satisfactorily completed such training for another type aircraft of the same group need only complete the appropriate transition training.

(2) Operating familiarization consisting of at least 5 hours observing operations under this Part from the flight check or, for aircraft without an observer seat on the flight deck, from a forward passenger seat with headset or speaker. This requirement may be reduced to minimum of 2 1/2 hours by the substitution of one additional takeoff and landing for an hour of flight.

(b) No air carrier may use any person, nor may any person serve, as an aircraft dispatcher for a particular type aircraft unless that person has, with respect to that aircraft, satisfactorily completed differences training, if applicable.

(c) No air carrier may use any person, nor may any person serve, as an aircraft dispatcher unless within the preceding 12 calendar months the aircraft dispatcher has satisfactorily completed operating familiarization consisting of at least 5 hours observing operations under this Part in one of the types of aircraft in each group to be dispatched . This observation shall be made from the flight deck or, for airplanes without an observer seat on the flight deck, from a forward passenger seat with headset or speaker. The requirement of paragraph (a) of this section may be reduced to a minimum of 2 1/2 hours by the substitution of one additional takeoff and landing for an hour of flight. The requirement of this paragraph may be satisfied by observation of 5 hours of simulator training for each aircraft group in one of the simulators approved under 121.407 for the group. However, if the requirement of paragraph (a) is met by the use of a simulator, no reduction in hours is permitted.

(d) No air carrier may use any person, nor may any person serve, as an aircraft dispatcher to dispatch aircraft in operations under this Part unless the air carrier has determined that he is familiar with all essential operating procedures for that segment of the operation over which he exercises dispatch jurisdiction. However, a dispatcher who is qualified to

dispatch aircraft through one segment of an operation may dispatch aircraft through other segments of the operation after coordinating with dispatchers who are qualified to dispatch aircraft through those other segments. For the purposes of this section, the aircraft groups, terms, and definitions in 121.400 apply. No air carrier may authorize a dispatcher to have operational control without the approval of the dispatch system by the ECAA.

(e) No air operator may use any person, nor may any person serve, as a flight dispatcher in operations under this part in the helicopters unless that person has:

(1) Satisfactorily completed an operator-specific training course that addresses all the specific components of its approved method of control and supervision of flight operations.

Note.— Guidance on the composition of such training syllabi is provided in the Training Manual (Doc 7192), Part D-3 — Flight Operations Officers/Flight Dispatchers.

(2) Made within the preceding 12 months, as least a one-way qualification flight in a helicopter over any area for which that person is authorized to exercise flight supervision. The flight should include landings at as many heliports as practicable;

Note.— For the purpose of the qualification flight, the flight operations officer/flight dispatcher must be able to monitor the flight crew intercommunication system and radio communications, and be able to observe the actions of the flight crew.

(3) Demonstrated to the operator a knowledge of:

i) The contents of the operations manual described in Attachment H;
ii) The radio equipment in the helicopters used; and
iii) The navigation equipment in the helicopters used;

(4) Demonstrated to the operator a knowledge of the following details concerning operations for which the officer is responsible and areas in which that individual is authorized to exercise flight supervision:

(i) the seasonal meteorological conditions and the sources of meteorological information;
(ii) the effects of meteorological conditions on radio reception in the helicopters used;
(iii) the peculiarities and limitations of each navigation system which is used by the operation; and
(iv) the helicopter loading instructions;

(5) satisfied the operator as to knowledge and skills related to human performance as they apply to dispatch duties; and

(6) demonstrated to the operator the ability to perform the duties specified in.

121.465 Duty time limitations

(a) Each air carrier shall establish the daily duty period for a dispatcher so that it begins at a time that allows him to become thoroughly familiar with existing and anticipated weather conditions along the route before he dispatches any aircraft:

(1) No air carrier may schedule a dispatcher for more than 12 consecutive hours of duty;

(2) If a dispatcher is scheduled for more than 12 hours of duty in 24 consecutive hours, the carrier shall provide him a rest period of at least eight hours at or before the end of 12 hours of duty; and

(3) Each dispatcher must be relieved of all duty with the air carrier for at least 24 consecutive hours during any seven consecutive days or the equivalent thereof within any calendar month.

SUBPART Q
The Avoidance of Excessive Fatigue in Aircrew

121.470 Applicability

This subpart prescribes flight and duty time limitations and rest requirements for air carriers and air taxi operators to avoid excessive fatigue in the aircrews.

121.471 Flight and duty time limitations and rest requirements: All crewmembers

(a) No air carrier or air taxi may schedule any crewmember and no crewmember may accept an assignment for flight or duty time in scheduled air transportation or in other commercial flying except in accordance with a program of flight and duty time limitations approved by the ECAA**.**

(b) Each air carrier will prepare a program of flight and duty time limitations in accordance with the ECARs, to be submitted to the ECAA for approval.

121.473 Logging of pilot time

(a) Pilot in command flight time: An airline transport pilot may log as pilot in command, all of the flight time during which he acts as pilot in command.

(b) Second in command flight time: A pilot may log as second in command, all of the flight time during which he acts as second in command of an aircraft on which more than one pilot is required under the type certification of the aircraft.

(c) Pilots administrating line checks may log all hours on flight duty not at the controls while carrying out line check pilot duties.

121.475 Thru 121.499 Reserved

121.501 Definitions

(a) Standby Duty: A period of time when an operator places restraints on a crewmember who would otherwise be off duty. However, it shall not include any time during which an operator requires a crewmember to be available for the purpose of notifying him of a duty which is due to start 10 hours or more ahead.

(b) Flying Duty Period: Any duty period during which a crewmember flies in an aircraft as a member of its crew. The flying duty period starts at the time the crewmember is required by the operator to report for duty (other than standby) and includes such preflight and immediate post flight duties as are required by the operator.

(c) Duty Period: Any continuous period during which a crewmember flies in any aircraft, whether as a crewmember or as a passenger, at the behest of his employer, or otherwise carries out a required duty in the course of his employment. It includes any duty period, positioning at the behest of the operator, including all ground training, ground duties and standby duty.

(d) Local Night: A period of 8 hours falling between 2200 hours and 0800 hours local time.

(e) Rest Period: A period before starting a flying duty period which is intended to ensure that a crewmember is adequately rested before a flight.

(f) Days Off: Periods available for leisure and relaxation, not part of which forms any portion of a duty period. A single day off shall include two local nights. Consecutive days off shall include a further local night for each additional consecutive day off. A rest period may be included as part of a day off.

(g) Split Duty: A flying duty period that consists of two or more duty periods which are separated by less than a minimum rest period.

(h) Positioning: The practice of transferring crews from place to place as passengers in surface or air transport at the behest of the operator.

121.502 General principles of control of flight, duty and rest time

(a) The prime objective of any scheme of flight time limitations is to ensure that crewmembers are adequately rested at the beginning of each flying duty period. Aircraft operators will therefore need to take account of interrelated planning constraints on individual duty and rest periods, on the length of cycles of duty and the associated periods of time off and on cumulative duty hours within specific periods.

(b) Flight schedules must be realistic and the planning of duties must be designed to avoid any overruns of flying duty limits.

(c) The ECAA will conduct periodic and spot checks of operator's records and pilot in command reports to assess whether the operator's planning of flight schedules and duty in general is producing results which are compatible with the limitations provided for in the operator's scheme. The ECAA will make the necessary amendments and will maintain direct contact with the Aeromedical Council concerning any associated research or new developments in the areas of crewmember fatigue. The ECAA may volunteer its views and advice on particular problems concerning the avoidance of excessive fatigue.

(d) Time off must be planned to ensure that crews are notified of their allocation well in advance and also consecutive work patterns must be constructed to avoid undesirable rostering practices as alternating day / night duties and the positioning of crews in a manner likely to result in a serious disruption of established sleep/ work patterns.

(e) Responsibility for the proper control of flight duty does not rest on the operator alone. It is the responsibility of all crewmembers to make optimum use of the opportunities and facilities for rest provided by the operator, and to plan and use their rest periods properly so as to minimize the risk of fatigue. Crewmembers are also reminded that: A holder of a license shall not be entitled to undertake his duties if he knows or suspects that his physical or mental condition renders him temporarily unfit to perform his required duties. The license is to be suspended if the holder therefore has:
   (1) An injury preventing him to undertake his duties.
   (2) Any illness preventing him to undertake his duties.
   In such cases the holder of the license is required to inform the ECAA in written form for action to be taken regarding the medical test required for the renewal of the license.

(f) Standard provisions required for an operator's scheme of limitations:
   (1) The standard provisions the ECAA regards as the basis for an acceptable scheme of flight and duty limitations and which, if included in an operator's scheme will facilitate approval by the ECAA, are contained in this subpart.
   (2) Although operators are to plan their schemes in accordance with the requirements, it is recognized that the standard provisions will not necessarily be completely adaptable to every kind of operation. In exceptional circumstances, therefore, operators may request to have deviations from the standard provisions approved for their schemes.
   (3) However, such variations should be kept to a minimum and approval will only be granted where the operator can demonstrate that the proposed provision will ensure an equivalent level of protection against fatigue.

121.503 Limitations on single flying duty periods, cockpit crew

(a) The maximum rostered flight duty period (FDP), in hours, shall be in accordance with table A or B (two pilot crews, airplanes) or table C (single pilot crews, airplanes) or table D (helicopters). Rostering limits in the tables may be extended by in-flight relief or split duty under the terms of paragraphs 121.504, and 505. The pilot in command may at his discretion further extend the FDP actually worked in accordance with paragraph 121.508.

(b) Maximum FDP-two pilot crews or more airplanes. Table A shall apply when the FDP starts at a place where the crewmember is acclimatized to local time, and table B shall apply at other times. To be considered acclimatized for the purposes of this Part, a crewmember must be allowed 3 consecutive local nights free of duty within a local time zone band which is two hours wide. He will thereafter be considered to remain acclimatized to that same time zone band until he ends a duty period at a place where local time differs by more than two hours.

(c) FDP should not exceed 18 hours of night flying during 72 consecutive hours.

(d) FDP starts from one hour and 30; minutes before the time set for the departure of the flight or series of flights until 30 minutes after the end of the flight.

TABLE A

Acclimatized local time (cockpit crew members)

Local time	**Sectors**							***8 or***
Of start	**1**	**2**	**3**	**4**	**5**	**6**	**7**	More
0600-0759	13	12 ¼	11 ½	10 ¾	10	9 ¼	9	9
0800-1459	14	13 ¼	12 ½	11 ¾	11	10 ¼	9 ½	9
1500-2159	13	12 ¼	11 ½	10 ¾	10	9 ¼	9	9
2200-0559	11	10 ¼	9 ½	9	9	9	9	9

TABLE B

Not acclimatized to local time (cockpit crew members)

Length of preceding rest (hours)	**Sectors**						
	1	**2**	**3**	**4**		**6**	**7 Or More**
over 30	13	12 ¼	11 ½	10 ¾	0	9 ¼	9
Between 18 and 30	12	11 ¼	10 ½	9 ¾		9	9

TABLE C

Maximum FDP - single pilot crews airplanes (cockpit crew members)

Local time	**Sectors**				
OF START	**Up To 4**	**5**	**6**	**7**	**8 Or More**
0600-0759	10	9 ¼	8 ½	8	8
0800-1459	11	10 ¼	9 ½	8 ¾	8
1500-2159	10	9 ¼	8 ½	8	8
2200-0559	9	8 ¼	8	8	8

TABLE D

Maximum FDP – helicopters (cockpit crew members)

Local time Of Start	**Single pilot**		Two pilots	
	Maximum flying duty period Hr.	**Maximum flying time Hr.**	**Maximum flying duty period Hr.**	**Maximum flying time Hr.**
0600- 1659	10	7	12	9
1700- 0559	9	6	11	8

121.504 Extension of flying duty period by in- flight relief

(a) When any additional crewmember is carried to provide in-flight relief for the purpose of extending an FDP he shall hold qualifications which will meet the requirements of the operational duty for which he is required as a relief.

(b) When in-flight relief is provided there must be available, for the crewmember who is resting, a comfortable reclining seat or bunk separated and screened from the flight deck and passengers.

(c) A total of in-flight rest of less than three hours will not count towards extension of an FDP, but where the total of in-flight rest (which need not be consecutive) is three hours or more the rostered FDP may be extended beyond that permitted in tables A and B by:

If rest is taken in a bunk	**If rest is taken in a seat**
A period equal to one half of the total of rest taken, provided that the maximum FDP permissible shall be 18 hours (or 19 hours in case of Cabin crew)	A period equal to one third of the total of rest taken, provided that the maximum FDP permissible shall be 15 hours (or 16 hours in case of Cabin crew)

(d) Where a crew member undertakes a period of in-flight relief and after its completion is wholly free of duty for the remainder of the flight, that part of the flight following completion of duty may be classed as positioning and be subject to the provisions of positioning detailed in paragraph 121.506.

121.505 Extension of flying duty period by split duty

(a) When a FDP consists of two or more duties separated by less than a minimum rest period the FDP may be extended beyond that permitted in the Tables by the amounts indicated below:

Consecutive Hours Rest	Maximum Extension of the FDP
1- Less than 3 hours	Nil
2- From 3 hours to 10 hours	A period equal to half of the consecutive hours rest taken

(b) The rest period shall not include the time required for immediate post flight and pre-flight duties. When the rest period is not more than 6 hours it will be sufficient if a quiet and comfortable place is available, not open to the public, but if the rest period is more than 6 consecutive hours, then a bed must be provided.

121.506 Positioning

All time spent on positioning as required by the operator shall be considered as duty, but positioning shall not count as a sector when assessing the maximum permissible FDP. Positioning as required by the operator which immediately precedes a flying duty period, shall be included as part of the FDP for purpose of paragraph 121.503 (a).

121.507 Traveling time

(a) Where traveling time between the airport and sleeping accommodation provided by the operator exceeds thirty minutes each way, the rest period provided must be increased by the amount of the excess, or such lesser time as is consistent with a minimum of 10 hours at the sleeping accommodation.

(b) When crewmembers are required to travel from their home to an airport other than the one from which they normal operate, the assumed traveling time from the normal airport to the other airport shall be classed as positioning and will be subject to the provisions of positioning detailed in paragraph 121.506.

121.508 Pilot in command's' discretion to extend a flying duty period

(a) A pilot in command may, at his discretion, extend a FDP beyond the maximum normally permitted, provided he is satisfied that the flight can safely be made. In these circumstances the maximum normally permitted shall be 3 hours with the exception of emergencies.

(b) Whenever a pilot in command so exercises his discretion he shall report it to his employer. If the maximum normally permitted is exceeded by more than 2 hours both the pilot in command and the operator shall submit a written report to the ECAA within 30 days.
Note 1: Discretion reports either concerning extension of a flying duty or reduction of a rest period shall be submitted to the ECAA. Those reports will be used by the ECAA when assessing the realism of particular schedules.
Note 2: An emergency in respect of an extension of a flying duty is a situation which in the judgment of the pilot in command presents a serious risk to health or safety.

121.509 Delayed reporting time

Where crewmembers are informed of a delay before leaving their place of rest the FDP shall start at the new reporting time, or 4 hours after the original reporting time whichever is earlier. The maximum FDP shall be based on the original reporting time. This paragraph shall not apply if crew members are given 10 hours or more notice of a new reporting time.

121.510 Additional limits on helicopter flying

Pilots engaged on repetitive short sectors, at an average rate of 10 or more landings per hour, shall have a break of at least 30 minutes away from the aircraft within any continuous period of 3 hours.

121.511 Rest periods

(a) It is the responsibility of the aircraft operator to schedule and operate so that adequate and, within reason, uninterrupted rest can be obtained by the crewmembers. Away from base the operator must provide the opportunity and the facilities for the crewmembers to obtain adequate rest. It is the operator's responsibility to ensure that rest accommodation is satisfactory in respect of noise, temperature, light and ventilation. When operations are carried out at such short notice that is impracticable for the operator to ensure that rest accommodation is satisfactory, it will be the pilot in command's responsibility to obtain satisfactory accommodations.

(b) The minimum rest period which must be provided before undertaking a flying duty period shall be:
  (1) At least as long as the preceding duty period, or a minimum 12 hours whichever is greater.
  (2) If rest is away from the company's home operations base, then the minimum rest is 11 hours.
  (3) If the preceding duty period exceeded 18 hours, the minimum rest period must include a local night.

121.512 Pilot in command's discretion to reduce rest period

A pilot in command may, at his discretion reduce a rest period to below the minimum required by paragraph 121.511(b). The exercise of such discretion must be considered exceptional and should not be used to reduce successive rest periods. A rest period must be long enough to allow cockpit crewmembers at least 10 hours, and cabin crew at least 9 hours, at the accommodation where the rest is taken. When a rest period is reduced the pilot in command shall submit a report to his employer and if the reduction exceeds two hours, then both the operator (employer) and the pilot in command shall submit a written report to the ECAA within 30 days.

121.513 Standby duty

(a) The following limits shall apply:

Type of duty	Maximum duration
Standby duty (all cases)	12 hours
Standby plus FDP	20 hours

(b) The length of the minimum rest period after standby duty combined with FDP is equal to the proceeding FDP and standby duty combined, but not less than a minimum of 20 hours.

121.514 Days off

(a) A single day off shall include two local nights. Consecutive days off shall include a further local night for each additional consecutive day off.
(b) Crewmembers shall:
  (1) Not work more than seven consecutive days between days off;
  (2) Have 2 consecutive days off in any consecutive 14 days; and
  (3) Have a minimum of 6 days off in any consecutive 4 weeks.

121.515 Accumulative duty and flying hours

(a) Maximum cumulative duty hours: The weekly total of duty hours shall not exceed 50 hours. All types of duty, flying duty, ground duty, split duty, standby, office duty and positioning shall be counted in full for this purpose.
(b) Maximum monthly flying hours: the maximum number of flying hours which a cockpit crew member may be permitted to undertake during any 30 consecutive days shall be 100.
(c) Maximum annual flying hours: A person shall not act as a cockpit crewmember if the aggregate of his flight times in the period of 12 months expiring at the end of the previous month exceeds 900 hours.

Note: Flying hours includes all flying as cockpit crew except private flying in aircraft not exceeding 1600 kg maximum weight.

121.516 Cabin crew

(a) The requirements detailed in this section shall be applicable to all cabin crew required as crewmembers.
(b) The limitations, which shall be applied to cabin crew, are those contained in this section as applicable to cockpit crewmembers, with the following differences:
  (1) Rostered flying duty periods shall not be more than one hour longer than those permitted for cockpit crewmembers and contained in paragraph 121.503. In order to remove anomalies which might arise when cabin crew and cockpit crewmembers report at different times for the same flight, the maximum FDP for cabin crew shall be based on the time at which the cockpit crewmembers start their flying duty period.
  (2) Rostered minimum rest periods shall be not more than one hour shorter than those required by cockpit crewmembers and contained in 121.511.

(3) The combined sum of standby time and following FDP shall not exceed 21 hours, reference 121.513.
(4) The average weekly total of duty hours shall not exceed 55 hours, reference 121.515.
(5) The annual and 30 days limit of flying hours need not be applied reference 121.515.
(6) When any additional cabin crews are carried to provide in flight relief for the purpose of extending FDP, the required number of cabin crews shall be increased by 50% of the minimum number required, provided adequate seats are available on board the aircraft for the additional cabin crews.

121.517 Cabin crew required

The numbers of cabin crew required are stipulated in Part 121.391.

121.518 Records to be maintained

(a) Records must be kept of the duty and rest periods of all crewmembers. These records shall include the following for each crewmember:
(1) Duration of each flying duty period, and function performed during the period, duration of each duty period whether or not it includes a flying duty period, duration of each rest period prior to a flying duty standby duty period.
(2) Daily and weekly flying hours for each crewmember, and these records shall be preserved for at least 12 calendar months from the date of the relevant entry.
(b) Additionally, operators shall retain all pilot in command discretion reports of extended flying duty periods and reduced rest periods for a period of at least six months.

121.519 Pilot in command discretion report- reduction of rest

Note: All times to be recorded as date/time six-figure groups expressed in both GMT and Local Time.

Part A **Operator** **Aircraft Type**

Flight Number PIC
Date

Note: If discretion exercised for part crew or individual state name (s) and operating capacity below.

Part B

Last duty started	GMT/Local
Last duty ended	GMT/ Local
Rest aimed	Hours
Calculated earliest next available	GMT/ Local
Actual start or next FDP	
Rest period reduced by	
Crew affected	

Part C *PIC Report*

Signed----------
Date ----------

Operator Remarks/ Action

Signed----------
Date----------
Forwarded to ECAA
Filed

121.520 Voyage detailed

Schedule (Planned)				Actual		
	Place	GMT	Local		GMT	Local
Duty of start				Duty of start		
Arrive				Arrive		
Depart				Depart		
Depart				Depart		
Arrive				Arrive		
Depart				Depart		
Depart				Depart		
Arrive				Arrive		
Depart				Depart		
Depart				Depart		
FDP to end				FDP to end		
FDP				Actual FDP		
Max. permitted FDP						

Flying, and duty, rest period hours for pilot working in Aerial-Spray flying hours, under ECAR 137

A/C Type	Every 24 hours	Every Week	Every Month	Every 3 Months	Every Year
	Flying spray hours hours	Flying spray hours hours	Flying spray hours hours	Flying spray hours hours	Flying spray hours hours
Fixed wing A/C for spray with non-poisonous material	8 6	25 19	100 75	270 —	1100 —
Fixed wing for spray with poisonous material	**5 4**	**20 15**	**85 60**	**240 —**	**900 —**
Hel A/C for spray with non-poisonous material	**7 5**	**25 16**	**75 56**	**220 —**	**800 —**
Hel A/C for spray with poisonous material	**4 3**	**17 11**	**70 53**	**200 —**	**700 —**

121.521 through 121.529 Reserved

SUBPART T
Flight Operations

121.531 Applicability

(a) This subpart prescribes requirements for flight operations applicable to all certificate holders, except where otherwise specified.

(b) Operating facilities : An operator shall ensure that a flight will not be commenced unless it has been ascertained by every reasonable means available that the ground and/or water facilities including communication facilities and navigation aids available and directly required on such flight, for the safe operation of the aeroplane and the protection of the passengers , are adequate for the type of operation under which the flight is to be conducted. and are adequately operated for this purpose, "Reasonable means" is intended to denote the use, at the point of departure, of information available to the operator either through official information published by the aeronautical information services or readily obtainable from other sources.

(c) An operator shall ensure that any inadequacy of facilities observed in the course of operations is reported to the authority responsible for them, without undue delay.

(d) An operator, in making a decision on the adequacy of facilities and services available at an aerodrome of intended operation, should assess the level of safety risk associated with the aircraft type and nature of the operation, in relation to the availability of rescue and fire-fighting services (RFFS).

121.533 Responsibility for operational control

(a) Each certificate holder is responsible for operational control.

(b) The pilot in command and operations control are jointly responsible for the pre-flight planning and flight release of a flight in compliance with this Part and operations specifications.

(c) Operations control is responsible for:
  (1) Monitoring the progress of each flight;
  (2) Issuing necessary information for the safety of the flight; and
  (3) Canceling a flight if, in his opinion or the opinion of the pilot in command, the flight cannot operate or continue to operate safely as planned.

(d) Each pilot in command of an aircraft is, during flight time, in command of the aircraft and crewmembers and is responsible for the safety of the passengers, crewmembers, cargo, and aircraft.

(e) Each pilot in command has full control and authority in the operation of the aircraft, without limitation, over other crewmembers and their duties during flight time, whether or not he holds valid licenses authorizing him to perform the duties of those crewmembers.

(f) No pilot may operate an aircraft in a careless or reckless manner so as to endanger life or property.

(g) In the event of an emergency, a flight operations officer/flight dispatcher shall:
  (2) initiate such procedures as outlined in the operations manual while avoiding taking any action that would conflict with ATC procedures; and
  (3) convey safety-related information to the pilot-in-command that may be necessary for the safe conduct of the flight, including information related to any amendments to the flight plan that become necessary in the course of the flight.

  Note.— It is equally important that the pilot-in-command also convey similar information to the flight operations officer/flight dispatcher during the course of a flight, particularly in the context of emergency situations.

121.535 Checklists

(a) The operator shall provide operations staff and flight crew with an aircraft operating manual in accordance with 121.137, for each aircraft type operated, containing the normal, abnormal and emergency procedures relating to the operation of the aircraft. The manual shall include details of the aircraft systems and of the checklists to be used. The design of the manual shall observe Human Factors principles.

(b) The checklists provided in accordance with (a) shall be used by flight crews prior to, during and after all phases of operations, and in emergency, to ensure compliance with the operating procedures contained in the aircraft operating manual and the aeroplane flight

manual or other documents associated with the certificate of airworthiness and otherwise in the operations manual, are followed.

121.537 In-flight operational instructions

Operational instructions involving a change in the ATS flight plan shall, when practicable, be coordinated with the appropriate ATS unit before transmission to the aeroplane.

121.539 Operations notices

Each certificate holder shall notify its appropriate operations personnel of each change in equipment and operating procedures, including each known change in the use of navigation aids, air traffic control procedures and regulations, local airport traffic control rules, and known hazards to flight, including icing and other potentially hazardous meteorological conditions and irregularities with airport ground and navigation facilities.

121.541 Operations schedules: All operators

In establishing flight operations schedules, each operator shall allow enough time for the proper servicing of aircraft at intermediate stops, and shall consider the prevailing winds en route and the cruising speed of the type of aircraft used. This cruising speed may not be more than that resulting from the specified cruising output of the engines.

121.542 Cockpit crewmember duties

(a) No certificate holder shall require, nor may any cockpit crewmember perform, any duties during a critical phase of flight except those duties required for the safe operation of the aircraft. Duties such as company required calls made for such non-safety related purposes as ordering galley supplies and confirming passenger connections, announcements made to passengers promoting the air carrier or pointing out sights of interest, and filling out company payroll and related records are not required for the safe operation of the aircraft.

(b) No cockpit crewmember may engage in, nor may any pilot in command permit, any activity during a critical phase of flight which could distract any cockpit crewmember from the performance of his or her duties or which could interfere in any way with the proper conduct of those duties. Activities such as eating meals, engaging in nonessential conversations within the cockpit and nonessential communications between the cabin and cockpit crews, and reading publications not related to the proper conduct of the flight are not required for the safe operation of the aircraft.

(c) For the purposes of this section, critical phases of flight in the case of aeroplanes means the take-off run, the take-off flight path, the final approach, the missed approach, the landing, including the landing roll, and any other phases of flight as determined by the pilot-in- command or commander;

Note: Taxi is defined as: movement of an aircraft under its own power on the surface of an airport.

121.543 Cockpit crewmembers at controls

(a) Except as provided in paragraph (b) of this section, each required cockpit crewmember on flight deck duty must remain at the assigned duty station with seat belt fastened while the aircraft is taking off or landing, and while it is en route.

(b) A required cockpit crewmember may leave the assigned duty station:

(1) If the crewmember's absence is necessary for the performance of duties in connection with the operation of the aircraft;

(2) If the crewmember's absence is in connection with physiological needs; or

(3) If the crewmember is taking a rest period, and relief is provided:

(i) In the case of the assigned pilot in command during the en route cruise portion of the flight, by a pilot who holds an airline transport pilot license and an appropriate type rating, is currently qualified as pilot in command or second in command, and is qualified as pilot in command of that aircraft during the en route cruise portion of the flight. A second in command qualified to act as a pilot in command en route needs not have completed the following pilot in command requirements: The operating experience required by 121.434(c)(1); the line check required by 121.440; the pilot in command qualification; the route and airports required by 121.443; and the pilot in command airport qualification required by 121.445; and

(ii) In the case of the assigned second in command, by a pilot qualified to act as second in command of that aircraft during en route operations.

121.545 Manipulation of controls

No pilot in command may allow any person to manipulate the controls of an aircraft during flight nor may any person manipulate the controls during flight unless that person is:

(a) A qualified pilot of the certificate holder operating that aircraft; and

(b) A pilot of another certificate holder who has the permission of the pilot in command, is qualified in the aircraft, and is authorized by the certificate holder operating the aircraft.

121.547 Admission to flight deck

(a) No person may admit any person to the flight deck of an aircraft unless the person being admitted is:
   (1) A cockpit crewmember;
   (2) An ECAA inspector, who is performing official duties;
   (3) An employee of the ECAA, the certificate holder, or an aeronautical enterprise who has the permission of the pilot in command and whose duties are such that admission to the flight deck is necessary or advantageous for safe operation; or
   (4) Any person who has the permission of the pilot in command and is specifically authorized by the certificate holder's management or by the ECAA. Subparagraph (a)(2) of this paragraph does not limit the emergency authority of the pilot in command to exclude any person from the flight deck in the interests of safety.

(b) For the purposes of paragraph (a)(3) of this section, employees of the ECAA who deal with matters relating to safety and employees of the certificate holder whose efficiency would be increased by familiarity with flight conditions, may be admitted by the certificate holder. However, the certificate holder may not admit employees of traffic, sales, or other departments that are not directly related to flight operations, unless they are eligible under paragraph(a)(4) of this section.

(c) No person may admit any person to the flight deck unless there is a seat available for his use in the passenger compartment, except:
   (1) An ECAA inspector who is checking or observing flight operations;
   (2) An air traffic controller who is authorized by the ECAA to observe ATS procedures;
   (3) A licensed crewmember employed by the certificate holder whose duties require a license;
   (4) A licensed crewmember employed by another certificate holder whose duties with that carrier require a license and who is authorized by the certificate holder operating the aircraft to make specific trips over a route;
   (5) An employee of the certificate holder operating the aircraft whose duty is directly related to the conduct or planning of flight operations or the in-flight monitoring of aircraft equipment or operating procedures, if his presence on the flight deck is necessary to perform his duties and he has been authorized in writing by a responsible supervisor, listed in the operations manual as having that authority;
   (6) A technical representative of the manufacturer of the aircraft or its components whose duties are directly related to the in-flight monitoring of aircraft equipment or operating procedures, if his presence on the flight deck is necessary to perform his duties, and he has been authorized in writing by the responsible supervisor of the operations department of the certificate holder, listed in the Operations Manual as having that authority; and
   (7) Any person so authorized by the ECAA or the certificate holder's management.

121.548 ECAA inspector's credentials: Admission to pilot's compartment

Whenever, in performing the duties of conducting an inspection, an inspector of the ECAA presents inspector's credentials to the pilot in command of an aircraft operated by an air carrier or air taxi, the inspector must be given free and uninterrupted access to the pilot's compartment of that aircraft.

121.549 Flying equipment

(a) The pilot in command shall ensure that appropriate aeronautical charts containing adequate information concerning navigation aids and instrument approach procedures are aboard the aircraft for each flight.

(b) Each crewmember shall, on each flight have readily available for his use a flashlight that is in good working order.

121.551 Restriction or suspension of operation: All operators

When an air carrier or air taxi operator knows of conditions, including airport and runway conditions, that are a hazard to safe operations, it shall restrict or suspend operations until those conditions are corrected.

121.553 Safeguarding of cabin crew and passengers in pressurized aeroplanes in the event of loss of pressurization

Cabin crew should be safeguarded so as to ensure reasonable probability of their retaining consciousness during any emergency descent which may be necessary in the event of loss of pressurization and, in addition, they should have such means of protection as will enable them to administer first aid to passengers during stabilized flight following the emergency. Passengers should be safeguarded by such devices or operational procedures as will ensure reasonable probability of their surviving the effects of hypoxia in the event of loss of pressurization

121.555 Compliance with approved routes and limitations: Air carriers

No pilot may operate an aircraft in scheduled air transportation:

(a) Over any route or route segment unless it is specified in the air carrier's operations specifications; or

(b) Other than in accordance with the limitations in the operations specifications.

121.557 Emergencies: Air carriers

(a) In an emergency situation that requires an immediate decision and action, the pilot in command may take any action that he considers necessary under the circumstances. In such a case he may deviate from prescribed operations procedures and methods, weather minimums, and this Part, to the extent required in the interests of safety.

(b) In an emergency situation arising during flight that requires immediate decision and action by a dispatcher, and that is known to him, operations control shall advise the pilot in command of the emergency, shall ascertain the decision of the pilot in command, and shall have the decision recorded. If operations control cannot communicate with the pilot, they shall declare an emergency and take any action that they consider necessary under the circumstances.

(c) Whenever a pilot in command or operations control use emergency authority, they shall keep the appropriate ATS facility informed of the progress of the flight. The person that declared the emergency shall send a written report of any deviation through the certificate holder's operations manager to the ECAA. Operations control shall send their report within two days of the emergency and a pilot in command shall send their report within ten days of using the emergency authority.

121.559 Emergencies: Air taxis

(a) In an emergency situation that requires immediate decision and action, the pilot in command may take any action that he considers necessary under the circumstances. In such a case, he may deviate from prescribed operations, procedures and methods, weather minimums, and this Part, to the extent required in the interests of safety.

(b) In an emergency situation arising during flight that requires immediate decision and action by appropriate management personnel in the case of operations conducted with a flight following service and which is known to them, those personnel shall advise the pilot in command of the emergency, shall ascertain the decision of the pilot in command, and shall have the decision recorded. If they cannot communicate with the pilot, they shall declare an emergency and take any action that they consider necessary under the circumstances.

(c) Whenever emergency authority is exercised, the pilot in command or the appropriate management personnel shall keep the appropriate ground radio station fully informed of the progress of the flight. The person declaring the emergency shall send a written report of any deviation, through the operator's director of operations to the ECAA within 10 days after using their emergency authority.

121.561 Reporting potentially hazardous meteorological conditions and irregularities of ground and navigation facilities

(a) Whenever he encounters a meteorological condition or an irregularity in ground or navigational facility, in flight, the knowledge of which he considers essential to the safety of other flights, the pilot in command shall notify an appropriate ground station as soon as practicable.

(b) The ground radio station that is notified under paragraph (a) of this section shall report the information to the agency directly responsible for operating the facility.

121.563 Reporting mechanical irregularities

The pilot in command shall ensure that all mechanical irregularities occurring during flight time are entered in the maintenance log of the aircraft at the end of that flight sector. Before each flight the pilot in command shall ascertain the status of each irregularity entered in the log that resulted from the preceding flight.

121.565 Engine inoperative: Landing

(a) Except as provided in paragraph (b) of this section, whenever an engine of an aircraft fails or whenever the rotation of an engine is stopped to prevent possible damage, the pilot in command shall land the aircraft at the nearest suitable airport, in point of time, at which a safe landing can be made.

(b) If not more than one engine of an aircraft that has three or more engines fails or its rotation is stopped, the pilot in command may proceed to an airport that he selects if, after considering the following, he decides that proceeding to that airport is as safe as landing at the nearest suitable airport:
   (1) The nature of the malfunction and the possible mechanical difficulties that may occur if flight is continued;
   (2) The altitude, weight, and usable fuel at the time of engine stoppage;
   (3) The weather conditions en route and at possible landing points;
   (4) The air traffic congestion;
   (5) The kind of terrain; and
   (6) His familiarity with the airport to be used.

(c) The pilot in command shall report each stoppage of engine rotation or loss of engine power in flight to the appropriate ground radio station as soon as practicable and shall keep that station fully informed of the progress of the flight.

(d) If the pilot in command lands at an airport other than the nearest suitable airport, in point of time, he shall (upon completing the trip) send a written report, in duplicate, to his operations manager, or the director of operations stating his reasons for determining that his selection of an airport, other than the nearest airport, was as safe a course of action as landing at the nearest suitable airport. The operations manager or director of operations shall, within 10 days after the date of the incident, send a copy of this report with his comments to the ECAA charged with the overall inspection of the air carrier's operations.

121.567 Instrument approach procedures and IFR landing minimums

(a) No person may make an instrument approach at an airport except in accordance with IFR weather minimums and instrument approach procedures set forth in the certificate holder's operations specifications. An operator shall establish operational procedures designed to ensure that an aeroplane being used to conduct precision approaches crosses the threshold by a safe margin, with the aeroplane in the landing configuration and attitude.

(b) One or more instrument approach procedures designed in accordance with the classification of instrument approach and landing operations shall be approved and promulgated by the State in which the aerodrome is located to serve each instrument runway or aerodrome utilized for instrument flight operations.

(c) All aeroplanes operated in accordance with instrument flight rules shall comply with the instrument flight procedures approved by the State in which the aerodrome is located.

121.569 Equipment interchange: All operators

(a) Before operating under an interchange agreement, each operator shall show that:
   (1) The procedures for the interchange operation conform with this Part and with safe operating practices;

(2) Required crewmembers and dispatchers, if applicable, meet approved training requirements for the aircraft and equipment to be used and are familiar with the communications and dispatch procedures to be used;

(3) Maintenance personnel meet training requirements for the aircraft and equipment, and are familiar with the maintenance procedures to be used;

(4) Cockpit crewmembers and dispatchers meet appropriate route and airport qualifications; and

(5) The aircraft to be operated are essentially similar to the aircraft of the operator with whom the interchange is effected with respect to the arrangement and motion of controls that are critical to safety unless the ECAA determines differently. The ECAA will verify that the operator has adequate training programs to insure that any potentially hazardous dissimilarities are safely overcome by crewmember familiarization.

(b) Each operator shall include the pertinent provisions and procedures involved in the equipment interchange agreement in its manuals.

121.570 Aircraft evacuation capability

(a) No person may cause an aircraft carrying passengers to be moved on the surface, take off, or land unless each automatically deployable emergency evacuation assisting means, if required, installed pursuant to 121.310(a), is ready for evacuation.

(b) Each certificate holder shall ensure that, at all times passengers are on board prior to aircraft movement on the surface, at least one floor-level exit provides for the egress of passengers through normal or emergency means.

121.571 Briefing passengers before takeoff

(a) Each certificate holder operating a passenger-carrying aircraft shall ensure that all passengers are orally briefed in Arabic and English by the appropriate crewmember as follows:

(1) Before each takeoff, on each of the following:

(i) Smoking, Each passenger shall be briefed on when, where, and under what conditions smoking is prohibited. This briefing shall include a statement that the ECAR's require passenger compliance with the lighted passenger information signs, posted placards, areas designated for safety purposes as no smoking areas, and crewmember instructions with regard to these items. The briefing shall also include a statement that ECAR's prohibits tampering with, disabling, or destroying any smoke detector in an aircraft lavatory; smoking in lavatories; and, when applicable, smoking in passenger compartments;

(ii) The location of emergency exists;

(iii) The use of safety belts, including instructions on how to fasten and unfasten the safety belts. Each passenger shall be briefed on when, where, and under what conditions the safety belt must be fastened about that passenger. This briefing shall include a statement that the ECAR's require passenger compliance with lighted passenger information signs and crewmember instructions concerning the use of safety belts;

(iv) The location and use of any required emergency flotation means; and

(v) The location and use of any required oxygen equipment.

(2) After each takeoff, immediately before or immediately after turning the seat belt sign off, an announcement shall be made that passengers should keep their seat belts fastened, while seated, even when the seat belt sign is off.

(3) Except as provided in paragraph (a)(4) of this section, before each takeoff a cabin crew assigned to the flight shall conduct an individual briefing of each person who may need the assistance of another person to move expeditiously to an exit in the event of an emergency. In the briefing the cabin crew shall:

(i) Brief the person and his attendant, if any, on the routes to each appropriate exit and on the most appropriate time to begin moving to an exit in the event of an emergency; and

(ii) Inquire of the person and his attendant, if any, as to the most appropriate manner of assisting the person so as to prevent pain and further injury.

(4) The requirements of paragraph (a)(3) of this section do not apply to a person who has been given a briefing before a previous leg of a flight in the same aircraft when the

cabin crews on duty have been advised as to the most appropriate manner of assisting the person so to prevent pain and further injury.

(b) Each certificate holder shall carry on each passenger-carrying aircraft, in convenient locations for use of each passenger printed cards supplementing the oral briefing and containing:
  (1) Diagrams of, and methods of operating, the emergency exits; and
  (2) Other instructions necessary for use of emergency equipment. Each card required by this paragraph must contain information that is pertinent only to the type and model aircraft used for that flight.

(c) The certificate holder shall describe in its manual the procedure to be followed in the briefing required by paragraph (a) of this section.

121.572 Briefing passengers during flight

All passengers will be briefed as circumstances dictate in the event of an emergency situation during flight.

121.573 Briefing passengers: Extended overwater operations

(a) In addition to the oral briefing required by 121.571(a), each certificate holder operating an aircraft in extended overwater operations shall ensure that all passengers are orally briefed by the appropriate crewmember on the location and operation of life preserver, liferafts, and other flotation means, including a demonstration of the method of donning and inflating a life preserver.

(b) Each certificate holder shall carry on each passenger-carrying aircraft, in convenient locations for use of each passenger, printed cards supplementing the oral briefing and containing:
  (1) Diagrams of, and methods of operating, the emergency exits; and
  (2) Other instructions necessary for use of emergency equipment.
  Each card required by this paragraph must contain information that is pertinent only to the type and model aircraft used for that flight.

(c) The certificate holder shall describe in its manual the procedure to be followed in the briefing required by paragraph (a) of this section.

(d) The certificate holder shall describe in its manual the procedure to be followed in the briefing required by paragraph (a) of this section.

(e) If the aircraft proceeds directly over water after takeoff, the briefing required by paragraph (a) of this section must be done before takeoff.

(f) If the aircraft does not proceed directly over water after takeoff, not all of the briefing required by paragraph (a) of this section has to be given before takeoff but the entire briefing must be given before reaching the overwater portion of the flight.

121.574 Oxygen for medical use by passengers

(a) A certificate holder may allow a passenger to carry and operate equipment for the storage, generation, or dispensing of oxygen when the following conditions are met:
  (1) The equipment is:
    (i) Furnished by the certificate holder;
    (ii) Of an approved type;
    (iii) Maintained by the certificate holder in accordance with an approved maintenance program;
    (iv) Free of flammable contaminants on all exterior surfaces;
    (v) Capable of providing a minimum mass flow of oxygen to the user of four liters per minute;
    (vi) Constructed so that all values, fitting, and gauges are protected from damage; and
    (vii) Appropriately secured.
  (2) When the oxygen is stored in the form of a liquid, the equipment has been under the certificate holder's approved maintenance program since its purchase new or since the storage container was last purged.
  (3) When the oxygen is stored in the form of a compressed gas:
    (i) The equipment has been under the certificate holder's approved maintenance program since its purchase new or since the last hydrostatic test of the storage cylinder; and
    (ii) The pressure in any oxygen cylinder does not exceed the rated cylinder pressure.

(4) Each person using the equipment has a medical need to use it evidenced by a written statement to be kept in the person's possession signed by a licensed physician which specifies the maximum flow rate needed each hour and the maximum flow rate needed for the pressure altitude corresponding to the pressure in the cabin of the aircraft under normal operating conditions. This subparagraph does not apply to the carriage of oxygen in an aircraft in which the only passengers carried are persons who may have a medical need for oxygen during flight, no more than one relative or other interested person for each of those persons, and medical attendants.

(5) When a physician's statement is required by subparagraph (4) of this paragraph, the total quantity of oxygen carried is equal to the maximum quantity of oxygen needed each hour, as specified in the physician's statement, multiplied by the number of hours used to compute the amount of aircraft fuel required by this Part.

(6) The pilot in command is advised when the equipment is on board and when it is intended to be used.

(7) The equipment is stowed, and each person using the equipment is seated, so as not to restrict access to or use of any required emergency or regular exit or of the aisle in the passenger compartment.

(b) No person may, and no certificate holder may allow any person to, smoke within 10 feet of oxygen storage and dispensing equipment carried in accordance with paragraph (a) of this section.

(c) No certificate holder may allow any person to connect or disconnect oxygen dispensing equipment, to or from a gaseous oxygen cylinder while any passenger is aboard the aircraft.

(d) The requirements of this section do not apply to the carriage of supplemental or first-aid oxygen and related equipment required by this Part.

121.575 Alcoholic beverages

(a) (Reserved).

(b) No certificate holder may serve any alcoholic beverage to any person aboard any of its aircraft who:

(1) Appears to be intoxicated; and

(2) Has a deadly or dangerous weapon accessible to him while aboard the aircraft.

(c) No certificate holder may allow any person to board any of its aircraft if that person appears to be intoxicated.

(d) Each certificate holder shall, within five days after the incident, report to the ECAA the refusal of any person to comply with this section, or of any disturbance caused by a person who appears to be intoxicated aboard any of its aircraft.

121.576 Retention of items of mass in passenger and crew compartments

The certificate holder must provide and use means to secure each item of galley equipment and each serving cart, when not in use, and each item of crew baggage, which is carried in a passenger or crew compartment from becoming a hazard by shifting under the appropriate load factors corresponding to the emergency landing conditions under which the aircraft was type certificated.

121.577 Stowage of food, beverage, and passenger service equipment during aircraft movement on the surface, takeoff, and landing

(a) No certificate holder may move an aircraft on the surface, take off, or land when any food, beverage, or tableware furnished by the certificate holder is located at any passenger seat.

(b) No certificate holder may move an aircraft on the surface, take off or land unless each food and beverage tray and seat back tray table is secured in its stowed position.

(c) No certificate holder may permit an aircraft to move on the surface, take off, or land unless each passenger serving cart is secured in its stowed position.

(d) No certificate holder may permit an aircraft to move on the surface, take off, or land unless each movie screen that extends into an aisle is stowed.

(e) Each passenger shall comply with instructions given by a crewmember with regard to compliance with this section.

121.578 Aerodrome operating minima

1. ECAA shall require that the operator establish aerodrome operating minima for each aerodrome to be used in operations and shall approve the method of determination of such minima. Such minima shall not be lower than any that may be established for such aerodromes by the State of the Aerodrome, except when specifically approved by that State.

Note.— This Standard does not require the State of the Aerodrome to establish aerodrome operating minima.

1.1 ECAA shall authorize may approve operational credit(s) for operations with aeroplanes equipped with automatic landing systems, a HUD or equivalent displays, EVS, SVS or CVS. Where the operational credit relates to low visibility operations, the State of the Operator shall issue a specific approval. Such authorizations shall not affect the classification of the instrument approach procedure.

Note 1.— Operational credit includes:

(a) For the purposes of an approach ban (4.4.1.2), a minima below the aerodrome operating minima;

(b) Reducing or satisfying the visibility requirements; or

(c) Requiring fewer ground facilities as compensated for by airborne capabilities.

Note 2.— Guidance on operational credit for aircraft equipped with automatic landing systems, a HUD or equivalent displays, EVS, SVS and CVS is contained in Attachment I and in the Manual of All-Weather Operations (Doc 9365).

Note 3.— Information regarding a HUD or equivalent displays, including references to RTCA and EUROCAE documents, is contained in the Manual of All-Weather Operations (Doc 9365).

2. ECAA shall require that in establishing the aerodrome operating minima which will apply to any particular operation, the operator shall take full account of:

(a) The type, performance and handling characteristics of the aeroplane and any conditions or limitations stated in the flight manual

(b) The composition of the flight crew, their competence and experience;

(c) The dimensions and characteristics of the runways which may be selected for use;

(d) The adequacy and performance of the available visual and non-visual ground aids;

(e) The equipment available on the aeroplane for the purpose of navigation, acquisition of visual references and/or control of the flight path during the approach, landing and the missed approach;

(f) The obstacles in the approach and missed approach areas and the obstacle clearance altitude/height for the instrument approach procedures;

(g) The means used to determine and report meteorological conditions; and

(h) The obstacles in the climb-out areas and necessary clearance margins.

(i) the conditions prescribed in the operations specifications; and

(j) any minima that may be promulgated by ECAA.

3. Instrument approach operations shall be classified based on the designed lowest operating minima below which an approach operation shall only be continued with the required visual reference as follows:

(a) Type A: a minimum descent height or decision height at or above 75 m (250 ft); and

(b) Type B: a decision height below 75 m (250 ft). Type B instrument approach operations are categorized as:

(1) Category I (CAT I): a decision height not lower than 60 m (200 ft) and with either a visibility not less than 800 m or a runway visual range not less than 550 m;

(2) Category II (CAT II): a decision height lower than 60 m (200 ft) but not lower than 30 m (100 ft) and a runway visual range not less than 300 m;

(3) Category III (CAT III): a decision height lower than 30 m (100 ft) or no decision height and a runway visual range less than 300 m or no runway visual range limitations.

Note 1.— Where decision height (DH) and runway visual range (RVR) fall into different categories of operation, the instrument approach operation would be conducted in accordance with the requirements of the most demanding category (e.g. an operation with a DH in the range of CAT III but with an RVR in the range of CAT III would be considered a CAT IIIB operation or an operation with a DH in the range of CAT II but with an RVR in the range of CAT I would be

considered a CAT II operation). *This does not apply if the RVR and/or DH has been approved as operational credits.*

Note 2. — The required visual reference means that section of the visual aids or of the approach area which should have been in view for sufficient time for the pilot to have made an assessment of the aircraft position and rate of change of position, in relation to the desired flight path. In the case of a circling approach operation, the required visual reference is the runway environment.

Note 3.— Guidance on approach classification as it relates to instrument approach operations, procedures, runways and navigation systems is contained in the Manual of All-Weather Operations (Doc 9365).

4. ECAA shall issue a specific approval for instrument approach operations in low visibility which shall only be conducted when RVR information is provided.

Note.— Guidance on low visibility operations is contained in the Manual of All-Weather Operations (Doc 9365).

5 For take-off in low visibility, ECAA shall issue a specific approval for the minimum take-off RVR.

Note.— In general, visibility for take-off is defined in terms of RVR. An equivalent horizontal visibility may also be used.

6. The operating minima for 2D instrument approach operations using instrument approach procedures shall be determined by establishing a minimum descent altitude (MDA) or minimum descent height (MDH), minimum visibility and, if necessary, cloud conditions.

Note.— For guidance on applying a continuous descent final approach (CDFA) flight technique on non-precision approach procedures, refer to PANS-OPS (Doc 8168), Volume I, Part I, Section 4, Chapter 1, paragraph 1.7.

7. The operating minima for 3D instrument approach operations using instrument approach procedures shall be determined by establishing a decision altitude (DA) or decision height (DH) and the minimum visibility or RVR.

121.579 Minimum altitudes for use of autopilot

(a) Enroute operations: Except as provided in paragraphs (b) and(c) of this section, no person may use an autopilot enroute, including climb and descent, at an altitude above the terrain that is less than twice the maximum altitude loss specified in the aircraft flight manual for a malfunction of the automatic pilot under cruise conditions, or less than 500 feet, whichever is higher.

(b) Approaches: When using an instrument approach facility, no person may use an autopilot at an altitude above the terrain that is less than twice the maximum altitude loss specified in the aircraft flight manual for a malfunction of the autopilot under approach conditions, or less than 50 feet below the approved minimum descent altitude or decision height for the facility, whichever is higher, except:

(1) When reported weather conditions are less than the basic VFR weather conditions, no person may use an automatic pilot with an approach coupler for ILS approaches at an altitude above the terrain that is less than 50 feet higher than the maximum altitude loss specified in the aircraft flight manual for the malfunction of the automatic pilot with approach coupler under approach conditions; and

(2) When reported weather conditions are equal to or better than the basic VFR minimums, no person may use an automatic pilot with an approach coupler for ILS approaches at an altitude above the terrain that is less than the maximum altitude loss specified in the aircraft flight manual for the malfunction of the autopilot with approach coupler under approach conditions, or 50 feet, whichever is higher.

(c) Notwithstanding paragraph (a) or(b) of this section, the ECAA issues operations specifications to allow the use, to touchdown, of an approved flight control guidance system with automatic capability, in any case in which:

(1) The system does not contain any altitude loss (above zero) specified in the aircraft flight manual for malfunction of the autopilot with approach coupler; and

(2) The use of the system to touchdown will not otherwise affect the safety standards required by this section.

121.580 Heliport or landing location operating minima.

1. The operator shall establish operating minima for each heliport or landing location to be used in operations and the method of determination of such minima shall be approved by ECAA. Such minima shall not be lower than any that may be established for such heliports or landing locations by the State of the Aerodrome, except when specifically approved by that State.

Note.— This Standard does not require the State of the Aerodrome to establish operating minima.

2. ECAA may approve operational credit(s) for operations with helicopters equipped with automatic landing systems, a HUD or equivalent displays, EVS, SVS or CVS. Such approvals shall not affect the classification of the instrument approach procedure.

Note 1.— Operational credit includes:

(a) For the purposes of an approach ban (2.4.1.2), a minima below the heliport or landing location operating minima;

(b) Reducing or satisfying the visibility requirements; or

(c) Requiring fewer ground facilities as compensated for by airborne capabilities.

Note 2.— Guidance on operational credit for aircraft equipped with automatic landing systems, a HUD or equivalent displays, EVS, SVS and CVS is contained in Attachment I and in the Manual of All-Weather Operations (Doc 9365).

Note 3.— Information regarding a HUD or equivalent displays, including references to RTCA and EUROCAE documents, is contained in the Manual of All-Weather Operations (Doc 9365).

Note 4.— Automatic landing system — helicopter is an automatic approach using airborne systems which provide automatic control of the flight path, to a point aligned with the landing surface, from which the pilot can transition to a safe landing by means of natural vision without the use of automatic control.

3. ECAA shall require that in establishing the operating minima for each heliport or landing location which will apply to any particular operation, full account shall be taken of:

(a) The type, performance and handling characteristics of the helicopter;

(b) The composition of the flight crew, their competence and experience;

(c) The physical characteristics of the heliport, and direction of approach;

(d) The adequacy and performance of the available visual and non-visual ground aids;

(e) The equipment available on the helicopter for the purpose of navigation, acquisition of visual references and/or control of the flight path during the approach, landing and missed approach;

(f) The obstacles in the approach and missed approach areas and the obstacle clearance altitude/height for the instrument approach procedures;

(g) The means used to determine and report meteorological conditions; and

(h) The obstacles in the climb-out areas and necessary clearance margins.

4. Instrument approach operations shall be classified based on the designed lowest operating minima below which an approach operation shall only be continued with the required visual reference as follows:

(a) Type A: a minimum descent height or decision height at or above 75 m (250 ft); and

(b) Type B: a decision height below 75 m (250 ft). Type B instrument approach operations are categorized as:

(1) Category I (CAT I): a decision height not lower than 60 m (200 ft) and with either a visibility not less than 800 m or a runway visual range not less than 550 m;

(2) Category II (CAT II): a decision height lower than 60 m (200 ft), but not lower than 30 m (100 ft) and a runway visual range not less than 300 m;

(3) Category IIIA (CAT IIIA): a decision height lower than 30 m (100 ft) or no decision height and a runway visual range not less than 175 m;

(4) Category IIIB (CAT IIIB): a decision height lower than 15 m (50 ft), or no decision height and a runway visual range less than 175 m but not less than 50 m; and

(5) Category IIIC (CAT IIIC): no decision height and no runway visual range limitations.

Note 1.— Where decision height (DH) and runway visual range (RVR) fall into different categories of operation, the instrument approach operation would be conducted in accordance with the requirements of the most demanding category (e.g. an operation with a DH in the range of CAT IIIA but with an RVR in the range of CAT IIIB would be considered a CAT IIIB operation or an operation with a DH in the range of CAT II but with an RVR in the range of CAT I would be considered a CAT II operation).

Note 2.— The required visual reference means that section of the visual aids or of the approach area which should have been in view for sufficient time for the pilot to have made an assessment of the aircraft position and rate of change of position, in relation to the desired flight path. In the case of a circling approach operation the required visual reference is the runway environment.

Note 3.— Guidance on approach classification as it relates to instrument approach operations, procedures, runways and navigation systems is contained in the Manual of All-Weather Operations (Doc 9365).

5. Category II and Category III instrument approach operations shall not be authorized unless RVR information is provided.

6. Recommendation.— For instrument approach operations, heliport or landing location operating minima below 800 m visibility should not be authorized unless RVR information or an accurate measurement or observation of visibility is provided.

Note.— Guidance on the operationally desirable and currently attainable accuracy of measurement or observation is given in Annex 3, Attachment B.

7. The operating minima for 2D instrument approach operations using instrument approach procedures shall be determined by establishing a minimum descent altitude (MDA) or minimum descent height (MDH), minimum visibility and, if necessary, cloud conditions.

Note.— For guidance on applying a continuous descent final approach (CDFA) flight technique on non-precision approach procedures refer to PANS-OPS (Doc 8168) Volume I, Part I, Section 4, Chapter 1, paragraph 1.7.

8. The operating minima for 3D instrument approach operations using instrument approach procedures shall be determined by establishing a decision altitude (DA) or decision height (DH) and the minimum visibility or RVR.

121.581 Forward observer's seat: Enroute inspections

(a) Each certificate holder shall make available a seat on the flight deck of each aircraft for occupancy by the ECAA while conducting enroute inspections. The location and equipment of the seat, with respect to its suitability for use in conducting enroute inspections, is determined by the ECAA**.**

(b) In each aircraft that has more than one observer’s seat, in addition to the seats required for the crewmember complement for which the aircraft was certificated, the forward observer's seat or the observer’s seat selected by the ECAA must be made available when complying with paragraph(a) of this section.

121.583 Carriage of persons without compliance with the passenger-carrying requirements of this Part

(a) When authorized by the certificate holder, the following persons, but no others, may be carried aboard an aircraft without complying with the passenger-carrying aircraft requirements in 121.309(f), 121.310, 121.391 and 121.587; the passenger-carrying operation requirements in 121.157 (c). 121.161; and the requirements pertaining to passengers in 121.313 (f), 121.317, 121.547, and 121.573:

(1) A crewmember;

(2) A company employee;
(3) A ECAA inspector, who is performing official duties; and
(4) A person necessary for:
(i) The safety of the flight;
(ii) The handling of animals;
(iii) The safe handling of hazardous materials;
(iv) The security of valuable or confidential cargo;
(v) The preservation of fragile or perishable cargo;
(vi) Experiments on, or testing of, cargo containers or cargo handling devices;
(vii) The operation of special equipment for loading or unloading cargo; and
(viii) The loading or unloading of outsize cargo.
(5) A person described in paragraph (a)(4) of this section, when traveling to or from his assignment;
(6) A person performing duty as an honor guard accompanying a shipment made by or under the authority of the Arab Republic of Egypt;
(7) A military courier, military route supervisor, military cargo contract coordinator, or a cockpit crewmember of another military cargo contract air carrier or commercial operator, carried by a military cargo contract air carrier or commercial operator in operations under a military cargo contract, if that carriage is specifically authorized by the appropriate armed forces; and
(8) A dependent of an employee of the certificate holder when traveling with the employee on company business to or from outlying stations not served by adequate regular passenger flights.

(b) No certificate holder may operate an aircraft carrying a person covered by paragraph (a) of this section unless:
(1) Each person has unobstructed access from his seat to the cockpit compartment or to a regular or emergency exit;
(2) The pilot in command has a means of notifying each person when smoking is prohibited and when safety belts must be fastened; and
(3) The aircraft has an approved seat with an approved safety belt for each person. The seat must be located so that the occupant is not in any position to interfere with the cockpit crewmembers performing their duties.

(c) Before each takeoff, each certificate holder operating an aircraft carrying persons covered by paragraph(a) of this section shall ensure that all such persons have been orally briefed by the appropriate crewmember on:
(1) Smoking;
(2) The use of seat belts;
(3) The location and operation of emergency exits;
(4) The use of oxygen and emergency oxygen equipment; and
(5) For extended overwater operation, the location of liferafts, and the location and operation of life preservers including a demonstration of the method of donning and inflating a life preserver.

(d) Each certificate holder operating an aircraft carrying persons covered by paragraph (a) of this section shall incorporate procedures for the safe carriage of such persons into the operator's operations manual.

(e) The pilot in command may authorize a person covered by paragraph (a) of this section to be admitted to the cockpit compartment of the aircraft.

121.585 Exit seating

(a) Each certificate holder shall determine, to the extent necessary to perform the applicable functions of paragraph (d) of this section, the suitability of each person it permits to occupy an exit seat, in accordance with this section. For the purpose of this section:
(1) "Exit seat" means:
(i) Each seat having direct access to an exit; and
(ii) Each seat in a row of seats through which passengers would have to pass to gain access to an exit, from the first seat inboard of the exit to the first aisle inboard of the exit.
(2) A passenger seat having "direct access" means a seat from which a passenger can proceed directly to the exit without entering and aisle or passing around an obstruction.

(3) Each certificate holder shall make the passenger exit seating determinations required by this paragraph in a non-discriminatory manner consistent with the requirements of this section, by persons designated in the certificate holder's required operations manual.

(4) Each certificate holder shall designate the exit seats for each passenger seating configuration in its fleet in accordance with the definitions in this paragraph and submit those designations for approval as part of the procedures required to be submitted for approval under this section.

(b) No certificate holder may seat a person in a seat affected by this section if the certificate holder determines that it is likely that the person would be unable to perform one or more of the applicable functions listed in paragraph (d) of this section because:

(1) The person lacks sufficient mobility, strength, or dexterity in both arms and hands, and both legs:
- (i) To reach upward, sideways, and downward to the location of emergency exit and exit-slide operating mechanisms;
- (ii) To grasp and push, pull, turn, or otherwise manipulate those mechanisms;
- (iii) To push, shove, pull, or otherwise open emergency exits;
- (iv) To reach the emergency exit expeditiously;
- (v) To remove obstructions similar in size and weight to over wing exit doors;
- (vi) To lift out, hold, deposit on nearby seats, or maneuver over the seat backs to the wing window exit doors;
- (vii) To maintain balance while removing obstructions;
- (viii) To exit expeditiously;
- (ix) To stabilize an escape slide after deployment; or
- (x) To assist others in getting off and escape slide.

(2) The person is less than 15 years of age of the applicable functions listed in paragraph (d) of this section without the assistance of an adult companion, parent, or other relative;

(3) The person lacks the ability to read and understand instructions required by this section and related to emergency evacuation provided by the certificate holder in printed or graphic form or the ability to understand oral crew commands;

(4) The person lacks sufficient visual capacity to perform one or more of the applicable functions in paragraph (d) of this section without the assistance of visual aids beyond contact lenses or eyeglasses;

(5) The person lacks sufficient aural capacity to hear and understand instructions shouted by cabin crews, without assistance beyond a hearing aid;

(6) The person lacks the ability adequately to impart information orally to other passengers; or

(7) The person has:
- (i) A condition or responsibilities, such as carrying for small children, that might prevent the person from performing one or more of the applicable functions listed in paragraph (d) of this section; or
- (ii) A condition that might cause the person harm if he or she performs one or more of the applicable functions listed in paragraph (d) of this section.

(c) Each passenger shall comply with instructions given by a crewmember or other authorized employee of the certificate holder implementing exit seating restriction established in accordance with this section.

(d) Each certificate holder shall include on passenger information cards, presented in the language in which briefings and oral commands are given by the crew, at each exit seat affected by this section, information that, in the event of an emergency in which a crewmember is not available to assist, a passenger occupying an exit row seat may use if called upon to perform the following functions:

(1) Locate the emergency exit;
(2) Recognize the emergency exit opening mechanism;
(3) Comprehend the instructions for operating the emergency exit;
(4) Operate the emergency exit;
(5) Assess whether opening the emergency exit will increase the hazards to which passengers may be exposed;
(6) Follow oral directions and hand signals given by a crewmember;
(7) Stow or secure the emergency exit door so that it will not impeded use of the exit;

(8) Assess the condition of an escape slide, activate the slide, and stabilize the slide after deployment to assist others in getting off the slide;
(9) Pass expeditiously through the emergency exit; and
(10) Assess, select, and follow a safe path away from the emergency exit.

(e) Each certificate holder shall make available for inspection by the public at all passenger loading gates and ticket counters at each airport where it conducts passenger operations, written procedures established for making determinations in regard to exit row seating.

(f) Each certificate holder may allow taxi or pushback unless at least one required crewmember has verified that no exit seat is occupied by a person the crewmember determines is likely to be unable to perform the applicable functions listed in paragraph (d) of this section.

(g) [Reserved].

(h) In the event a certificate holder determines, in accordance with this section, that it is likely that a passenger assigned to an exit seat would be unable to perform the functions listed in paragraph(d) of this section or a passenger requests a non-exit seat, the certificate holder shall expeditiously relocate the passenger to a non-exit seat.

(i) In event of full booking in the non-exit seats and if necessary to accommodate a passenger being relocated from an exit seat, the certificate holder shall move a passenger who is willing and able to assume the evacuation functions that may be required, to an exit seat.

(j) A certificate holder may deny transportation to any passenger under this section only because:
(1) The passenger refuses to comply with instructions given by a crewmember or other authorized employee of the certificate holder implementing exit seating restriction established in accordance with this section; or
(2) The only seat that will physically accommodate the person's handicap is an exit seat.

(k) In order to comply with this section certificate holders shall:
(1) Establish procedures that address:
(i) The criteria listed in paragraph (b) of this section;
(ii) The criteria listed in paragraph (d) of this section;
(iii) The requirements for airport information, passenger information cards, crewmember verification of appropriate seating in exit seats, passenger briefings, seat assignments, and denial of transportation as set forth in this section; and
(iv) How to resolve disputes arising from implementation of this section, including identification of the certificate holder employee on the airport to whom complaints should be addressed for resolution.
(2) Submit their procedures for preliminary review and approval to the operations inspectors assigned to them at the ECAA.

(l) Certificate holders shall assign seats prior to boarding consistent with the criteria listed in paragraph (b) and the functions listed in paragraph (d) of this section, to the maximum extent feasible.

121.586 Authority to refuse transportation

(a) No certificate holder may refuse transportation to passenger on the basis that, because the passenger may need the assistance of another person to move expeditiously to and exit in the event of an emergency, his transportation would or might be opposed to safety of flight unless:
(1) The certificate holder has established procedures (including reasonable notice requirements) for the carriage of passengers who may need the assistance of another person to move expeditiously to an exit in the event of an emergency; and
(2) At least one of the following conditions exist:
(i) Passenger fails to comply with the notice requirements in the certificate holder's procedures; and
(ii) The passenger cannot be carried in accordance with the certificate holder’s procedures.

(b) Each certificate holder shall provide the ECAA section charged with the overall inspection of its operations with a copy of each procedure it establishes in accordance with paragraph (a)(2) of this section.

(c) Whenever the ECAA finds that revisions in the procedures described in paragraph (a)(2) of this section are necessary in the interest of safety or in the public interest, the certificate holder, after notification by the ECAA, shall make those revisions in the procedures.

Within 30 days after the certificate holder receives such notice, it may file a petition to reconsider the notice with the ECAA section charged with the overall inspection of the certificate holder's operations. The filing of a petition to reconsider stays the notice pending a decision by the ECAA. However, if the ECAA finds that there is an emergency that requires immediate action in the interest of safety in air commerce, he may, upon a statement of the reasons, require a change effective without stay.

(d) Each certificate holder shall make available to the public at each airport it serves a copy of each procedure it establishes in accordance with paragraph (a)(1) of this section.

121.587 Closing and locking of cockpit crew compartment door

(a) Except as provided in paragraph (b) of this section, the pilot in command of a large aircraft carrying passengers shall ensure that the door separating the cockpit crew compartment from the passenger compartment is closed and locked during all operations conducted below 10,000 feet MSL.

(b) The provisions of paragraph (a) of this section do not apply:
   (1) During takeoff and landing if the cockpit compartment door is the means of access to a required passenger emergency exit or a floor level exit; or
   (2) At any time that it is necessary to provide access to the cockpit crew or passenger compartment, to a crewmember in the performance of those duties or for a person authorized admission to the cockpit crew compartment under 121.547.

121.589 Carry-on baggage

(a) No certificate holder may allow the boarding of carry-on baggage on an aircraft unless each passenger's baggage has been scanned to control the size and amount carried on board in accordance with an approved carry-on baggage program in its operations specifications. In addition, no passenger may board an aircraft if his/her carry-on baggage exceeds the baggage allowance prescribed in the carry-on baggage program in the certificate holder's operations specifications.

(b) No certificate holder may allow all passenger entry doors of an aircraft to be closed in preparation for taxi or pushback unless at least one required crewmember has verified that each article of baggage is stowed and secured in accordance with this section.

(c) No certificate holder may allow an aircraft to take off or land unless each article of baggage is stowed:
   (1) In suitable closet or baggage or cargo stowage compartment placarded for its maximum weight and providing proper restraint for all baggage or cargo stowed within, and in a manner that does not hinder the possible use of any emergency equipment; or.
   (2) Under a passenger seat.

(d) Baggage, other than articles of loose clothing, may not be placed in an overhead rack unless that rack is equipped with approved restraining devices or doors.

(e) Each passenger must comply with instruction given by crewmembers regarding compliance with this section.

(f) Each passenger seat under which baggage is allowed to be stowed shall be fitted with a means to prevent articles of baggage stowed under it from sliding forward. In addition, each aisle seat shall be fitted with a means to prevent articles of baggage stowed under it from sliding sideward into the aisle under crash impacts severe enough to induce the ultimate inertial forces specified in the emergency landing condition regulations under which the aircraft was type certificated.

(g) In addition to the methods of stowage in paragraph(c) of this section, flexible travel canes carried by blind individuals may be stowed:
   (1) Under any series of connected passenger seats in the same row, if the cane does not protrude into an aisle and if the cane is flat on the floor;
   (2) Between a non emergency exit window seat and the fuselage, if the cane is flat on the floor;
   (3) Beneath any two non emergency exit window seats, if the cane if flat on the floor; or
   (4) In accordance with any other method approved by the ECAA.

SUBPART U
Dispatching and Flight Release Rules

121.591 Applicability

This subpart prescribes dispatching rules for air carriers and flight release rules for air taxi operators.

121.593 Reserved

121.595 Dispatching authority: Air carriers

(a) No person may start a flight unless operations control specifically authorizes that flight.

(b) No person may continue a flight from an intermediate airport without re-dispatch if the aircraft has been on the ground more than six hours.

121.597 Flight release authority: Air taxis

(a) No person may start a flight under a flight following system without specific authority from the person authorized by the operator to exercise operational control over the flight.

(b) No person may start a flight unless the pilot in command and the person authorized by the operator to exercise operational control over the flight have executed a flight release setting forth the conditions under which the flight will be conducted.

121.599 Familiarity with weather conditions

(a) Air carriers: Operations control may not release a flight unless they are thoroughly familiar with reported and forecast weather conditions on the route to be flown.

(b) Air taxis: No pilot in command may begin a flight unless he is thoroughly familiar with reported and forecast weather conditions on the route to be flown.

121.601 Operations control information to pilot in command: Air carriers

(a) Operations control shall provide the pilot in command all available current reports or information on airport conditions and irregularities of navigation facilities that may affect the safety of the flight.

(b) Before beginning a flight, operations control shall provide the pilot in command with all available weather reports and forecasts of weather phenomena that may affect the safety of flight, including adverse weather phenomena, such as clear air turbulence, thunderstorms, and low altitude wind shear, for each route to be flown and each airport to be used.

(c) During a flight, operations control shall provide the pilot in command any additional available information of meteorological conditions, including adverse weather phenomena, such as clear air turbulence, thunderstorms, and low altitude wind shear, and irregularities of facilities and services, that may affect the safety of the flight.

121.603 Facilities and services: Air taxis

(a) Before beginning a flight, each pilot in command shall obtain all available current reports or information on airport conditions and irregularities of navigation facilities that may affect the safety of the flight.

(b) During a flight, the pilot in command shall obtain any additional available information of meteorological conditions and irregularities of facilities and services that may affect the safety of the flight.

121.605 Aircraft equipment

No person may dispatch or release an aircraft unless it is airworthy and is equipped as prescribed in this Part.

121.607 Communication and navigation facilities: Air carriers

(a) Except as provided in paragraph (b) of this section, no person may dispatch an aircraft over an approved route or route segment unless the communication and navigation facilities required by 121.99 and 121.103 for the approval of that route or segment are in satisfactory operating condition.

(b) If, because of technical reasons or other reasons beyond the control of an air carrier, the facilities required by 121.99 and 121.103 are not available over a route or route segment, the air carrier may dispatch an aircraft over that route segment if the pilot in command and

operations control find that communication and navigation facilities equal to those required are available and are in satisfactory operating condition.

121.609 Communication and navigation facilities: Air taxis

No person may conduct a flight over any route or route segment unless communication and navigation facilities equal to those required by 121.99 and 121.103 are in satisfactory operating condition.

121.611 Dispatch or flight release under VFR

No person may dispatch or release an aircraft for authorized VFR operation unless the ceiling and visibility enroute, as indicated by available weather reports or forecasts, or any combination thereof, are and will remain at or above applicable VFR minimums until the aircraft arrives at the airport or airports specified in the dispatch flight release.

121.613 Dispatch or flight release under IFR

Except as provided in 121.615, no person may dispatch or release and aircraft for operations under IFR, unless appropriate weather reports or forecasts, or any combination thereof, indicate that the weather conditions will be at or above the authorized minimums at the estimated time of arrival at the airport or airports to which dispatched or released.

121.615 Dispatch or flight release over water: All operators

(a) No person may dispatch or release an aircraft or conduct a flight that involves extended overwater operation unless appropriate weather reports or forecasts, or any combination thereof, indicate that the weather conditions will be at or above the authorized minimums at the estimated time of arrival at any airport to which dispatched or released or to any required alternate airport.

(b) Each operator shall conduct extended overwater operations under IFR unless it shows that operating under IFR is not necessary for safety.

(c) Each commercial operator shall conduct other overwater operations under IFR if the ECAA determines that operation under IFR is necessary for safety.

(d) Each authorization to conduct extended overwater operations under VFR and each requirement to conduct other overwater operation under IFR will be specified in the operator's operations specifications.

121.617 Alternate airport for departure

(a) If the weather conditions at the airport of takeoff are below the landing minimums in the certificate holder's operations specifications for that airport, no person may dispatch or release an aircraft from that airport unless the dispatch or flight release specifies an alternate airport located within the following distances from the airport of takeoff:

The take-off alternate aerodrome shall be located within the following flight time from the aerodrome of departure:

(1) For aero planes with two engines, one hour of flight time at a one-engine- inoperative cruising speed, determined from the aircraft operating manual, calculated in ISA and still-air conditions using the actual take-off mass

(2) For aero planes with three or more engines, two hours of flight time at an all engines operating cruising speed, determined from the aircraft operating manual, calculated in ISA and still-air conditions using the actual take-off mass;

(3) For aero planes engaged in extended diversion time operations (EDTO) where an alternate aerodrome meeting the distance criteria of a) or b) is not available, the first available alternate aerodrome located within the distance of the operator’s specified maximum diversion time considering the actual take-off mass.

(b) For the purposes of paragraph (a) of this section, the alternate airport weather conditions must meet the requirements of the certificate holder's operations specifications.

(c) No person may dispatch or release an aircraft from an airport unless he lists each required alternate airport in the dispatch or flight release.

(d) A flight shall not proceed beyond the threshold time unless the identified en-route alternate aerodromes have been re-evaluated for availability and the most up-to-date information indicates that, during the estimated time of use, conditions at those aerodromes will be at or above the operator’s established aerodrome operating minima for the operation. If any

conditions are identified that would preclude a safe approach and landing at that aerodrome during the estimated time of use, an alternative course of action shall be determined.

(e) Recommendation.— The State of the Operator of an aeroplane type with two turbine engines which, prior to25 March 1986, was authorized and operating on a route where the flight time at one-engine-inoperative cruise speed to an en-route alternate aerodrome exceeded the threshold time established for such operations in accordance with 121.617 (d) should give consideration to permitting such an operation to continue on that route after that date.

121.618 Airport for EDTO:

Airport means an adequate airport listed in the certificate holder's operations specifications that are designated in a dispatch or flight release for use in the event of a diversion during EDTO. This definition applies to flight planning and does not in any way limit the authority of the pilot-in-command during flight.

121.619 Alternate heliports- Take-off alternate heliport

1- A take-off alternate heliport shall be selected and specified in the operational flight plan if the weather conditions at the heliport of departure are at or below the applicable heliport operating minima.

2- For a heliport to be selected as a take-off alternate, the available information shall indicate that, at the estimated time of use, the conditions will be at or above the heliport operating minima for that operation.

121.621 Alternate airport for destination: Air carriers

(a) No person may dispatch an aircraft under IFR unless he lists at least one alternate airport for each destination airport in the dispatch release, unless:
  (1) The flight is scheduled for not more than 6 hours and, for at least 1 hour before and 1 hour after the estimated time of arrival at the destination airport, the appropriate weather reports or forecasts, or any combination of them, indicate the ceiling will be:
    (i) At least 1,500 feet above the lowest circling MDA, if a circling approach is required and authorized for that airport; or
    (ii) At least 1,500 feet above the lowest published instrument approach minimum or 2,000 feet above the airport elevation, whichever is greater; and
    (iii) The visibility at that airport will be at least 4800 meters, or 3200 meters more than the lowest applicable visibility minimums, whichever is greater, for the instrument approach procedures to be used at the destination airport; or
  (2) The flight is over a route approved without an available alternate airport for a particular destination airport and the aircraft has enough fuel to meet the requirements of 121.633.

(b) For the purposes of paragraph (a) of this section, the weather conditions at the alternate airport must meet the requirements of the air carrier's operation specifications.

(c) No person may dispatch a flight unless he lists each required alternate airport in the dispatch release.

121.623 Alternate airport for destination: IFR: Air taxis

(a) Except as provided in paragraph (b) of this section, each person releasing an aircraft for operation under IFR shall list at least one alternate airport for each destination airport in the flight release.

(b) An alternate airport need not be designated for IFR operations where the aircraft carries enough fuel to meet the requirements for flights over routes without an available alternate airport for a particular airport of destination.

(c) For the purposes of paragraph (a) of this section, the weather requirements at the alternate airport must meet the requirements of the air carrier's or commercial operator's operations specifications.

(d) No person may release a flight unless he lists each required alternate airport in the flight release.

121.624 EDTO Alternate Airports.

(a) No person may dispatch or release an airplane for an EDTO flight unless enough EDTO Alternate Airports are listed in the dispatch or flight release such that the airplane remains within the authorized EDTO maximum diversion time. In selecting these EDTO Alternate Airports, the certificate holder must consider all adequate airports within the authorized EDTO diversion time for the flight that meet the standards of this part.

(b) No person may list an airport as an EDTO Alternate Airport in a dispatch or flight release unless, when it might be used (from the earliest to the latest possible landing time):

(1) The appropriate weather reports or forecasts, or any combination thereof, indicate that the weather conditions will be at or above the EDTO Alternate Airport minima specified in the certificate holder's operations specifications; and

(2) The field condition reports indicate that a safe landing can be made.

(c) Once a flight is en route, the weather conditions at each EDTO Alternate Airport must meet the requirements of §121.631 (c).

121.625 Alternate airport weather minimums

No person may list an airport as an alternate airport in the dispatch or flight release unless the appropriate weather reports or forecasts, or any combination thereof, indicate that the weather conditions will be at or above the alternate weather minimums specified in the certificate holder's operations specifications for that airport when the flight arrives.

121.626 Destination alternate heliport

(a) For a flight to be conducted in accordance with IFR, at least one destination alternate shall be specified in the operational flight plan and the flight plan, unless:

(1) The duration of the flight and the meteorological conditions prevailing are such that there is reasonable certainty that, at the estimated time of arrival at the heliport of intended landing, and for a reasonable period before and after such time, the approach and landing may be made under visual meteorological conditions as prescribed by the State of the Operator; or

(2) The heliport of intended landing is isolated and no suitable alternate is available. A point of no return (PNR) shall be determined.

(b) For a heliport to be selected as a destination alternate, the available information shall indicate that, at the estimated time of use, the conditions will be at or above the heliport operating minima for that operation.

(c) For a flight departing to a destination which is forecast to be below the heliport operating minima, two destination alternates should be selected. The first destination alternate should be at or above the heliport operating minima for destination and the second at or above the heliport operating minima for alternate.

(d) Suitable offshore alternates shall be specified subject to the following:

(1) The offshore alternates shall be used only after a PNR. Prior to PNR on-shore alternates shall be used;

(2) Mechanical reliability of critical control systems and critical components shall be considered and taken into account when determining the suitability of the alternates;

(3) One engine inoperative performance capability shall be attainable prior to arrival at the alternate;

(4) To the extent possible, deck availability shall be guaranteed; and

(5) Weather information must be reliable and accurate.

Note.— The landing technique specified in the flight manual following control system failure may preclude the nomination of certain helidecks as alternate heliports.

Note:__ Offshore alternates should not be used when it is possible to carry enough fuel to have an onshore alternate. Offshore alternates should not be hostile environment.used in.

Note: __Offshore alternates should not be used when it is possible to carry enough fuel to have an onshore alternate. Offshore alternates should not be used in a hostile environment.

(e) To ensure that an adequate margin of safety is observed in determining whether or not an approach and landing can be safely carried out at each alternate heliport or landing location, the operator shall specify appropriate incremental values for height of cloud base

and visibility, acceptable to ECAA, to be added to the operator's established heliport or landing location operating minima.

Note.— Guidance on the selection of these incremental values is contained in the Flight Planning and Fuel Management (FPFM) Manual (Doc 9976).

121.627 Continuing flight in unsafe conditions

(a) No pilot in command may allow a flight to continue toward any airport to which it has been dispatched or released if, in the opinion of the pilot in command or operations control, the flight cannot be completed safely; unless, in the opinion of the pilot in command, there is no safer procedures. In that event, continuation toward that airport is an emergency situation as set forth in 121.557.

(b) If any instrument or item of equipment required under this Part for the particular operation becomes inoperative en route, the pilot in command shall comply with the approved procedures for such an occurrence as specified in the certificate holder's manual.

121.628 Inoperable instruments and equipment

(a) No person may take off an aircraft with inoperable instruments or equipment installed unless the following conditions are met:
  (1) An approved Minimum Equipment List exists for that aircraft;
  (2) The ECAA has issued the certificate holder operations specifications authorizing operations in accordance with an approved defect control or (deferred snag control) program and a minimum equipment list. The cockpit crew shall have direct access at all times prior to flight to all of the information contained in the approved defect control program through printed or other means approved by the ECAA in the certificate holders operations specifications. An approved minimum equipment list, as authorized by the operations specifications, constitutes an approved change to the type design without requiring re-certification;
  (3) The approved minimum equipment list must:
    (i) Be prepared in accordance with limitations specified in paragraph (b) of this section; and
    (ii) Provides for the operation of the aircraft with certain instruments and equipment in an inoperable condition.
  (4) Records identifying the inoperable instruments and equipment and the information required by paragraph (a) (3) (ii) of this section must be available to the pilot;
  (5) The aircraft is operated under all applicable conditions and limitations contained in the defect control program and minimum equipment list, and the operations specifications authorizing use of the minimum equipment list.

(b) The following instruments and equipment may not be included in the minimum equipment list:
  (1) Instruments and equipment that are either specifically or otherwise required by the airworthiness requirements under which the aircraft is type certificated and which are essential for safe operations under all operating conditions.
  (2) Instruments and equipment required by an airworthiness directive to be in operable condition unless the airworthiness directive provides otherwise.
  (3) Instruments and equipment required for specific operations by this Part.

(c) Notwithstanding paragraphs (b) (1) and (b) (3) of this section, and aircraft with inoperable instruments or equipment may be operated under a special flight permit issued or authorized by the ECAA.

121.629 Operation in icing conditions

(a) No person may dispatch or release an aircraft, continue to operate, an aircraft en route, or land an aircraft when in the opinion of the pilot in command or operations control, icing conditions are expected or meteorological conditions met that might adversely affect the safety of the flight.

(b) No person may take off an aircraft when frost, ice, or snow is adhering to the wings, control surfaces, propellers, engine inlets, or other critical surfaces of the aircraft or when the takeoff would not be in compliance with paragraph (c) of this section. Takeoffs with frost under the wing in the area of the fuel tanks may be authorized by the ECAA.

(c) Except as provided in paragraph (d) of this section, no person may dispatch, release, or take off an aircraft any time conditions are such that frost, ice, or snow may reasonably be

expected to adhere to the aircraft, unless the certificate holder has an approved ground deicing/anti-icing program in its operations specifications and unless the dispatch, release, and takeoff comply with that program. The approved ground deicing/anti-icing program must include at least the following items:

(1) A detailed description of:
  (i) How the certificate holder determines that conditions are such that frost, ice, or snow may reasonably be expected to adhere to the aircraft and that ground deicing/anti-icing operational procedures must be in effect;
  (ii) Who is responsible for deicing that ground deicing/anti-icing operational procedures must be in effect;
  (iii) The procedures for implementing ground deicing/anti-icing operational procedures; and
  (iv) The specific duties and responsibilities of each operational position or group responsible for getting the aircraft safely airborne while ground deicing/anti-icing operational procedures are in effect.

(2) Initial and annual recurrent ground training and testing for cockpit crewmembers and qualification for all other affected personnel (e.g., aircraft dispatchers, ground crews, contract personnel) concerning the specific requirements of the approved program and each person's responsibilities and duties under the approved program, specifically covering the following areas:
  (i) The use of holdover times;
  (ii) Aircraft deicing/anti-icing procedures, including inspection and check procedures and responsibilities;
  (iii) Communications procedures;
  (iv) Aircraft surface contamination (i.e., adherence of frost, ice, or snow) and critical area identification, and how contamination adversely affects aircraft performance and flight characteristics;
  (v) Type and characteristics of deicing/anti-icing fluids;
  (vi) Cold weather preflight inspections procedures; and
  (vii) Techniques for recognizing contamination of the aircraft.

(3) The certificate holder's holdover timetables and the procedures for the use of these tables by the certificate holder's personnel. Holdover time is the estimated time deicing/anti-icing fluid commences and expires when the deicing/anti-icing fluid applied to the aircraft loses its effectiveness. The holdover times must be supported by data acceptable to the ECAA. The certificate holder's program must include procedures for cockpit crewmembers to increase or decrease the determined holdover time in changing conditions. The program must provide that takeoff after exceeding any maximum holdover time in the certificate holder's holdover timetable is permitted only when at least one of the following conditions exists:
  (i) A pre-takeoff contamination check, as defined in paragraph (c) (4) of this section determines that the wings, control surfaces, and other critical surfaces, as defined in the certificate holder's program, are free of frost, ice, or snow;
  (ii) It is otherwise determined by an alternate procedure approved by the ECAA in accordance with the certificate holder's approved program that the wings, control surfaces, and other critical surfaces, as defined in the certificate holder's program, are free of frost, ice, or snow; and
  (iii) The wings, control surfaces, and other critical surfaces are re-deiced and new holdover time is determined.

(4) Aircraft deicing/anti-icing procedures and responsibilities, pre-takeoff check procedures and responsibilities, and pre-takeoff contamination check procedures and responsibilities. A pre-takeoff check is a check of the aircraft's wings or representative aircraft surfaces for frost, ice, or snow within the aircraft's holdover time. A pre-takeoff contamination check is a check to make sure the wings, control surfaces, and other critical surfaces, as defined in the certificate holder's program, are free of frost, ice, and snow. It must be conducted within five minutes prior to beginning takeoff. This check must be accomplished from outside the aircraft unless the program specifies otherwise.

(d) A certificate holder may continue to operate under this section without a program as required in paragraph (c) of this section, if it includes in its operations specifications a requirement that, any time conditions are such that frost, ice, or snow may reasonably be

expected to adhere to the aircraft, no aircraft will take off unless it has been checked to ensure that the wings, control surfaces, and other critical surfaces are free of frost, ice, and snow. The check must occur within five minutes prior to beginning takeoff. This check must be accomplished from outside the aircraft.

121.631 Original dispatch or flight release, re dispatch or amendment of dispatch or flight release.

(a) A certificate holder may specify any regular, provisional, or refueling airport, authorized for the type of aircraft, as a destination for the purpose of original dispatch or flight release.

(b) No person may allow a flight to continue to an airport to which it has been dispatched or released unless the weather conditions at an alternate airport that was specified in the dispatch or flight release are forecast to be at or above the alternate minimums specified in the operations specifications for that airport at the time the aircraft would arrive at the alternate airport. However, the dispatch or flight release may be amended en route to include any alternate airport that is within the fuel range of the aircraft as specified in this part

(c) No person may allow a flight to continue beyond the EDTO Entry Point unless:

(1) Except as provided in paragraph (d) of this section, the weather conditions at each EDTO Alternate Airport required by 121.625 are forecast to be at or above the operating minima for that airport in the certificate holder's operations specifications when it might be used (from the earliest to the latest possible landing time); and

(2) All EDTO Alternate Airports within the authorized EDTO maximum diversion time are reviewed and the flight crew advised of any changes in conditions that have occurred since dispatch.

(d) If paragraph (c)(1) of this section cannot be met for a specific airport, the dispatch or flight release may be amended to add an EDTO Alternate Airport within the maximum EDTO diversion time that could be authorized for that flight with weather conditions at or above operating minima.

(e) Before the EDTO Entry Point, the pilot in command for a supplemental operator or a dispatcher for a flag operator must use company communications to update the flight plan if needed because of a re-evaluation of aircraft system capabilities.

(f) No person may change an original destination or alternate airport that is specified in the original dispatch or flight release to another airport while the aircraft is en route unless the other airport is authorized for that type of aircraft and the appropriate requirements of this part are met at the time of re dispatch or amendment of the flight release.

(g) A person authorized to change a dispatch destination or flight release must coordinate the change with the appropriate air traffic control facility prior to executing the change and sending the change to the aircraft or pilot.

(h) Each person who amends a dispatch or flight release en route shall record that amendment.

121.632 Considering time – limited systems in planning EDTO alternates

(a) For EDTO up to and including 180 minutes, no person may list an airport as an EDTO Alternate Airport in a dispatch or flight release if the time needed to fly to that airport (at the approved one-engine inoperative cruise speed under standard conditions in still air) would exceed the approved time for the airplane's most limiting EDTO Significant System (including the airplane's most limiting fire suppression system time for those cargo and baggage compartments required by regulation to have fire-suppression systems) minus 15 minutes.

(b) For EDTO beyond 180 minutes, no person may list an airport as an EDTO Alternate Airport in a dispatch or flight release if the time needed to fly to that airport:

(1) at the all engine operating cruise speed, corrected for wind and temperature, exceeds the airplane's most limiting fire suppression system time minus 15 minutes for those

cargo and baggage compartments required by regulation to have fire suppression systems (except as provided in paragraph (c) of this section), or

(2) at the one-engine-inoperative cruise speed, corrected for wind and temperature, exceeds the airplane's most limiting EDTO Significant System time (other than the airplane's most limiting fire suppression system time minus 15 minutes for those cargo and baggage compartments required by regulation to have fire-suppression systems).

(c) For turbine-engine powered airplanes with more than two engines, the certificate holder need not meet paragraph (b)(1) of this section

121.633 Fuel and oil requirements

1. An aero plane shall carry a sufficient amount of usable fuel to complete the planned flight safely and to allow for deviations from the planned operation.
2. The amount of usable fuel to be carried shall, as a minimum, be based on:
   (a) The following data:

(1) Current aero plane-specific data derived from a fuel consumption monitoring system, if available; or

(2) If current aero plane-specific data are not available, data provided by the aero plane manufacturer; and

(a) The operating conditions for the planned flight including:

(1) anticipated aero plane mass;

(2) Notices to Airmen;

(3) current meteorological reports or a combination of current reports and forecasts;

(4) air traffic services procedures, restrictions and anticipated delays; and

(5) the effects of deferred maintenance items and/or configuration deviations.

3. The pre-flight calculation of usable fuel required shall include:

(a) Taxi fuel, which shall be the amount of fuel expected to be consumed before take-off, taking into account local conditions at the departure aerodrome and auxiliary power unit (APU) fuel consumption;

(b) Trip fuel, which shall be the amount of fuel required to enable the aero plane to fly from take-off, or the point of in-flight re-planning, until landing at the destination aerodrome taking into account the operating conditions of item 2.b) of this section;

(c) Contingency fuel, which shall be the amount of fuel required to compensate for unforeseen factors. It shall be five percent of the planned trip fuel or of the fuel required from the point of in-flight re-planning based on the consumption rate used to plan the trip fuel but, in any case, shall not be lower than the amount required to fly for five minutes at holding speed at 450 m (1 500 ft) above the destination aerodrome in standard conditions;

Note.— Unforeseen factors are those which could have an influence on the fuel consumption to the destination aerodrome, such as deviations of an individual aero plane from the expected fuel consumption data, deviations from forecast meteorological conditions, extended delays and deviations from planned routings and/or cruising levels.

(d) Destination alternate fuel, which shall be:

(1) Where a destination alternate aerodrome is required, the amount of fuel required to enable the aero plane to:

(i) Perform a missed approach at the destination aerodrome;

(ii) Climb to the expected cruising altitude;

(iii) Fly the expected routing;

(iv) Descend to the point where the expected approach is initiated; and

(v) Conduct the approach and landing at the destination alternate aerodrome; or

(2) Where two destination alternate aerodromes are required, the amount of fuel, as calculated in of item 3.d).1) of this section, required to enable the aero plane to proceed to the destination alternate aerodrome which requires the greater amount of alternate fuel; or

(3) Where a flight is operated without a destination alternate aerodrome, the amount of fuel required to enable the aero plane to fly for 15 minutes at holding speed at 450 m (1 500 ft) above destination aerodrome elevation in standard conditions; or

(4) Where the aerodrome of intended landing is an isolated aerodrome:

(i) For a reciprocating engine aero plane, the amount of fuel required to fly for 45 minutes plus 15 per cent of the flight time planned to be spent at cruising level, including final reserve fuel, or two hours, whichever is less; or

(ii) For a turbine-engine aero plane, the amount of fuel required to fly for two hours at normal cruise consumption above the destination aerodrome, including final reserve fuel;

(e) Final reserve fuel, which shall be the amount of fuel calculated using the estimated mass on arrival at the destination alternate aerodrome, or the destination aerodrome when no destination alternate aerodrome is required:

(1) For a reciprocating engine aero plane, the amount of fuel required to fly for 45 minutes, under speed and altitude conditions specified by the State of the Operator; or

(2) For a turbine-engine aero plane, the amount of fuel required to fly for 30 minutes at holding speed at 450 m (1 500 ft) above aerodrome elevation in standard conditions;

(f) Additional fuel, which shall be the supplementary amount of fuel required if the minimum fuel calculated in accordance with 4.3.6.3 b), c), d) and e) is not sufficient to:

(1) Allow the aero plane to descend as necessary and proceed to an alternate aerodrome in the event of engine failure or loss of pressurization, whichever requires the greater amount of fuel based on the assumption that such a failure occurs at the most critical point along the route;

(i) Fly for 15 minutes at holding speed at 450 m (1 500 ft) above aerodrome elevation in standard conditions; and

(ii) Make an approach and landing;

(2) Allow an aero plane engaged in EDTO to comply with the EDTO critical fuel scenario as established by the State of the Operator;

(3) Meet additional requirements not covered above;

Note 1. — Fuel planning for a failure that occurs at the most critical point along a route (4.3.6.3 f) 1)) may place the aero plane in a fuel emergency situation based on 4.3.7.2.

Note 2. — Guidance on EDTO critical fuel scenarios is contained in Attachment D;

(g) Discretionary fuel, which shall be the extra amount of fuel to be carried at the discretion of the pilot-in-command.

4. Recommendation. — Operators should determine one final reserve fuel value for each aero plane type and variant in their fleet rounded up to an easily recalled figure.

5. A flight shall not commence unless the usable fuel on board meets the requirements in 4.3.6.3 a), b), c), d), e) and f) if required and shall not continue from the point of in-flight re-planning unless the usable fuel on board meets the requirements in 4.3.6.3 b), c), d), e) and f) if required.

6. Notwithstanding the provisions in 4.3.6.3 a), b), c), d) and f), the State of the Operator may, based on the results of a specific safety risk assessment conducted by the operator which demonstrates how an equivalent level of safety will be maintained, approve variations to

the pre-flight fuel calculation of taxi fuel, trip fuel, contingency fuel, destination alternate fuel, and additional fuel. The specific safety risk assessment shall include at least the:

(a) Flight fuel calculations;

(b) Capabilities of the operator to include:

(i) A data-driven method that includes a fuel consumption monitoring programme; and/or

(ii) The advanced use of alternate aerodromes; and

(c) Specific mitigation measures.

Note.— Guidance on the specific safety risk assessment, fuel consumption monitoring programmes and the advanced use of alternate aerodromes is contained in the Flight Planning and Fuel Management (FPFM) Manual (Doc 9976).

7. The use of fuel after flight commencement for purposes other than originally intended during pre-flight planning shall require a re-analysis and, if applicable, adjustment of the planned operation.

Note.— Guidance on procedures for in-flight fuel management including re-analysis, adjustment and/or re-planning considerations when a flight begins to consume contingency fuel before take-off is contained in the Flight Planning and Fuel Management (FPFM) Manual (Doc 9976).

8. All helicopters. A flight shall not be commenced unless, taking into account both the meteorological conditions and any delays that are expected in flight, the helicopter carries sufficient fuel and oil to ensure that it can safely complete the flight. In addition, a reserve shall be carried to provide for contingencies.

9. VFR operations. The fuel and oil carried in order to comply with item 8 of this section shall, in the case of VFR operations, be at least the amount to allow the helicopter to:

(a) Fly to the landing site to which the flight is planned;

(b) Have final reserve fuel to fly thereafter for a period of 20 minutes at best-range speed; and

(c) Have an additional amount of fuel to provide for the increased consumption on the occurrence of any of the potential contingencies specified by the operator to the satisfaction of the State of the Operator.

10. IFR operations. The fuel and oil carried in order to comply with item 1 of this section shall, in the case of IFR operations, be at least the amount to allow the helicopter:

10.1. When an alternate is not required, in terms of section 121.619, to fly to and execute an approach at the heliport or landing location to which the flight is planned, and thereafter to have:

(a) Final reserve fuel to fly 30 minutes at holding speed at 450 m (1 500 ft) above the destination heliport or landing location under standard temperature conditions and approach and land; and

(b) An additional amount of fuel to provide for the increased consumption on the occurrence of any of the potential contingencies specified by the operator to the satisfaction of the State of the Operator.

10.2. When an alternate is required, to fly to and execute an approach, and a missed approach, at the heliport or landing location to which the flight is planned, and thereafter:

(a) Fly to and execute an approach at the alternate specified in the flight plan; and then

(b) Have final reserve fuel to fly for 30 minutes at holding speed at 450 m (1 500 ft) above the alternate under standard temperature conditions, and approach and land; and

(c) Have an additional amount of fuel to provide for the increased consumption on the occurrence of any of the potential contingencies specified by the operator to the satisfaction of the State of the Operator.

10.3 When no alternate heliport or landing location is available, in terms of section 121.619 (e.g. the destination is isolated), sufficient fuel shall be carried to enable the helicopter to fly to the destination to which the flight is planned and thereafter for a period that will, based on geographic and environmental considerations, enable a safe landing to be made.

11. In computing the fuel and oil required in item 1 of this section, at least the following shall be considered:
(a) Meteorological conditions forecast;
(b) expected air traffic control routings and traffic delays;
(c) For IFR flight, one instrument approach at the destination heliport, including a missed approach;
(d) The procedures prescribed in the operations manual for loss of pressurization, where applicable, or failure of one engine while en route; and
(e) Any other conditions that may delay the landing of the helicopter or increase fuel and/or oil consumption.
Note. — Nothing in this section precludes amendment of a flight plan in flight in order to re planned the flight to another heliport, provided that the requirements of this section can be complied with from the point where the flight has been re planned.

12. The use of fuel after flight commencement for purposes other than originally intended during pre-flight planning shall require a re-analysis and, if applicable, adjustment of the planned operation.

121.634 In-flight fuel management

(a) An operator shall establish policies and procedures, approved by ECAA, to ensure that in-flight fuel checks and fuel management are performed.

(b) The pilot-in-command shall continually ensure that the amount of usable fuel remaining on board is not less than the fuel required to proceed to an aerodrome where a safe landing can be made with the planned final reserve fuel remaining upon landing.

(c) The pilot-in-command of the helicopter shall monitor the amount of usable fuel remaining on board to ensure it is not less than the fuel required to proceed to a landing site where a safe landing can be made with the planned final reserve fuel remaining.

Note.— The protection of final reserve fuel is intended to ensure safe landing at any aerodrome heliport or landing location when unforeseen occurrences may not permit a safe completion of an operation as originally planned. Guidance on flight planning, including the circumstances that may require re-analysis, adjustment and/or re-planning of the planned operation before take-off or en-route, is contained in the Flight Planning and Fuel Management (FPFM) Manual (ICAO Doc 9976).

(d) The pilot-in-command shall request delay information from ATC when unanticipated circumstances may result in landing at the destination aerodrome with less than the final reserve fuel plus any fuel required to proceed to an alternate aerodrome or the fuel required to operate to an isolated aerodrome.

(e) The pilot-in-command shall advise ATC of a minimum fuel state by declaring MINIMUM FUEL when, having committed to land at a specific aerodrome, the pilot calculates that any change to the existing clearance to that aerodrome may result in landing with less than the planned final reserve fuel.

Note 1.— The declaration of MINIMUM FUEL informs ATC that all planned aerodrome options have been reduced to a specific aerodrome of intended landing and any change to the existing clearance may result in landing with less than the planned final reserve fuel. This is not an emergency situation but an indication that an emergency situation is possible should any additional delay occur.

Note 2.— Guidance on declaring minimum fuel is contained in the Flight Planning and Fuel Management (FPFM) Manual (ICAO Doc 9976).

(f) The pilot-in-command of the helicopter shall advise ATC of a minimum fuel state by declaring MINIMUM FUEL when, having committed to land at a specific landing site, the pilot calculates that any change to the existing clearance to that landing site, or other air traffic delays, may result in landing with less than the planned final reserve fuel.

Note 1.— The declaration of MINIMUM FUEL informs ATC that all planned landing site options have been reduced to a specific landing site of intended landing, that no precautionary landing site is available, and any change to the existing clearance, or air traffic delays, may result in landing with less than the planned final reserve fuel. This is not an emergency situation but an indication that an emergency situation is possible should any additional delay occur.

Note 2.— A precautionary landing site refers to a landing site, other than the site of intended landing, where it is expected that a safe landing can be made prior to the consumption of the planned final reserve fuel.

(g) The pilot-in-command shall declare a situation of fuel emergency by broadcasting MAYDAY MAYDAY MAYDAY FUEL, when the calculated usable fuel predicted to be available upon landing at the nearest aerodrome where a safe landing can be made is less than the planned final reserve fuel.

Note 1.— The planned final reserve fuel refers to the value calculated in 121.633 and is the minimum amount of fuel required upon landing at any aerodrome.

Note 2.— The words "MAYDAY FUEL" describe the nature of the distress conditions as required in ICAO Annex 10, Volume II,

Note 3.— Guidance on procedures for in-flight fuel management is contained in the Flight Planning and Fuel Management (FPFM) Manual (ICAO Doc 9976).

(h) The pilot-in-command of the helicopter shall declare a situation of fuel emergency by broadcasting MAYDAY MAYDAY MAYDAY FUEL, when the usable fuel estimated to be available upon landing at the nearest landing site where a safe landing can be made is less than the required final reserve fuel in compliance with 121.633.

Note 1.— The planned final reserve fuel refers to the value calculated in 121.633 and is the minimum amount of fuel required upon landing at any landing site. The declaration of MAYDAY MAYDAY MAYDAY FUEL informs ATC that all available landing options have been reduced to a specific site and a portion of the final reserve fuel may be consumed prior to landing.

Note 2.— The pilot estimates with reasonable certainty that the fuel remaining upon landing at the nearest safe landing site will be less than the final reserve fuel taking into consideration the latest information available to the pilot, the area to be overflown (i.e. with respect to the availability of precautionary landing areas), meteorological conditions and other reasonable contingencies.

121.635 Fuel and oil records

(a) An operator shall maintain fuel and oil records to enable the State of the Operator to ascertain that, for each flight, the requirements of 4.3.6 have been complied with.

(b) Fuel and oil records shall be retained by the operator for a period of three months.

121.637 Takeoffs from any airport

No pilot may takeoff an aircraft from any airport unless:

(a) The airport and related facilities are adequate for the operation of the aircraft;

(b) He can comply with the applicable aircraft operating limitations;

(c) If applicable, the aircraft has been dispatched according to appropriate dispatching rules; and

(d) The weather conditions at that airport are equal to or better than the weather minimums for takeoff prescribed or approved by the government of the country in which the airport is located; or where minimums are not prescribed or approved, those minimums published in the appropriate operators manuals.

121.639 through 645 [Reserved]

121.647 Each person computing fuel required for the purposes of this subpart shall consider the following:

(a) Wind and other weather conditions forecast.
(b) Anticipated traffic delays.
(c) An instrument approach and a missed approach at destination.
(d) Notice to Airmen
(e) Any other conditions that may delay landing of the aircraft.
(f) Abnormal operating conditions including loss of pressurization and failure of an engine.

121.649 Takeoff and landing weather minimums: VFR

(a) Except as provided in paragraph (b) of this section, regardless of any clearance from ATS, no pilot may take off or land an aircraft under VFR when the reported ceiling or visibility is less than the following:
  (1) For day operations: 300 meters ceiling and 1600 meters visibility.
  (2) For night operations: 300 meters ceiling and 3200 meters visibility.
(b) Where a local surface restriction to visibility exists (e.g., smoke, dust, blowing snow or sand) and visibility for day and night operations may be reduced to one-half mile, if all turns after takeoff and prior to landing, and all flight beyond one mile from the airport boundary can be accomplished above or outside the area of local surface visibility restriction.

121.651 Takeoff and landing weather minimums: IFR

(a) Notwithstanding any clearance from ATS, no pilot may begin a takeoff in an aircraft under IFR when the weather conditions reported by a source approved by the ECAA**,** are less than those specified in:
  (1) The certificate holder's operations specifications; or
  (2) If the certificate holder's operations specifications do not specify takeoff minimums for that airport, unless otherwise authorized by the ECAA for paragraphs (i) through (ix) of this section. When an instrument letdown to a civil airport is necessary, each person operating an aircraft, shall use a standard instrument approach procedure prescribed for the airport.
    (i) Authorized DH or MDA. For the purpose of this section, when the approach procedure being used provides for and requires use of a DH or MDA, the authorized decision height or authorized minimum descent altitude is the DH or MDA prescribed by the approach procedure, the DH or MDA prescribed for the pilot in command, or the DH or MDA for which the aircraft is equipped, whichever is higher.
    (ii) Operation below DH or MDA. Where a DH or MDA is applicable, no pilot may operate an aircraft, at any airport below the authorized MDA or continue an approach below the authorized DH unless:
      (A) The aircraft is continuously in a position from which a descent to a landing on the intended runway can be made at a normal rate of descent using normal maneuvers, that will allow touchdown to occur within the touchdown zone of the runway of intended landing;
      (B) The flight visibility is not less than the visibility prescribed in the standard instrument approach procedure being used;
      (C) Except for a category II or category III approach where any necessary visual reference requirements are specified by the ECAA at least one of the following visual references for the intended runways is distinctly visible and identifiable to the pilot:
        (I) The approach light system, except that the pilot may not descend below 100 feet above the touchdown zone elevation using the approach lights as a reference unless the red terminating bars or the red side row bars are also distinctly visible and identifiable;
        (II) The threshold;
        (III) The threshold markings;
        (IV) The threshold lights;
        (V) The runway end identifier lights;

(VI) The visual approach slope indicator;
(VII) The touchdown zone or touchdown zone markings;
(VIII) The touchdown zone lights;
(IX) The runway or runway markings; and
(X) The runway lights.

(D) When the aircraft is on a straight-in non-precision approach procedure which incorporates a visual descent point, the aircraft has reached the visual descent point, except where the aircraft is not equipped for or capable of establishing that point or a descent to the runway cannot be made using normal procedures or rates of descent if descent is delayed until reaching that point.

(iii) Landing: No pilot operating an aircraft, may land that aircraft when the flight visibility is less than the visibility prescribed in the standard instrument approach procedure being used.

(iv) Missed approach procedures: Each pilot operating an aircraft, shall immediately execute an appropriate missed approach procedure when either of the following conditions exist:

(A) Whenever the requirements of paragraph (2)(ii)(c) of this section are not met at either of the following times:
(1) When the aircraft is being operated below MDA; or
(2) Upon arrival at the missed approach point, including a DH is specified and its use is required, and at any time after that until touchdown.

(B) Whenever an identifiable part of the airport is not distinctly visible to the pilot during a circling maneuver at or above MDA, unless the inability to see an identifiable part of the airport results only from a normal bank of the aircraft during the circling approach.

(v) Civil airport takeoff minimums: Unless otherwise authorized by the ECAA, no person operating an aircraft under this Part may take off from a civil airport under IFR unless weather conditions are at or above the weather minimums for IFR takeoff prescribed for that airport. If takeoff minimums aircraft operating under this Part:

(A) For aircraft, other than helicopters, having two engines or less: 1600 meters visibility;
(B) For aircraft having more than two engines: 800 meters visibility; and
(C) For helicopters: 800 meters visibility.

(vi) Military airports: Unless otherwise prescribed by the ECAA, each person operating a civil aircraft under IFR into or out of a military airport shall comply with the instrument approach procedures and the takeoff and landing minimums prescribed by the military authority having jurisdiction of that airport.

(vii) Operations on unpublished routes and use of radar in instrument approach procedures: When radar is approved at certain locations for ATS purposes, it may be used not only for surveillance and precision radar approaches, as applicable, but also may be used in conjunction with instrument approach procedures predicated on other types of radio navigational aids. Radar vectors may be authorized to provide course guidance throughout the segments of an approach procedure to the final approach course or fix. When operating on an unpublished route or while being radar vectored, the pilot, when an approach clearance is received, shall maintain the last altitude assigned to that pilot until the aircraft is established on a segment of a published route or instrument approach procedure unless a different altitude is assigned by ATS. After the aircraft is so established, published altitudes apply to descent within each succeeding route or approach segment unless a different altitude is assigned by ATS. Upon reaching the final approach course or fix, the pilot may either complete the instrument approach in accordance with a procedure approved for the facility or continue a surveillance or precision radar approach to a landing.

(viii) Limitation on procedure turns: In the case of a radar vector to a final approach course or fix, a timed approach from a holding fix, or an approach for which the procedure specifies ”No PT”, no pilot may make a procedure turn unless cleared to do so by ATS.

(ix) ILS components: The basic ground components of an ILS are the localizer, glide slope, outer marker, middle marker, and, when installed for use with category II

or category III instrument approach procedures, an inner marker. A compass locator or precision radar may be substituted for the outer or middle marker, DME, VOR, or non-directional beacon fixes authorized in the standard instrument approach procedure or surveillance radar may be substituted for the outer marker. Applicability of, and substitution for, the inner marker for category II or III approaches is determined by the appropriate approach procedure, letter of authorization, or operation specification pertinent to the operation.

(b) Except as provided in paragraph (d) of this section, no pilot may continue an approach past the final approach fix, or where a final approach fix is not used, begin the final approach segment of an instrument approach procedure:
  (1) At any airport, unless a source approved by the ECAA, issues a weather report for that airport; and
  (2) The latest weather report shows the visibility to be equal to or more than the visibility minimums prescribed for that procedure.

(c) If a pilot has begun the final approach segment of an instrument approach procedure in accordance with paragraph (b) of this section and after that receives a later weather report indicating below-minimum conditions, the pilot may continue the approach to DH or MDA. Upon reaching DH or at MDA, and at any time before the missed approach point, the pilot may continue the approach below DH or MDA and touch down if:
  (1) The aircraft is continuously in a position from which a descent to a landing on the intended runway can be made at a normal rate of descent using normal maneuver, and where that descent rate will allow touchdown to occur within the touchdown zone of the runway of intended landing;
  (2) The flight visibility is not less than the visibility prescribed in the standard instrument approach procedure being used;
  (3) Except for Category II or Category III approaches where any necessary visual reference requirements are specified by authorization or the ECAA, at least one of the following visual references for the intended runway is distinctly visible and identifiable to the pilot:
    (i) The approach light system, except that the pilot may not descend below 100 feet above the touchdown zone elevation using the approach lights as a reference unless the red terminating bars or the red side row bars are also distinctly visible and identifiable;
    (ii) The threshold;
    (iii) The threshold markings;
    (iv) The threshold lights;
    (v) The runway end identifier lights;
    (vi) The visual approach slope indicator;
    (vii) The touchdown zone or touchdown zone markings;
    (viii) The touchdown zone light;
    (ix) The runway or runway markings; and
    (x) The runway lights.
  (4) When the aircraft is on a straight-in non-precision approach procedure which incorporates a visual descent point, the aircraft has reached the visual descent point, except where the aircraft is not equipped for or capable of establishing that point, or a descent to the runway cannot be made using normal procedures or rates of descent if descent is delayed until reaching that point.

(d) A pilot may begin the final approach segment of an instrument approach procedure other than a category II or category III procedure at an airport when the visibility is less than the visibility minimums prescribed for the procedure if that airport is served by an operative ILS and an operative PAR, and both are used by the pilot. However, no pilot may operate and aircraft below the authorized MDA, or continue an approach below the authorized DH, unless:
  (1) The aircraft is continuously in a position from which a descent to a landing on the intended runway can be made at a normal rate of descent using normal maneuvers and where such a descent rate will allow touchdown to occur within the touchdown zone of the runway of intended landing;
  (2) The flight visibility is equal to or greater than the minimum visibility prescribed in the standard instrument approach procedure being used; and

(3) Except for Category II or Category III approaches where any necessary visual reference requirements are specified by authorization or the ECAA, at least one of the following visual references for the intended runway is distinctly visible and identifiable to the pilot:
(i) The approach light system, except that the pilot may not descend below 100 feet above the touchdown zone elevation using the approach lights as a reference unless the red terminating bars or the red side row bars are also distinctly visible and identifiable;
(ii) The threshold;
(iii) The threshold markings;
(iv) The threshold lights;
(v) The runway end identifier lights;
(vi) The visual approach slope indicator;
(vii) The touchdown zone or touchdown zone markings;
(viii) The touchdown zone light;
(ix) The runway or runway markings; and
(x) The runway lights.

(e) For the purpose of this section, the final approach segment begins at the final approach fix or facility prescribed in the instrument approach procedure. When a final approach fix is not prescribed for a procedure that includes a procedure turn, the final approach segment begins at the point where the procedure turn is completed and the aircraft is established inbound toward the airport on the final approach course within the distance prescribed in the procedure.

(f) Unless otherwise authorized in the certificate holder's operations specification, each pilot making an IFR takeoff, approach, or landing at a foreign airport shall comply with the applicable instrument approach procedures and weather minimums prescribed by the authority having jurisdiction over the airport.

121.652 Landing weather minimums: IFR: All certificate holders

(a) If the pilot in command of an aircraft has not served 100 hours as pilot in command in operation under this Part in the type of aircraft he is operating, the MDA or DH and visibility landing minimums in the certificate holder's operations specification for airports are increased by 100 feet and 800 meters (or the RVR equivalent). The MDA or DH and visibility minimums need not be increased above those applicable to the airport when used as an alternate airport, but in no event may the landing minimums be less than 300 feet and 1600 meters visibility. However, a pilot in command employed by an air taxi operator certificated under this Part may credit flight time acquired in operations conducted for that operator in the same type aircraft for up to 50 percent of the 100 hours of pilot in command experience required by this paragraph.

(b) The 100 hours of pilot-in-command experience required by paragraph (a) may be reduced (not to exceed 50 percent) by substituting one landing in operations under this Part in the type of aircraft for one required hour of pilot in command experience if the pilot has at least 100 hours as pilot in command of another type aircraft in operations under this Part.

(c) Category II minimums when authorized in the certificate holder's operations specifications do not apply until the pilot in command subject to paragraph (a) of this section meets the requirements of that paragraph in the type of aircraft he is operating.

121.655 Applicability of reported weather minimums

In conducting operations under 121.649 through 121.651, the ceiling and visibility values in the main body of the latest weather report control for VFR and IFR takeoffs and landings and for instrument approach procedures on all runways of an airport, however, if the latest weather report, including an oral report from the control tower, contains a visibility value specified as runway visibility or runway visual range for a particular runway of an airport, that specified value controls for VFR and IFR landings and takeoffs and straight in instrument approaches for that runway.

121.657 Flight altitude rules

(a) No person may operate an aircraft below the minimums set forth in paragraphs (b) and (c) of this section, except when necessary for takeoff or landing, or except when after considering the character of the terrain, the quality and quantity of meteorological services,

the navigational facilities available, and other flight conditions, the ECAA prescribes other minimums for any route or part of a route where he finds that the safe conduct of the flight requires other altitudes. The minimums prescribed in this section are controlling unless higher minimums are prescribed in the air carrier or commercial operator's operation specifications or by the foreign country over which the aircraft is operating.

(b) Day VFR operations. No operator may operate a passenger-carrying aircraft under VFR during the day at an altitude less than 1,000 feet above the surface or less than, 1,000 feet from any mountain, hill, or other obstruction to flight.

(c) Night VFR, operations, No person may operate an aircraft under IFR or at night under VFR at an altitude less than 1,000 feet above the highest obstacle within a horizontal distance of five miles from the center of the intended course, or, in designated mountainous areas, less than 2,000 feet above the highest obstacle within a horizontal distance of five miles from the center of the intended course.

121.659 Aircraft meteorological observations and reports

(a) Types of aircraft observations: The following aircraft observations shall be made:
  (1) Routine aircraft observations during en-route and climb-out phases of the flight; and
  (2) Special and other non-routine aircraft observations during any phase of the flight.

(b) When air-ground data link is used and automatic dependent surveillance (ADS) is being applied, automated routine observations should be made every 15 minutes during the en-route phase and every 30 seconds during the climb-out phase for the first 10 minutes of the flight.

(c) When voice communications are used, routine observations shall be made during the enroute phase in relation to those air traffic services reporting points or intervals:
  (1) At which the applicable air traffic services procedures require routine position reports; and
  (2) Which are those separated by distances corresponding most closely to intervals of one hour of flying time.

(d) For helicopter operations to and from aerodromes on offshore structures, routine observations should be made from helicopters at points and times as agreed between the meteorological authorities and the helicopter operators concerned.

(e) Routine aircraft observations exemptions: When voice communications are used, an aircraft shall be exempted from making the routine observations specified in 121.659(c) when:
  (1) The aircraft is not equipped with RNAV equipment;
  (2) The flight duration is 2 hours or less;
  (3) The aircraft is at a distance equivalent to less than one hour of flying time from the next intended point of landing; or
  (4) The altitude of the flight path is below 1 500 m (5 000 ft).

(f) Reporting of aircraft observations during flight: Aircraft observations shall be reported by air-ground data link. Where air-ground data link is not available or appropriate, aircraft observations during flight shall be reported by voice communications.

121.661 Initial approach altitude: All operators

When making an initial approach to a radio navigation facility under IFR, no person may descend below the pertinent minimum altitude for initial approach (as specified in the instrument approach procedure for that facility) until his arrival over that facility has been definitely established.

121.663 Responsibility for dispatch release: Air carriers

Each air carrier shall prepare a dispatch release for each flight between specified points, based on information furnished by operations control. The pilot in command shall sign the release only if, considering all information provided and verified in a method acceptable to the ECAA by the dispatcher, he believes the flight can be made safely.

121.665 Load manifest

Except for single engine aircraft, each certificate holder is responsible for the preparation and accuracy of a load manifest before each takeoff. The form must be prepared and signed for each flight by employees of the certificate holder who have the duty of supervising the loading

of aircraft and preparing the load manifest forms or by other qualified persons authorized by the certificate holder.

121.667 Flight plan: VFR and IFR: Air taxis

No person may take off an aircraft unless the pilot in command has filed a flight plan, containing the appropriate information required by the ECAA, with an appropriate authority. However, if communications facilities are not readily available, the pilot in command shall file the flight plan as soon as practicable after the aircraft is airborne. A flight plan must continue in effect for all parts of the flight.

121.569 through 121.679 Reserved

SUBPART V
Records and Reports

121.681 Applicability
This subpart prescribes requirements for the preparation and maintenance of records and reports for all certificate holders.

121.683 Crewmember and dispatcher records
(a) Each certificate holder shall:
  (1) Maintain current records of each crewmember, and each dispatcher, if applicable, that shows whether or not that person complies with this Part (e.g., proficiency and route checks, aircraft and route qualifications, training, any required physical examinations, and flight time records); and
  (2) Records each action taken concerning the release from employment or physical or professional disqualification of any crewmember or dispatcher, if applicable, and maintains that record for at least six months thereafter.

(b) Computer record systems approved by the ECAA may be used in complying with the requirements of paragraph (a) of this section.

121.685 Aircraft records: All operators
Each operator shall maintain a current list of each aircraft that it operates in scheduled air transportation and shall send a copy of the record and each change to the ECAA Section charged with the overall inspection of its operations. Aircraft of another certificate holder operated under an interchange agreement may be incorporated by reference.

121.687 Dispatch release: Air carriers
(a) The dispatch release may be in any form but must contain at least the following information concerning each flight:
  (1) Identification number of the aircraft;
  (2) Trip number;
  (3) Departure airports, intermediate stops, destination airports, and alternate airports;
  (4) A statement of the type of operation (e.g., IFR, VFR); and
  (5) Minimum fuels supply.

(b) The dispatch release must contain, or have attached to it, weather reports, available weather forecasts, or a combination thereof, for the destination airport, intermediate stops, and alternate airports, that are the latest available at the time the release is signed by the pilot in command and operations control. It may include any additional available weather reports or forecasts that the pilot in command or operations control consider necessary or desirable.

121.689 Flight release form: Air taxis
(a) The flight release, if applicable, may be in any form but must contain at least the following information concerning each flight:
  (1) Company or organization name;
  (2) Make, model, and registration number of the aircraft being used;
  (3) Flight or trip number, and date of flight;
  (4) Name of each cockpit crewmember, cabin crew, and pilot designated as pilot in command;
  (5) Departure airport, destination airports, alternate airports, and route;
  (6) Minimum fuel supply (in gallons, liters, kilos or pounds); and
  (7) A statement of the type of operation (e.g., IFR, VFR).

(b) The aircraft flight release must contain, or have attached to it, weather reports, available weather forecasts, or a combination thereof, for the destination airport, and alternate airports, that are the latest available at the time the release is signed. It may include any additional available weather reports or forecasts that the pilot in command considers necessary or desirable.

121.691 [Reserved]

121.693 Load manifest: All operators

Except for single engine aircraft, the load manifest must contain the following information concerning the loading of the aircraft at takeoff time:

(a) The weight of the aircraft, fuel and oil, cargo, and baggage, passengers, and crewmembers;
(b) The maximum allowable weight for that flight that must not exceed the least of the following weights:
    (1) Maximum allowable takeoff weight for the runway intended to be used (including corrections for altitude and gradient, and wind and temperature conditions existing at the takeoff time);
    (2) Maximum takeoff weight considering anticipated fuel and oil consumption that allows compliance with applicable enroute performance limitations;
    (3) Maximum takeoff weight considering anticipated fuel and oil consumption that allows compliance with the maximum authorized design landing weight limitations on arrival at the destination airport;
    (4) Maximum takeoff weight considering anticipated fuel and oil consumption that allows compliance with landing distance limitations or arrival at the destination and alternate airports; and
    (5) Maximum certificate gross takeoff weight.
(c) The total weight computed under approved procedures;
(d) Evidence that the aircraft is loaded according to an approved schedule that ensures that the center of gravity is within approved limits; and
(e) Names of passengers, unless such information is maintained by other means by the operator.

121.695 Disposition of load manifest, dispatch release, and flight plans

(a) The pilot in command of an aircraft shall carry, as applicable, in the aircraft to its destination:
    (1) A copy of the completed load manifest (or information from it, except information concerning cargo and passenger distribution);
    (2) A copy of the dispatch release; and
    (3) A copy of the flight plan.
(b) The operator shall keep copies of the records required in this section for at least six months.

121.697 121.699 [Reserved]

121.701 Maintenance log: Aircraft

(a) Each person who takes action in the case of a reported or observed failure or malfunction of an airframe, engine, propeller, or appliance that is critical to the safety of flight shall make, or have made, a record of that action in the aircraft's maintenance log.
(b) Each certificate holder shall have an approved procedure for keeping adequate copies of the record required in paragraph (a) of this section in the aircraft in a place readily accessible to each cockpit crewmember and shall put that procedure in the certificate holder's manual.

121.702 Occurrences Reporting

Each certificate holder shall report occurrences to the ECAA in accordance with Part 39 subpart (B).

121.703 Mechanical reliability reports

(a) Each certificate holder shall report the occurrence or detection of each failure, malfunction, or defect concerning:
    (1) Fires during flight and whether the related fire-warning system functioned properly;
    (2) Fires during flight not protected by a related fire-warning system;
    (3) False fire warning during flight;
    (4) An engine exhaust system that causes damage during flight to the engine, adjacent structure, equipment, or components;
    (5) An aircraft component that causes accumulation or circulation of smoke, vapor, or toxic or noxious fumes in the crew compartment or passenger cabin during flight;
    (6) Engine shutdown during flight because of flameout;

(7) Engine shutdown during flight when external damage to the engine or aircraft structure occurs;
(8) Engine shutdown during flight due to foreign object ingestion or icing;
(9) Engine shutdown during flight of more than one engine;
(10) A propeller feathering system or ability of the system to control overspeed during flight;
(11) A fuel or fuel-dumping system that affects fuel flow or causes hazardous leakage during flight;
(12) A landing gear extension or retraction or opening or closing of landing gear doors during flight;
(13) Brake system components that requires major repair; The pilot-in-command shall report the runway braking action special air-report (AIREP) when the runway braking action encountered is not as good as reported.
(14) Aircraft structure that requires major repair;
(15) Cracks, permanent deformation, or corrosion of aircraft structures, if more than the maximum acceptable to the manufacturer or the ECAA;
(16) Aircraft components or systems that result in taking emergency action during flight (except action to shut down an engine); and
(17) Emergency evacuation systems or components including all exit doors, passenger emergency evacuation lighting systems, or evacuation equipment that are found defective, or that fail to perform the intended functions during an actual emergency or during training, testing, maintenance, demonstrations, or inadvertent deployments.

(b) For the purpose of this section "during flight" means the period from the moment the aircraft leaves the surface of the earth on takeoff until it touches down on landing.
(c) In addition to the reports required by paragraph (a) of this section, each certificate holder shall report any other failure, malfunction, or defect in an aircraft that occurs or is detected at any time if, in its opinion, that failure, malfunction, or defect has endangered or may endanger the safe operation of an aircraft used by it.
(d) Each certificate holder shall make the notification an send each report required by this section in accordance with Part 39 subpart (B) to the ECAA.
(e) The certificate holder shall transmit the reports required by this section in a manner and on a form that is convenient to its system of communication and procedure, and shall include in the first daily report as much of the following as is available:
(1) Type and identification number of the aircraft;
(2) The name of the operator;
(3) The date, flight number, and stage during which the incident occurred (e.g., preflight, takeoff, climb, cruise, descent, landing, and inspection);
(4) The emergency procedure effected (e.g., unscheduled landing and emergency descent);
(5) The nature of the failure, malfunction, or defect;
(6) Identification of the part and system involved, including available information pertaining to type designation of the major component and time since overhaul;
(7) Apparent cause of the failure, malfunction, or defect (e.g., wear, crack, design deficiency, or personnel error);
(8) Whether the part was repaired, replaced sent to the manufacturer, or other action taken;
(9) Whether the aircraft was grounded; and
(10) Other pertinent information necessary for more complete identification, determination of seriousness, or corrective action.

(f) No person may withhold a report required by this section even though all information required in this section is not available.
(g) The certificate holder shall transmit to the organizations responsible for design of aircraft and/or modification to the aircraft, all information on faults, occurrences that cause or might cause adverse effects on the continuing airworthiness of the aircraft and/or modification .
(h) When a certificate holder gets additional information, including information from the manufacturer or other agency, concerning a report required by this section, it shall expeditiously submit it as a supplement to the first report and reference the date and place of submission of the first report.

121.705 Continuing airworthiness information

(a) The operator of an aeroplane over 5700 kg maximum certificated take-off mass shall monitor and assess maintenance and operational experience with respect to continuing airworthiness and provide the information to the organization responsible for type design and to the ECAA.

(b) The operator of a helicopter over 3180 kg maximum mass shall monitor and assess maintenance and operational experience with respect to continuing airworthiness and provide the information to the organization responsible for type design and to the ECAA.

(c) The operator of an aeroplane over 5700 kg maximum mass shall obtain and assess continuing airworthiness information and recommendations available from the organization responsible for the type design and shall implement resulting actions considered necessary in accordance with a procedure acceptable to the ECAA.

(d) The operator of a helicopter over 3180 kg maximum mass shall obtain and assess continuing airworthiness information and recommendations available from the organization responsible for the type design and shall implement resulting actions considered necessary in accordance with a procedure acceptable to the ECAA.

121.707 Alteration and repair reports

(a) Each certificate holder shall, promptly upon its completion, prepare a report of each major alteration or major repair of an airframe, aircraft engine, propeller, or appliance of an aircraft operated by it.

(b) The certificate holder shall submit a copy of each report of a major alteration to, and shall keep a copy of each report of a major repair available for inspection by, the representative of the ECAA.

121.709 Airworthiness release or aircraft log entry

(a) No certificate holder may operate an aircraft after maintenance, preventive maintenance or alterations are performed on the aircraft unless the certificate holder's AMO, or the person with whom the certificate holder arranges for the performance of the maintenance, preventive maintenance, prepares or causes to be prepared:
  (1) An airworthiness release; or
  (2) An appropriate entry in the aircraft log.

(b) The airworthiness release or log entry required by paragraph (a) of this section must:
  (1) Be prepared in accordance with the procedures set forth in the certificate holder's manual;
  (2) Include a certification that:
    (i) The work was performed in accordance with the requirements of the certificate holder's manual;
    (ii) All items required to be inspected were inspected by an authorized person who determined that the work was satisfactorily completed;
    (iii) No known condition exists that would make the aircraft un airworthy; and
    (iv) So far as the work performed is concerned, the aircraft is in condition for safe operation; and
  (3) Be signed by an authorized person. Notwithstanding this paragraph, after maintenance, preventive maintenance, or alterations performed by an approved maintenance organization certificated under the provisions of Part 145, the airworthiness release or log entry required by paragraph (a) of this section may be signed by a person authorized by that repair station.

(c) When an airworthiness release form is prepared the certificate holder must give a copy to the pilot in command and must keep a record thereof for at least six months.

(d) Instead of restating each of the conditions of the certification required by paragraph (b) of this section, the certificate holder may state in its manual that the signature of an authorized certificated mechanic or repairman constitutes that certification.

121.713 Retention of contracts and amendments: Commercial contracts

Each operator shall keep a copy of each written contract under which it provides services as a commercial operator for a period of at least one year after the execution of that contract or change.

121.715 In-flight medical emergency reports

(a) For a period of 24 months commencing with the effective date of this rule, each certificate holder shall maintain records on each medical emergency occurring during flight time resulting in use of the emergency medical kit required under appendix A, diversion of the aircraft, or death of a passenger or crewmember. These records shall include a description of how the medical kit was used, by whom, and the outcome of the medical emergency.

(b) The certificate holder shall submit these records, or a summary thereof, to its assigned ECAA operations inspector within 30 days after the end of each 12- month period during the 24 months specified in paragraph (a).

121.717 through 121.719 Reserved

Subpart W
Security

121.721 Applicability

(a) This subpart is applicable to all operators certified under this Part.
(b) All certificate holders are required to comply with the applicable requirements of ECAR Part 108.

121.723 Security of the flight crew

(a) In all aeroplanes which are equipped with a flight crew compartment door, this door shall be capable of being locked, and means shall be provided by which cabin crew can discreetly notify the flight crew in the event of suspicious activity or security breaches in the cabin.
(b) From 1 November 2003, all passenger-carrying aeroplanes of a maximum certificate take-off mass in excess of 45500 kg or with a passenger seating capacity greater than 60 shall be equipped with an approved flight crew compartment door and meets the following requirements:
  (1) Resist penetration by small arms fire and grenade shrapnel, and to resist forcible intrusions by unauthorized persons.
  (2) Shall be capable of being locked and unlocked from either pilot's station and operable from flightdeck only; and
  (3) Shall be provided by means to monitor from either pilot's station the area outside the flight crew compartment to identify persons requesting entry and to detect suspicious behavior or potential threat.
(c) From 1 November 2003, no air carrier may operate passenger carrying category airplanes in paragraph (b) above unless the air carrier has procedures, in place that are acceptable to the Egyptian civil aviation authority to prevent access to the flightdeck except as authorized s follows:
  (1) No person other than a person who is assigned to perform duty on the flight deck may have a key to the flight deck door that will provide access to the flightdeck.
  (2) Except when it is necessary to permit access and egress by persons authorized in accordance with paragraph(C)(3) of this section, a pilot in command of an airplane that has a lockable flight deck door in accordance with 121.538(a) and that is carrying passengers shall ensure that the door separating the flight crew compartment from the passenger compartment is closed and locked at all times when the airplane is being operated; and
  (3) No person may admit any person to the flight deck of an airplane unless the person being admitted is:
    (i) A crewmember,
    (ii) An inspector of the civil aviation authority responsible for flight safety.
(d) All passenger-carrying airplanes of maximum certificate take-off mass of 45500 kg or less or with a passenger seating capacity of 60 or less should be equipped with an approved flight crew compartment door, where practicable, that is designed to resist penetration by small arms fire and grenade shrapnel, and to resist forcible intrusions by unauthorized persons. This door should by:
  (1) Capable of being locked and unlocked from either pilot's station.
  (2) Closed and locked from the time all doors are closed following embarkation until any such door is opened for disembarkation, except when necessary to permit access and egress by authorized person; and
  (3) Means should be provided for monitoring from either pilot's the entire door area outside the flight crew compartment to identify persons requesting entry and to detect suspicious behavior potential threat.

Subpart X
Emergency Medical Equipment and Training

121.801 Applicability.

This subpart prescribes the emergency medical equipment and training requirements applicable to all certificate holders operating passenger-carrying airplanes under this part. Nothing in this subpart is intended to require certificate holders or its agents to provide emergency medical care or to establish a standard of care for the provision of emergency medical care.

121.803 Emergency medical equipment.

(a) No person may operate a passenger-carrying airplane under this part unless it is equipped with the emergency medical equipment listed in this section.

(b) Each equipment item listed in this section—

(1) Must be inspected regularly in accordance with inspection periods established in the operations specifications to ensure its condition for continued serviceability and immediate readiness to perform its intended emergency purposes;

(2) Must be readily accessible to the crew and, with regard to equipment located in the passenger compartment, to passengers;

(3) Must be clearly identified and clearly marked to indicate its method of operation; and

(4) When carried in a compartment or container, must be carried in a compartment or container marked as to contents and the compartment or container, or the item itself, must be marked as to date of last inspection.

(c) For treatment of injuries, medical events, or minor accidents that might occur during flight time each airplane must have the following equipment that meets the specifications and requirements of appendix A of this part:

(1) Approved first-aid kits.

(2) In airplanes for which a flight attendant is required, an approved emergency medical kit.

(3) In airplanes for which a flight attendant is required and with a maximum payload capacity of more than 7,500 pounds, an approved automated external defibrillator.

121.805 Crewmember training for in-flight medical events.

(a) Each training program must provide the instruction set forth in this section with respect to each airplane type, model, and configuration, each required crewmember, and each kind of operation conducted, insofar as appropriate for each crewmember and the certificate holder.

(b) Training must provide the following:

(1) Instruction in emergency medical event procedures, including coordination among crewmembers.

(2) Instruction in the location, function, and intended operation of emergency medical equipment.

(3) Instruction to familiarize crewmembers with the content of the emergency medical kit.

(4) Instruction to familiarize crewmembers with the content of the emergency medical kit .

(5) For each flight attendant—

(i) Instruction, to include performance drills, in the proper use of automated external defibrillators.

(ii) Instruction, to include performance drills, in cardiopulmonary resuscitation.

(iii) Recurrent training, to include performance drills, in the proper use of an automated external defibrillators and in cardiopulmonary resuscitation at least once every 24 months.

(c) The crewmember instruction, performance drills, and recurrent training required under this section are not required to be equivalent to the expert level of proficiency attained by professional emergency medical personnel.

Subpart Y
The Safe Transport of Dangerous Goods by Air

121.807 General Applicability

Note 1. — Annex 18 — The Safe Transport of Dangerous Goods by Air include broad provisions for the international transport of dangerous goods by air which are amplified in the Technical Instructions for the Safe Transport of Dangerous Goods by Air (Doc 9284, Technical Instructions). Annex 18, Chapter 2 includes provisions making dangerous goods under certain conditions not subject to Annex 18. These are amplified in Parts 1;1 and 1;2 of the Technical Instructions.

Note 2. — Due to the differences in the type of operations carried out by helicopters, compared to those of aeroplanes, some additional considerations need to be made when dangerous goods are carried by helicopter, as described in the Technical Instructions for the Safe Transport of Dangerous Goods by Air (Doc 9284, Technical Instructions), Part 7;7.

121.809 State Responsibilities

Note 1. — Annex 18 — The Safe Transport of Dangerous Goods by Air, Chapter 2, contains requirements for each State to take the necessary measures to achieve compliance with the detailed provisions contained in the Technical Instructions.

Note 2. — Operator responsibilities for the transport of dangerous goods are contained in Chapters 8, 9 and 10 of Annex 18. Part 7 of the Technical Instructions contains the operator's responsibilities and requirements for incident and accident reporting

Note 3. — Annex 18, Chapter 11 contains requirements for each Contracting State to establish oversight procedures for all entities (including packers, shippers, ground handling agents and operators) performing dangerous goods functions.

Note 4. — The requirements pertaining to crew members or passengers carrying dangerous goods on aircraft are set forth in Part 8;1, of the Technical Instructions.

Note 5. — Operator material (COMAT) that meets the classification criteria of the Technical Instructions for dangerous goods are considered cargo and must be transported in accordance with Part 1;2; 2.2 of the Technical Instructions (e.g., aircraft parts such as chemical oxygen generators, fuel control units, fire extinguishers, oils, lubricants and cleaning products).

121.811 Operators with No Specific Approval For The Transport Of Dangerous Goods As Cargo Appendix A

The ECAA shall ensure that operators with no specific approval to transport dangerous goods have:

a) established a dangerous goods training programme that meets the requirements of Annex 18, the applicable requirements of the Technical Instructions, Part 1;4 and the requirements of the State's regulations, as appropriate. Details of the dangerous goods training programme shall be included in the operators' operations manuals; and

b) established dangerous goods policies and procedures in their operations manuals to meet, at a minimum, the requirements of Annex 18, the Technical Instructions and the State's regulations to allow operator personnel to:

1) identify and reject undeclared dangerous goods, including COMAT classified as dangerous goods; and

2) report to the appropriate authorities of the ECAA, and the State in which it occurred, any:

i) occasions when undeclared dangerous goods are discovered in cargo or mail; and

ii) dangerous goods accidents and incidents.

121.813 Operators with A Specific Approval For The Transport Of Dangerous Goods As Cargo

The ECAA shall issue a specific approval for the transport of dangerous goods and ensure that the operator:

a) establishes a dangerous good training programme that meets the requirements in the Technical Instructions, Part 1;4, and the requirements of the State regulations, as appropriate. Details of the dangerous goods training programme shall be included in the operator's operations manuals
b) establishes dangerous goods policies and procedures in its operations manual to meet, at a minimum, the requirements of Annex 18, the Technical Instructions and the State's regulations to enable operator personnel to:

1) identify and reject undeclared or misdeclared dangerous goods in cargo or mail, including COMAT classified as dangerous goods;

2) report to the appropriate authorities of the ECAA, and the State in which it occurred, any:

i) occasions when undeclared or misdeclared dangerous goods are discovered in cargo or mail; and

ii) dangerous goods accidents and incidents;

3) report to the appropriate authorities of the ECAA any occasions when dangerous goods are discovered to have been carried:

i) when not loaded, segregated, separated or secured in accordance with the Technical Instructions, Part 7;2; and ii) without information having been provided to the pilot-in-command;

4) accept, handle, store, transport, load and unload dangerous goods, including COMAT classified as dangerous goods as cargo on board an aircraft; and

5) provide the pilot-in-command with accurate and legible written or printed information concerning dangerous goods that are to be carried as cargo;

i) for helicopter operations, with the approval of the ECAA, the information provided to the pilot- in-command may be abbreviated or briefed by other means (e.g., radio communication, as part of the working flight documentation such as a journey log or operational flight plan) where circumstances make it impractical to produce written or printed information or a dedicated form (see Part S-7;4.8 of the Supplement to the Technical Instructions).

121.815 Dispensing or Expending Of Dangerous Goods From Helicopters

(a) Each operator shall prepare and keep current a manual containing operational guidelines and handling procedures for the use and guidance of flight, maintenance and ground personnel concerned in the dispensing or expending of dangerous goods.

(b) No person, other than a required flight crew member, or person necessary for handling or dispensing the dangerous goods, shall be carried on the aircraft.

(c) The operator of the aircraft shall have prior permission for the dispensing or expending of dangerous goods from the owners of any airport to be used.

Note. — These provisions refer to operations where dangerous goods are carried on helicopters with the intent to dispense the items in flight (e.g., for the purpose of avalanche control).

121.817 Provision of Information

The operator shall ensure that all personnel, including third-party personnel, involved in the acceptance, handling, loading and unloading of cargo are informed of the operator's specific approval and limitations with regard to the transport of dangerous goods.

121.819 Domestic Commercial Air Transport Operation

The International Standards and Recommended Practices set forth in this chapter should be applied by all Contracting States, including in the case of domestic commercial air transport operations. Note. — Annex 18 contains a similar provision in this regard.

Appendix A
First-Aid Kits/Emergency Medical Kits

121.aa.1 Emergency first aid kits

(a) The operator must have an accepted procedure for the approval and use of emergency first aid kit(s) required for use by Part 121.309.

(b) Approved first-aid kits required by Part 121.309 must meet the following specifications and requirements:

(1) Each first-aid kit must be readily accessible to the crew, stored securely, and kept free from dust, moisture, and damaging temperatures, and contain only materials that are approved;

(2) Required first-aid kits must be distributed as evenly as practicable throughout the aircraft and be readily accessible to the cabin crew and in view of the possible use of medical supplies outside the aircraft in an emergency situation, they should be located near an exit;

(3) The minimum number of first-aid kits required is set forth in the following table:

No. of passengers	No. of first-aid kits
0-50	1
51-150	2
151-250	3
More than 250	4

(4) Except as provided in paragraph (5) , each first-aid kit must contain at least the following or other approved contents:

Contents		Quantity
Adhesive bandage compresses ..... 1 – inch		16
Adhesive tape ..... 1 - inch standard roll		2
Bandage compresses .... 4 - inch		8
Triangular bandage compresses. ....40- inch		5
Antiseptic swabs		20
Burn compound		
Arm splint		1
Leg splint		1
Roller bandage	4 inch	4
Bandage scissors		1
A handbook on first aid		
“ground-air visual signal code for use by survivors” as contained in Annex 12		
Ophthalmic ointment		
A decongestant nasal spray		
Insect repellent		
Emollient eye drops		
Sunburn cream		
Water-miscible antiseptic/skin cleanser		
Materials for treatment of extensive burns		
An artificial plastic airway and splints		

(5) Arm and leg splints which do not fit within a first-aid kit may be stowed in a readily accessible location that is as near as practicable to the kit.

121.aa.3 Emergency medical kits

(a) The operator must have an accepted procedure for the approval and use of the emergency medical kit(s) required for use by Part 121.309.

(b) The approved emergency medical kit required by Part 121.309 for passenger flights must meet the following specifications and requirements:

(1) Approved emergency medical equipment shall be stored securely so as to keep it free from dust, moisture, and damaging temperatures;

(2) One approved emergency medical kit shall be provided for each aircraft during each passenger flight and shall be located so as to be readily accessible to crewmembers; and

(3) The approved emergency medical kit must contain, as a minimum, the following appropriately maintained contents in the specified quantities:

Contents	**Quantity**
Sphygmomanometer	1
Stethoscope	1
Airways, oropharyngeal (3 sizes)	3
Syringes (sizes necessary to	
administer required drugs	4
Needles (sizes necessary to administer required drugs)	6
50 percent Dextrose injection,.50cc	1
Epinephrine 1:1000, single dose ample or equivalent	2
Diphenjydramin HC1 injection, single. dose ampoule or equivalent	2
Nitroglycerin tablets	10
Basic Instructions for use of the drugs in the kit composed of the following:	1
- coronary vasodilators	
- analgesics	
- diuretics	
- anti- spasmodic	
- anti - allergies	
- central nervous system stimulant	
- circulatory stimulant	
- coronary vasodilator	
- antidiarrhoeic and motion sickness medications	
- Steroids	
- sedatives	
- ergometrine	
- injectable broncho dilator	
In addition to the following equipment	
- one pair of sterile surgical gloves	
- sphygmomanometer	
- stethoscope	
- sterile scissors	
- homeostatic forceps	
- homeostatic bandages or tourniquet	
- sterile equipment for suturing wounds	
- disposable syringes and needles	
- disposable scalpel handle and blade	

Appendix E
Flight Training Requirements

The maneuvers and procedures required by Part 121.424 of this Part for pilot initial, transition, and upgrade flight training are set forth in the certificate holder's approved low altitude windshear flight training program, 121.423 extended envelope training, and in this appendix and must be performed in-flight except that windshear maneuvers and procedures and extended envelope training must be performed in an airplane simulator in which the maneuvers and procedures are specifically authorized to be accomplished and except to the extent that certain other maneuvers and procedures may be performed in an airplane simulator with a visual system (visual simulator), an airplane simulator without a visual system (nonvisual simulator), a training device, or a static airplane as indicated by the appropriate symbol in the respective column opposite the maneuver or procedure.

Whenever a maneuver or procedure is authorized to be performed in a nonvisual simulator, it may be performed in a visual simulator; when authorized in a training device, it may be performed in a visual or nonvisual simulator, and in some cases, a static airplane. Whenever the requirement may be performed in either a training device or a static airplane, the appropriate symbols are entered in the respective columns.

For the purpose of this appendix, the following symbols mean:

P = Pilot in Command (PIC).
S = Second in Command (SIC).
B = PIC and SIC.
F = Flight Engineer.
PJ = PIC transition Jet to Jet.
PP = PIC transition Prop. to Prop.
SJ = SIC transition Jet to Jet.
SP = SIC transition Prop. to Prop.
AT = All transition categories (PJ, PP, SJ, SP).
PS = SIC upgrading to PIC (same airplane).
SF = Flight Engineer upgrading to SIC (same airplane).
BU = Both SIC and Flight Engineer upgrading (same airplane).

Flight Training Requirements

Maneuver / Procedures	Initial Training					Transition training					Upgrade training				
	A/P		Simulator			A/P		Simulator			A/P		Simulator		
	In-flight	Static	Visual Simulator	Non Visual Simulator	Training Device	In-flight	Static	Visual Simulator	Non Visual Simulator	Training Device	In-flight	Static	Visual Simulator	Non Visual Simulator	Training Device
As appropriate to the airplane and the operation involved, flight training for pilots must include the following maneuvers and procedures.															
I Preflight:															
(a) Visual inspection of the exterior and interior of the airplane, the location of each item to be inspected, and the purpose for inspecting it. If a flight engineer is a required crewmember for the particular type of airplane, the visual inspection may be replaced by using an approved pictorial means that realistically portrays the location and detail of preflight inspection items.		B					AT					BU			
(b) Use of the prestart check list, appropriate control system checks, starting procedures, radio and electronic equipment checks, and the selection of proper navigation and communications radio facilities and frequencies prior to flight.				B					AT					BU	
(c)(1) Before March 12, 2019, taxiing, sailing, and docking procedures in compliance with instructions issued by the appropriate Traffic Control Authority or by the person conducting the training	B					AT					BU				
(2) Taxiing. Beginning March 12, 2019, this maneuver includes the following:															

Maneuver / Procedures	Initial Training					Transition training					Upgrade training				
	A/P		Simulator			A/P		Simulator			A/P		Simulator		
	In-flight	Static	Visual Simulator	Non Visual Simulator	Training Device	In-flight	Static	Visual Simulator	Non Visual Simulator	Training Device	In-flight	Static	Visual Simulator	Non Visual Simulator	Training Device
(i) Taxiing, sailing, and docking procedures in compliance with instructions issued by the appropriate Traffic Control Authority or by the person conducting the training.	B					AT					BU				
(ii) Use of airport diagram (surface movement chart).	B					AT					BU				
(iii) Obtaining appropriate clearance before crossing or entering active runways.	B					AT					BU				
(iv) Observation of all surface movement guidance control markings and lighting.	B					AT					BU				
(d)(1) Before March 12, 2019, pre-takeoff checks that include power-plant checks				B					AT					BU	
(2) Beginning March 12, 2019, pre-takeoff procedures that include power-plant checks, receipt of takeoff clearance and confirmation of aircraft location, and FMS entry (if appropriate) for departure runway prior to crossing hold short line for takeoff			B					AT					BU		
II Takeoffs:															
(a) Normal takeoffs which, for the purpose of this maneuver, begin when the airplane is taxied into position on the runway to be used.	B					AT					BU				
(b) Takeoffs with instrument conditions simulated at or before reaching an altitude of 100 feet above the airport elevation.			B					AT					BU		
(c)(1) Crosswind takeoffs	B					AT					BU				
(2) Beginning March 12, 2019, crosswind takeoffs	B					AT					BU				

Maneuver / Procedures	Initial Training					Transition training					Upgrade training				
	A/P		Simulator			A/P		Simulator			A/P		Simulator		
	In-flight	Static	Visual Simulator	Non Visual Simulator	Training Device	In-flight	Static	Visual Simulator	Non Visual Simulator	Training Device	In-flight	Static	Visual Simulator	Non Visual Simulator	Training Device
including crosswind takeoffs with gusts if practicable under the existing meteorological, airport, and traffic conditions.															
(c) Crosswind takeoffs.	B					AT					BU				
(d) Takeoffs with a simulated failure of the most critical powerplant.			B					AT					BU		
(1) At a point after V1 and before V2 that in the judgment of the person conducting the training is appropriate to the airplane type under the prevailing conditions; or															
(2) At a point as close as possible after V1 when V1 and V2 or V1 and VR are identical; or															
(3) At the appropriate speed for nontransport category airplanes. For transition training in an airplane group with engines mounted in similar positions, or from wing mounted engines to aft fuselage mounted engines, the maneuver may be performed in a nonvisual simulator.															
(e) Rejected takeoffs accomplished during a normal takeoff run after reaching a reasonable speed determined by giving due consideration to aircraft characteristics, runway length, surface conditions, wind direction and velocity, brake heat energy, and any other pertinent factors that may adversely affect safety or the airplane.				B					AT					BU	
Training in at least one of the above takeoffs must be accomplished at night. For transitioning pilots this requirement may be met during the operating															

Maneuver / Procedures	Initial Training					Transition training					Upgrade training				
	A/P		Simulator			A/P		Simulator			A/P		Simulator		
	In-flight	Static	Visual Simulator	Non Visual Simulator	Training Device	In-flight	Static	Visual Simulator	Non Visual Simulator	Training Device	In-flight	Static	Visual Simulator	Non Visual Simulator	Training Device
experience required under Part 121.434 of this part by performing a normal takeoff at night when a check airman serving as pilot in command is occupying a pilot station.															
III Flight Maneuvers and Procedures:															
(a) Turns with and without spoilers.				B					AT					BU	
(b) Tuck and Mach buffet				B					AT					BU	
(c) Maximum endurance and maximum range procedures.				B					AT					BU	
(d) Operation of systems and controls at the flight engineer station				B					AT					PS	
(e) Runway and jammed stabilizer.				B					AT					BU	
(f) Normal and abnormal or alternate operation of the following systems and procedures:															
(1) Pressurization					B					AT					BU
(2) Pneumatic					B					AT					BU
(3) Air conditioning.					B					AT					BU
(4) Fuel and oil.		B			B		AT			AT		BU			BU
(5) Electrical.		B			B		AT			AT		BU			BU
(6) Hydraulic.		B			B		AT			AT		BU			BU
(7) Flight control.		B			B		AT					BU			BU
(8) Anti-icing and deicing.				B					AT					BU	
(9) Autopilot.				B					AT					BU	
(10) Automatic or other approach aids.	B			B					AT		SF			BU	
(11) Stall warning devices, stall avoidance devices, and stability augmentation devices.	B			B					AT		SF			BU	
(12) Airborne radar devices.				B					AT					BU	
(13) Any other systems, devices, or aids available.				B					AT					BU	
(14) Electrical, hydraulic, flight control, and flight instrument system malfunctioning or failure.		B			B		AT			AT		BU			BU
(15) Landing gear and flap systems failure or		B			B		AT			AT		BU			BU

Maneuver / Procedures	Initial Training					Transition training					Upgrade training				
	A/P		Simulator			A/P		Simulator			A/P		Simulator		
	In-flight	Static	Visual Simulator	Non Visual Simulator	Training Device	In-flight	Static	Visual Simulator	Non Visual Simulator	Training Device	In-flight	Static	Visual Simulator	Non Visual Simulator	Training Device
malfunction.															
(16) Failure of navigation or communications equipment.				B					AT					BU	
(g) Flight emergency procedures that include at least the following:															
(1) Powerplant, heater, cargo compartment, cabin, flight deck, wing, and electrical fires.		B			B		AT			AT		BU			BU
(2) Smoke control.		B			B		AT			AT		BU		BU	BU
(3) Powerplant failures.		B			B				AT						BU
(4) Fuel jettisoning.		B		B			B			B		BU			BU
(5) Any other emergency procedures outlined in the appropriate flight manual.				B					AT					BU	
(h) Steep turns in each direction. Each steep turn must involve a bank angle of 45° with a heading change of at least 180° but not more than 360°.				P					PJ					PS	
(i) Stall Prevention. For the purpose of this training the approved recovery procedure must be initiated at the first indication of an impending stall (buffet, stick shaker, aural warning). Stall prevention training must be conducted in at least the following configurations: (1) Takeoff configuration (except where the airplane uses only a zero-flap takeoff configuration)				B					AT					BU	
(2) Clean configuration															
(3) Landing configuration															
(i) Stall Prevention. For the purpose of this training the approved recovery procedure must be initiated at the first indication of an impending stall (buffet, stick shaker, aural warning). Stall				B					AT					BU	

Maneuver / Procedures	Initial Training					Transition training					Upgrade training				
	A/P		Simulator			A/P		Simulator			A/P		Simulator		
	In-flight	Static	Visual Simulator	Non Visual Simulator	Training Device	In-flight	Static	Visual Simulator	Non Visual Simulator	Training Device	In-flight	Static	Visual Simulator	Non Visual Simulator	Training Device
prevention training must be conducted in at least the following configurations:															
(j) Recovery from specific flight characteristics that are peculiar to the airplane type.				B					AT					BU	
(k) Instrument procedures that include the following:															
(1) Area departure and arrival.				B					AT					BU	
(2) Use of navigation systems including adherence to assigned radials.				B					AT					BU	
(3) Holding.				B					AT					BU	
(l) ILS instrument approaches that include the following:															
(1) Normal ILS approaches.	B					AT					BU				
(2) Manually controlled ILS approaches with a simulated failure of one powerplant which occurs before initiating the final approach course and continues to touchdown or through the missed approach procedure.	B							AT					BU		
(m) Instrument approaches and missed approaches other than ILS which include the following:															
(1) Nonprecision approaches that the trainee is likely to use.					B					AT			BU		
(2) In addition to subparagraph (1) of this paragraph, at least one other nonprecision approach and missed approach procedure that the trainee is likely to use. In connection with paragraphs III(k) and III(I), each instrument approach must be performed according to any procedures and limitations approved for the approach facility used. The instrument approach begins			B					AT					BU		

Maneuver / Procedures	Initial Training					Transition training					Upgrade training				
	A/P		Simulator			A/P		Simulator			A/P		Simulator		
	In-flight	Static	Visual Simulator	Non Visual Simulator	Training Device	In-flight	Static	Visual Simulator	Non Visual Simulator	Training Device	In-flight	Static	Visual Simulator	Non Visual Simulator	Training Device
when the airplane is over the initial approach fix for the approach procedure being used (or turned over to the final approach controller in the case of CA approach) and ends when the airplane touches down on the runway or when transition to a missed approach configuration is completed.															
(n) Circling approaches which include the following:	B					AT					BU				
(1) That portion of the circling approach to the authorized minimum altitude for the procedure being used must be made under simulated instrument conditions.															
(2) The circling approach must be made to the authorized minimum circling approach altitude followed by a change in heading and the necessary maneuvering (by visual reference) to maintain a flight path that permits a normal landing on a runway at least 90° from the final approach course of the simulated instrument portion of the approach. (3) The circling approach must be performed without excessive maneuvering, and without exceeding the normal operating limits of the airplane. The angle of bank should not exceed 30°. Training in the circling approach maneuver is not required for a pilot employed by a certificate holder subject to the operating rules of Part 121 of this chapter if the certificate holder's manual prohibits a circling approach in weather conditions below 1000 - 3 (ceiling and														

Maneuver / Procedures	Initial Training					Transition training					Upgrade training				
	A/P		Simulator			A/P		Simulator			A/P		Simulator		
	In-flight	Static	Visual Simulator	Non Visual Simulator	Training Device	In-flight	Static	Visual Simulator	Non Visual Simulator	Training Device	In-flight	Static	Visual Simulator	Non Visual Simulator	Training Device
visibility); for a SIC if the certificate holder's manual prohibits the SIC from performing a circling approach in operations under this part.															
(o) Zero flap approaches. Training in this maneuver is not required for a particular airplane type if the ECAA has determined that the probability of flap extension failure on that type airplane is extremely remote due to system design. In making this determination, the ECAA whether training on slats only and partial flap approaches is necessary.	P							PP, PJ.					PS		
(p) Missed approaches which include the following:															
(1) Missed approaches from ILS approaches.			B					AT					BU		
(2) Other missed approaches.					B					AT					BU
(3) Missed approaches that include a complete approved missed approach procedure.					B					AT			BU		
(4) Missed approaches that include a powerplant failure.			B					AT					BU		
IV Landings and Approaches to Landings:															
(a) Normal landings.	B					AT					BU				
(b) Landing and go-around with the horizontal stabilizer out of trim.	P							PJ, PP.							PS
(c) Landing in sequence from an ILS instrument approach.	B					AT		AT					BU		
(d)(1) Cross wind landing	B					AT					BU				
(2) Beginning March 12, 2019, crosswind landing, including crosswind landings with gusts if practicable under the existing meteorological, airport, and traffic conditions	B					AT					BU				
(e) Maneuvering to a															

Maneuver / Procedures	Initial Training					Transition training					Upgrade training				
	A/P		Simulator			A/P		Simulator			A/P		Simulator		
	In-flight	Static	Visual Simulator	Non Visual Simulator	Training Device	In-flight	Static	Visual Simulator	Non Visual Simulator	Training Device	In-flight	Static	Visual Simulator	Non Visual Simulator	Training Device
landing with simulated powerplant failure, as follows:															
(1) Except as provided in subparagraph (3) of this paragraph in the case of 3 engine airplanes, maneuvering to a landing with an approved procedure that approximates the loss of two powerplants (center and one outboard engine).	P							PJ, PP.					PS		
(2) Except as provided in subparagraph (3) of this paragraph, in the case of other multiengine airplanes, maneuvering to a landing with a simulated failure of 50 percent of available powerplants with the simulated loss of power on one side of the airplane.	P							PJ, PP.					PS		
(3) Notwithstanding the requirements of subparagraphs (1) and (2) of this paragraph, cockpit crewmembers who satisfy those requirements in a visual simulator must also:															
(i) Take in-flight training in one engine inoperative landings; and															
(ii) In the case of a second in command upgrading to a pilot in command and who has not previously performed the maneuvers required by this paragraph in flight, meet the requirements of this paragraph applicable to initial training for pilots in command.															
(4) In the case of cockpit crewmembers other than the pilot in command, perform the maneuver with the simulated loss of power of the most critical powerplant only.															
(f) Landing under simulated circling approach conditions (exceptions under III(n)	B							AT					BU		

Maneuver / Procedures	Initial Training					Transition training					Upgrade training				
	A/P		Simulator			A/P		Simulator			A/P		Simulator		
	In-flight	Static	Visual Simulator	Non Visual Simulator	Training Device	In-flight	Static	Visual Simulator	Non Visual Simulator	Training Device	In-flight	Static	Visual Simulator	Non Visual Simulator	Training Device
applicable to this requirement).															
(g) Rejected landings that include a normal missed approach procedure after the landing is rejected. For the purpose of this maneuver the landing should be rejected at approximately 50 feet and approximately over the runway threshold.	B							AT					BU		
(h) Zero flap landings if the ECAA finds that maneuver appropriate for training in the airplane.	P							PP, PJ.					PS		
(i) Manual reversion (if appropriate). Training in landings and approaches to landings must include the types and conditions provided in IV(a) through (i) but more than one type may be combined where appropriate.			B					AT					BU		
Training in one of the above landings must be accomplished at night. For transitioning pilots, this requirement may be met during the operating experience required under Part 121.434 of this Part by performing a normal landing when a designated examiner or check pilot serving as pilot in command is occupying a pilot station.	B					AT					BU				

APPENDIX F
Proficiency Check Requirements

The maneuvers and procedures required by Part 121.441 for pilot proficiency checks are set forth in this appendix and must be performed in-flight except to the extent that certain maneuvers and procedures may be performed in an aircraft simulator with a visual system (visual simulator), an aircraft simulator without a visual system (non-visual simulator), or a training device as indicated by the appropriate symbol in the respective column opposite the maneuver or procedure.

Whenever a maneuver or procedure is authorized to be performed in a non-visual simulator, it may also be performed in a visual simulator; when authorized in a training device, it may be performed in a visual or non-visual simulator.

For the purpose of this appendix, the following symbols mean:

P = Pilot in command.

B = Both pilot in command and second in command.

* = A symbol and asterisk (B*) indicates that a particular condition is specified in the maneuvers and procedures column.

= When a maneuver is preceded by this symbol it indicates the maneuver may be required in the aircraft at the discretion of the person conducting the check.

Throughout the maneuvers prescribed in this appendix, good judgment commensurate with a high level of safety must be demonstrated. In determining whether such judgment has been shown, the person conducting the check considers adherence to approved procedures, actions based on analysis of situations for which there is no prescribed procedure or recommended practice, and qualities of prudence and care in selecting a course of action.

Maneuvers / Procedures	Required		Permitted			
	Simulated Instrument Conditions	In-flight	Visual Simulator	Non-Visual Simulators	Training Devices	Waiver Provisions of 121.441(d)
The procedures and maneuvers set forth in this appendix must be performed in a manner that satisfactorily demonstrates knowledge and skill with respect to: (1)The airplane, its systems and components;						
(2) Proper control of airspeed, configuration, direction, altitude, and attitude in accordance with procedures and limitations contained in the approved aircraft flight manual, the certificate holder's operations manual, check lists, or other approved material appropriate to the aircraft type; and (3) Compliance with approach, ATS or other applicable procedures.						
I Preflight:						
(a) Equipment examination (oral or written). As part of the practical test the equipment examination must be closely coordinated with, and related to, the flight maneuvers portion, but may not be given during the flight maneuvers portion. The equipment examination must cover;					**B**	
(1) Subjects requiring a practical knowledge of the airplane, its powerplants, systems, components, operational, and performance factors;						
(2) Normal, abnormal, and emergency procedures, and the operations and limitations relating thereto; and						
(3)The appropriate provisions of the approved aircraft flight manual.						
The person conducting the check may accept, as equal to this equipment test, an equipment test given to the pilot in the certificate holder's ground school within the preceding 6 calendar months.						
(b) Preflight inspection. The pilot must:					**B**	**B***
(1) Conduct an actual visual inspection of the exterior and interior of the airplane, locating each item and explaining briefly the purpose for inspecting it; and						
(2) Demonstrate the use of the pre-start check list, appropriate control system checks, starting procedures, radio and electronic equipment checks, and the selection of proper navigation and communications radio facilities and frequencies prior to flight.						
Except for flight checks required by Part 121.424(d)(1)(ii), an approved pictorial means that realistically portrays the location and detail of preflight inspection items and provides for the portrayal of abnormal conditions may be substituted for the preflight inspection. If a flight engineer is a required cockpit crewmember for the particular type airplane, the visual inspection may be waived under Part 121.441(d).						
(c) Taxiing.		**B**				
(4) Before March 12, 2019, this maneuver includes						

Maneuvers / Procedures	Required		Permitted			
	Simulated Instrument Conditions	In-flight	Visual Simulator	Non-Visual Simulators	Training Devices	Waiver Provisions of 121.441(d)
taxiing (in the case of a second in command proficiency check to the extent practical from the second in command crew position), sailing, or docking procedures in compliance with instructions issued by the appropriate traffic control authority or by the person conducting the checks.						
(2) Beginning March 12, 2019, this maneuver includes the following: (i) Taxiing (in the case of a second in command proficiency check to the extent practical from the second in command crew position), sailing, or docking procedures in compliance with instructions issued by the appropriate traffic control authority or by the person conducting the checks. (ii) Use of airport diagram (surface movement chart). (iii) Obtaining appropriate clearance before crossing or entering active runways. (iv) Observation of all surface movement guidance control markings and lighting						
(d)(1) Power-plant checks. As appropriate to the airplane type				**B**		
(d)(2) Beginning March 12, 2019, pre-takeoff procedures that include power-plant checks, receipt of takeoff clearance and confirmation of aircraft location, and FMS entry (if appropriate), for departure runway prior to crossing hold short line for takeoff			**B**			
II Takeoff:						
(a) Normal. One normal takeoff which, for the purpose of this maneuver, begins when the aircraft is taxied into position on the runway to be used.		**B***				
(b) Instrument. One takeoff with instrument conditions simulated at or before reaching an altitude of 100 feet above the airport elevation.	**B**		**B***			
(c)(1) Crosswind. Before March 12, 2019, one crosswind takeoff, if practicable, under the existing meteorological, airport, and traffic conditions.		**B***				
(c)(2) Beginning March 12, 2019, one crosswind takeoff with gusts, if practicable, under the existing meteorological, airport, and traffic conditions		**B***				
Requirements (a) and (c) may be combined, and requirements (a), (b), and (c) may be combined if (b) is performed in-flight.						
(d) Powerplant failure. One takeoff with a simulated failure of the most critical powerplant			**B**			
(1) At a point after V1 and before V2 that in the judgment of the person conducting the check is appropriate to the aircraft type under the prevailing conditions;						
(2) At a point as close as possible after V1 when V1 and V2 or V1 and VR are identical; or						

Maneuvers / Procedures	Required		Permitted			
	Simulated Instrument Conditions	In-flight	Visual Simulator	Non-Visual Simulators	Training Devices	Waiver Provisions of 121.441(d)
(3) At the appropriate speed for non-transport category aircraft.						
In an aircraft group with aft fuselage mounted engines this maneuver may be performed in a non-visual simulator.						
(e) Rejected. A rejected takeoff may be performed in an aircraft during a normal takeoff run after reaching a reasonable speed determined by giving due consideration to aircraft characteristics, runway length, surface conditions, wind direction and velocity, brake heat energy, and any other pertinent factors that may adversely affect safety or the aircraft.				**B***		**B**
III Instrument procedures:						
(a) Area departure and area arrival. During each of these maneuvers the applicant must:	**B**			**B**		**B***
(1) Adhere to actual or simulated ATS clearances (including assigned radials); and						
(2) Properly use available navigation facilities.						
Either area arrival or area departure, but not both, may be waived under Part 121.441(d).						
(b) Holding. This maneuver includes entering, maintaining, and leaving holding patterns. It may be performed in connection with either area departure or area arrival.	**B**			**B**		**B**
(c) ILS and other instrument approaches. There must be the following:						
(1) At least one normal ILS approach;	**B**		**B**			
(2) At least one manually controlled ILS approach with a simulated failure of one powerplant. The simulated failure should occur before initiating the final approach course and must continue to touchdown or through the missed approach procedure;	**B**					
(3) At least one non-precision approach procedure that is representative of the non-precision approach procedures that the certificate holder is likely to use; and	**B**		**B**			
(4) Demonstration of at least one non-precision approach procedure on a letdown aid other than the approach procedure performed under subparagraph (3) of this paragraph that the certificate holder is approved to use. If performed in a training device, the procedures must be observed by a check pilot or an approved instructor.	**B**				**B**	
Each instrument approach must be performed according to any procedures and limitations approved for the approach facility used. The instrument approach begins when the aircraft is over the initial approach fix for the approach procedure being used (or turned over to the final approach controller in the case of CA approach) and ends when the aircraft touches down on						

Maneuvers / Procedures	Required		Permitted			
	Simulated Instrument Conditions	In-flight	Visual Simulator	Non-Visual Simulators	Training Devices	Waiver Provisions of 121.441(d)
the runway or when transition to a missed approach configuration is completed. Instrument conditions need not be simulated below 100 feet above touchdown zone elevation.						
(d) Circling approaches. If the certificate holder is approved for circling minimums below 1000-3, at least one circling approach must be made under the following conditions:			**B***			**B***
(1) The portion of the approach to the authorized minimum circling approach altitude must be made under simulated instrument conditions.	**B**					
(2) The approach must be made to the authorized minimum circling approach altitude followed by a change in heading and the necessary maneuvering (by visual reference) to maintain a flight path that permits a normal landing on a runway at least 90° from the final approach course of the simulated instrument portion of the approach.						
(3) The circling approach must be performed without excessive maneuvering, and without exceeding the normal operating limits of the aircraft. The angle of bank should not exceed 30°.						
If local conditions beyond the control of the pilot prohibit the maneuver or prevent it from being performed as required, it may be waived as provided in Part 121.441(d): Provided, however, that the maneuver may not be waived under this provision for two successive proficiency checks. The circling approach maneuver is not required for a second in command if the certificate holder's manual prohibits a second in command from performing a circling approach in operations under this Part.						
(e) Missed approach						
(1) Each pilot must perform at least one missed approach from an ILS approach.			**B***			
(2) Each pilot in command must perform at least one additional missed approach.			**P***			
A complete approved missed approach procedure must be accomplished at least once. At the discretion of the person conducting the check a simulated powerplant failure may be required during any of the missed approaches. These maneuvers may be performed either independently or in conjunction with maneuvers required under Sections III or V of this appendix. At least one missed approach must be performed in flight.						
IV In-flight Maneuvers:						
(a) Steep turns. At least one steep turn in each direction must be performed. Each steep turn must involve a bank angle of 45° with a heading change of at least 180° but not more than 360°.	**P**			**P**		**P**
(b) Approaches to stalls. For the purpose of this	**B**			**B**		**B***

Maneuvers / Procedures	Required		Permitted			
	Simulated Instrument Conditions	In-flight	Visual Simulator	Non-Visual Simulators	Training Devices	Waiver Provisions of 121.441(d)
maneuver the required approach to a stall is reached when there is a perceptible buffet or other response to the initial stall entry. Except as provided below there must be at least three approaches to stalls as follows:						
(1) One must be in the takeoff configuration (except where the aircraft uses only a zero flap takeoff configuration);						
(2) One in a clean configuration; and						
(3) One in a landing configuration.						
At the discretion of the person conducting the check, one approach to a stall must be performed in one of the above configurations while in a turn with the bank angle between 15° and 30°. Two out of the three approaches required by this paragraph may be waived.						
If the certificate holder is authorized to dispatch or flight release the aircraft with a stall warning device inoperative the device may not be used during this maneuver.						
(c) Specific flight characteristics. Recovery from specific flight characteristics that are peculiar to the aircraft type.				**B**		**B**
(d) Powerplant failures. In addition to specific requirements for maneuvers with simulated powerplant failures, the person conducting the check may require a simulated powerplant failure at any time during the check.				**B**		
V Landings and Approaches to Landings:						
Notwithstanding the authorizations for combining and waiving maneuvers and for the use of a simulator, at least two actual landings (one to a full stop) must be made for all pilot in command and initial second in command proficiency checks. Landings, and approaches to landings must include the following, but more than one type may be combined where appropriate:						
Landings and approaches to landings must include the types listed below, but more than one type may be combined where appropriate:						
(a) Normal landing.		**B**				
(b) Landing in sequence from an ILS instrument approach except that if circumstances beyond the control of the pilot prevent an actual landing, the person conducting the check may accept an approach to a point where in his judgment a landing to a full stop could have been made.		**B***				
(c)(1) Crosswind landing, if practical under existing meteorological, airport, and traffic conditions		**B***				
(c)(2) Beginning March 12, 2019, crosswind landing with gusts, if practical under existing meteorological, airport, and traffic conditions		**B***				
(d) Maneuvering to a landing with simulated powerplant failure as follows:						

Maneuvers / Procedures	Required		Permitted			
	Simulated Instrument Conditions	In-flight	Visual Simulator	Non-Visual Simulators	Training Devices	Waiver Provisions of 121.441(d)
(1) In the case of 3 engine aircraft , maneuvering to a landing with an approved procedure that approximates the loss of two powerplants (center and one outboard engine); or			**B***			
(2) In the case of other multiengine aircraft, maneuvering to a landing with a simulated failure of 50 percent of available powerplants, with the simulated loss of power on one side of the aircraft.			**B***			
Notwithstanding the requirements of subparagraphs (d) (1) and (2) of this paragraph, in a proficiency check for other than a pilot in command, the simulated loss of power may be only the most critical powerplant. However, if a pilot satisfies the requirements of subparagraphs (d) (1) or (2) of this paragraph in a visual simulator, he also must maneuver in flight to a landing with a simulated failure of the most critical powerplant. In addition, a pilot in command may omit the maneuver required by subparagraph (d)(1) or (d)(2) of this paragraph during a required proficiency check if he satisfactorily performed that maneuver during the preceding proficiency check, or during the preceding approved simulator course of training under the observation of a check airman, whichever was completed later.						
(e) Except as provided in paragraph (f) of this section, if the certificate holder is approved for circling minimums below 1000 - 3, a landing under simulated circling approach conditions, when performed in an aircraft, if circumstances beyond the control of the pilot prevent a landing, the person conducting the check may accept an approach to a point where, in his judgment, a landing to a full stop could have been made.			**B***			
(f) A rejected landing, including a normal missed approach procedure, that is rejected approximately 50 feet over the runway and approximately over the runway threshold. This maneuver may be combined with instrument, circling, or missed approach procedures, but instrument conditions need not be simulated below 100 feet above the runway.			**B**			
VI Normal and Abnormal Procedures:						
Each applicant must demonstrate the proper use of as many of the systems and devices listed below as the person conducting the check finds are necessary to determine that the person being checked has a practical knowledge of the use of the systems and devices appropriate to the aircraft type:						
(a) Anti-icing and deicing systems.				**B**		
(b) Autopilot systems.				**B**		
(c) Automatic or other approach aid systems.				**B**		
(d) Stall warning devices, stall avoidance devices, and stability augmentation devices.				**B**		

Maneuvers / Procedures	Required		Permitted			
	Simulated Instrument Conditions	In-flight	Visual Simulator	Non-Visual Simulators	Training Devices	Waiver Provisions of 121.441(d)
(e) Airborne radar devices.				**B**		
(f) Any other systems, devices, or aids available.				**B**		
(g) Hydraulic and electrical system failures and malfunctions.				**B**		
(h) Landing gear and flap systems failure or malfunction.					**B**	
(i) Failure of navigation or communications equipment.					**B**	
VII Emergency Procedures:						
Each applicant must demonstrate the proper emergency procedures for as many of the emergency situations listed below as the person conducting the check finds are necessary to determine that the person being checked has an adequate knowledge of, and ability to perform, such procedure:						
(a) Fire in flight;				**B**		
(b) Smoke control;				**B**		
(c) Rapid decompression;				**B**		
(d) Emergency descent; and				**B**		
(e) Any other emergency procedures outlined in the appropriate approved aircraft flight manual				**B**		

Appendix G
Doppler Radar and Inertial Navigation System (INS): Request for Evaluation; Equipment and Equipment installation; Training Program; Equipment Accuracy and Reliability; Evaluation Program

121.ag.1 Application for authority

(a) An applicant for authority to use a Doppler radar or inertial navigation system must submit a request for evaluation of the system to the ECAA, 30 days prior to the start of evaluation flights.

(b) The application must contain:

(1) A summary of experience with the system showing to the satisfaction of the ECAA a history of the accuracy and reliability of the system proposed to be used;

(2) A training program curriculum for initial approval under Part 121.405;

(3) A maintenance program for compliance with subpart L of this Part;

(4) A description of equipment installation;

(5) Proposed revisions to the operations manual outlining all normal and emergency procedures relative to use of the proposed system, including detailed methods for continuing the navigational function with partial or complete equipment failure, and methods for determining the most accurate system when an unusually large divergence between systems occurs. For the purpose of this appendix, a large divergence is a divergence that results in a track that falls beyond clearance limits;

(6) Any proposed revisions to the minimum equipment list with adequate justification therefor; and

(7) A list of operations to be conducted using the system, containing an analysis of each with respect to length, magnetic compass reliability, availability of en route aids, and adequacy of gateway and terminal radio facilities to support the system. For the purpose of this appendix, a gateway is a specific navigational fix where use of long range navigation commences or terminates.

121.ag.3 Equipment and equipment installation: Inertial navigation systems (INS) or Doppler radar system.

(a) Inertial navigation and Doppler radar systems must be installed in accordance with applicable airworthiness requirements.

(b) Cockpit arrangement must be visible and usable by either pilot seated at his duty station.

(c) The equipment must provide, by visual, mechanical, or electrical output signals, indications of the invalidity of output data upon the occurrence of probable failures or malfunctions within the system.

(d) A probable failure or malfunction within the system must not result in loss of the aircraft required navigation capability.

(e) The alignment, updating, and navigation computer functions of the system must not be invalidated by normal aircraft power interruptions and transients.

(f) The system must not be the source or cause of objectionable radio frequency interference, and must not be adversely affected by radio frequency interference from other aircraft systems.

(g) The ECAA approved aircraft flight manual, or supplement thereto, must include pertinent material as required to define the normal and emergency operating procedures and applicable operating limitations associated with the INS and Doppler performance (such as maximum latitude at which ground alignment capability is provided, or deviations between systems).

121.ag.5 Equipment and equipment installation: Inertial navigation systems (INS)

(a) If an applicant elects to use an inertial navigation system it must be at least a dual system (including navigational computers and reference units). At least two systems must be operational at takeoff. The dual system may consist of either two INS units, or one INS unit and one Doppler radar unit.

(b) Each inertial navigation system must incorporate the following:

(1) Valid ground alignment capability at all latitudes appropriate for intended use of the installation;

(2) A display of alignment status or a ready to navigate lights showing completed alignment to the cockpit crew;
(3) The present position of the aircraft in suitable coordinates; and
(4) Information relative to destinations or waypoint positions:
(i) The information needed to gain and maintain a desired track and to determine deviations from the desired track; and
(ii) The information needed to determine distance and time to go to the next waypoint or destination.

(c) For INS installations that do not have memory or other in-flight alignment means, a separate electrical power source (independent of the main propulsion system) must be provided which can supply, for at least five minutes, enough power (as shown by analysis or as demonstrated in the aircraft) to maintain the INS in such condition that its full capability is restored upon the reactivation of the normal electrical supply.

(d) The equipment must provide such visual, mechanical or electrical output signals as may be required to permit the cockpit crew to detect probable failures or malfunctions in the system.

121.ag.7 Equipment and equipment installation: Doppler radar systems

(a) If an applicant elects to use a Doppler radar system it must be at least a dual system (including dual antennas or a combined antenna designed for multiple operation), except that:
(1) A single operating transmitter with a standby capable of operation may be used in lieu of two operating transmitters;
(2) Single heading source information to all installations may be utilized, provided a compass comparator system is installed and operational procedures call for frequent cross-checks of all compass heading indicators by crewmembers; and
(3) The dual system may consist of either two Doppler radar units or one Doppler radar unit and one INS unit.

(b) At least two systems must be operational at takeoff.

(c) As determined by the ECAA and specified in the certificate holder's operations specifications, other navigational aids may be required to update the Doppler radar for a particular operation. These may include Loran, Consol, DME, VOR, ADF, ground-based radar, and airborne weather radar. When these aids are required, the cockpit arrangement must be such that all controls are accessible to each pilot seated at his duty station.

121.ag.9 Training programs

The initial training program for Doppler radar and inertial navigation systems must include the following:

(a) Duties and responsibilities of cockpit crewmembers, dispatchers, and maintenance personnel;

(b) For pilots, instruction in the following:
(1) Theory and procedures, limitations, detection of malfunctions, preflight and in-flight testing, and cross-checking methods;
(2) The use of computers, an explanation of all systems, compass limitations at high latitudes, a review of navigation, flight planning and applicable meteorology;
(3) The methods for updating by means of reliable fixes; and
(4) The actual plotting of fixes.

(c) Abnormal and emergency procedures.

121.ag.11 Equipment accuracy and reliability

(a) Each inertial navigation system must meet the following accuracy requirements, as appropriate:
(1) For flights up to 10 hours duration, no greater than 2 nautical miles per hour of circular error on 95 percent of system flights completed is permitted; and
(2) For flights over 10 hours duration, a tolerance of ± 20 miles along-track and ± 25 miles along-track on 95 percent of system flights completed is permitted.

(b) Compass heading information to the Doppler radar must be maintained to an accuracy of ± 1° and total system deviations must not exceed 2°. When free gyro techniques are used procedures shall be utilized to insure that an equivalent level of heading accuracy and total system deviation is attained.

(c) Each Doppler radar system must meet accuracy requirements of ± 20 miles cross track and ±25 miles along-track for 95 percent of the system flights completed. Updating is permitted.
(d) A system that does not meet the requirements of this section will be considered a failed system.

121.ag.13 Evaluation program

(a) Approval by evaluation must be requested as a part of the application for operational approval of a Doppler radar or inertial navigation system.
(b) The applicant must provide sufficient flights, which show to the satisfaction of the ECAA, the applicant's ability to use cockpit navigation in his operation.
(c) The ECAA bases its evaluation on the following:
  (1) Adequacy of operational procedures;
  (2) Operational accuracy and reliability of equipment and feasibility of the system with regard to proposed operations;
  (3) Availability of terminal, gateway, area, and en route ground-based aids, if required, to support the self-contained system;
  (4) Acceptability of cockpit workload;
  (5) Adequacy of cockpit crew qualifications; and
  (6) Adequacy of maintenance training and availability of spare parts.

  After successful completion of evaluation demonstrations, ECAA approval is indicated by issuance of amended operations specifications and en route flight procedures defining the new operation. Approval is limited to those operations for which the adequacy of the equipment and the feasibility of cockpit navigation has been satisfactorily demonstrated.

APPENDIX H
Advanced Simulation

121.ah.1 General

(a) This appendix provides guidelines and a means for achieving cockpit crew training in advanced aircraft simulators. This appendix describes the simulator and visual system requirements, which must be achieved to obtain approval of certain types of training in the simulator. The requirements in this appendix are in addition to the simulator approval requirements in Part121.407. Each simulator, which is used under this appendix, must be approved as a Level B, C, or D simulator, as appropriate.

(b) To obtain ECAA approval of the simulator for a specific level, the following must be demonstrated to the satisfaction of the ECAA:
  (1) Documented proof of compliance with the appropriate simulator, visual system, and additional training requirements of this appendix for the level for which approval is requested;
  (2) An evaluation of the simulator to ensure that it's ground, flight, and landing performance matches the type of aircraft simulated;
  (3) An evaluation of the appropriate simulator and visual system requirements of the level for which approval is requested.

121.ah.3 Changes to simulator programming

While a need exists for some flexibility in making changes in the software program, strict scrutiny of these changes is essential to ensure that the simulator retains its ability to duplicate the aircraft's flight and ground characteristics. Therefore, the following procedure must be followed to allow these changes without affecting the approval of an Appendix H simulator:

(a) Twenty-one calendar days before making changes to the software program which might impact flight or ground dynamics of an Appendix H simulator, a complete list of these planned changes, including dynamics related to the motion and visual systems, must be provided in writing to the ECAA office responsible for conducting the recurrent evaluation of that simulator;

(b) If the ECAA does not object to the planned change(s) within 21 calendar days, the operator may make the change(s);

(c) Changes, which might affect the approved simulator Level B test guide, must be tested by the operator in the simulator to determine the impact of the change(s) before submission to the ECAA;

(d) Software changes actually installed must be summarized and provided to the ECAA. When the operator's test shows a difference in simulator performance due to a change, an amended copy of the test guide page which includes the new simulator test results will also be provided to update the ECAA's copy of the test guide;

(e) The ECAA may examine supporting data or flight check the simulator, or both, to ensure that the aerodynamic quality of the simulator has not been degraded by any change in software programming; and

(f) All requests for changes are evaluated based on the same criteria used in the initial approval of the simulator for Level B, C, or D.

121.ah.5 Simulator minimum equipment list (MEL)

Because of the strict tolerances and other approval requirements of appendix H simulators, the simulator can provide realistic training with certain nonessential items inoperative. Therefore, an operator may operate its simulator under a MEL, which has been approved by the ECAA for that simulator. The MEL includes simulator components and indicates the type of training or checking that is authorized if the component becomes inoperative. To accomplish this, the component is placed in one of the following categories along with any remarks applicable to the component's use in the training program:

(a) No training or checking;
(b) Training in specific maneuvers;
(c) Certification and checking; and
(d) Line oriented flight training (LOFT).

121.ah.7 Advanced simulation training program

For an operator to conduct Level B, C, or D training under this appendix all required simulator instruction and checks must be conducted under an advanced simulation-training program, which is approved by the ECAA for the operator. This program must also ensure that all instructors, check airmen and designated examiners used in Appendix H training and checking

are highly qualified to provide the training required in the training program. The advanced simulation training program shall include the following:

(a) The operator's initial, transition, upgrade, and recurrent simulator training programs and its procedures for re-establishing recency of experience in the simulator;
(b) How the training program will integrate Level B, C, and D simulators with other simulators and training devices to maximize the total training, checking, and certification functions;
(c) Documentation that each instructor and designated examiner has served for at least 1 year in that capacity in a certificate holder's approved program or has served for at least 1 year as a pilot in command or second in command in an aircraft of the group in which that pilot is instructing or checking;
(d) A procedure to ensure that each instructor and designated examiner actively participates in either an approved regularly scheduled line flying program as a cockpit crewmember or an approved line observation program in the same aircraft type for which that person is instructing or checking;
(e) A procedure to ensure that each instructor and designated examiner is given a minimum of 4 hours of training each year to become familiar with the operator's advanced simulation training program, or changes to it, and to emphasize their respective roles in the program. Training for simulator instructors and check airmen shall include training policies and procedures, instruction methods and techniques, operation of simulator controls (including environmental and trouble panels), limitations of the simulator, and minimum equipment required for each course of training; and
(f) A special Line Oriented Flight Training (LOFT) program to facilitate the transition from the simulator to line flying. This LOFT program consists of at least a 4-hour course of training for each cockpit crew. It also contains at least two representative flight segments of the operator's route. One of the flight segments contains strictly normal operating procedures from push back at one airport to arrival at another. Another flight segment contains training in appropriate abnormal and emergency flight operations.

Level B

121.ah.9 Training and checking permitted

(a) Regency of experiences (Part121.439).
(b) Night takeoffs and landings (Part 121, Appendix E).
(c) Landings in proficiency check without the landing on the line requirements (Part121.441).

121.ah.11 Simulator requirements

(a) Aerodynamic programming to include:
  (1) Ground effect: for example, roundout, flare, and touchdown. This requires data on lift, drag, and pitching moment in ground effect;
  (2) Ground reaction: Reaction of the aircraft upon contact with the runway during landing to include strut deflections, tire friction, and side forces; and
  (3) Ground handling characteristics steering inputs to include crosswind, braking, thrust reversing, deceleration, and turning radius.
(b) Minimum of 3-axis freedom of motion systems.
(c) Level B landing maneuver test guide to verify simulator data with actual aircraft flight tests data, and provides simulator performance tests for level B initial approval.
(d) Multichannel recorders capable of recording level B performance tests.

121.ah.13 Visual Requirements

(a) Visual system compatibility with aerodynamic programming.
(b) Visual system response time from pilot control input to visual system output shall not exceed 300 milliseconds more than the movement of the aircraft to a similar input. Visual system response time is defined as the completion of the visual display scan of the first video field containing different information resulting from an abrupt control input.
(c) A means of recording the visual response time for comparison with aircraft data.
(d) Visual cues to assess sink rate and depth perception during landings.
(e) Visual scene to instrument correlation to preclude perceptible lags.

Level C

121.ah.15 Training and checking permitted

(a) For all pilots, transition training between aircraft in the same group and for a pilot in command the certification check required by Part 61.
(b) Upgrade to pilot in command training and the certification check when the pilot:
  (1) Has previously qualified as second in command in the equipment to which the pilot is upgrading;
  (2) Has at least 500 hours of actual flight time while serving as second in command in an aircraft of the same group; and
  (3) Is currently serving as second in command with that operator in an aircraft in this same group.
(c) Initial pilot in command training and the certification check when the pilot:
  (1) Is currently serving as second in command in an aircraft of the same group;
  (2) Has a minimum of 2,500 flight hours as a second in command in an aircraft of the same group; and
  (3) Has served as second in command on at least two aircraft of the same group with that operator.
(d) For all second-in command pilot applicants who meet the aeronautical experience requirements of Part 61 in the aircraft, the initial and upgrade training and checking required by this Part and the certification check requirements of Part 61.
(e) Pilots qualifying under paragraph (b) of this paragraph may be upgraded to another aircraft in that group in which that pilot has not been previously qualified.

121.ah.17 Simulator requirements

(a) Representative crosswind and three-dimensional windshear dynamics based on aircraft related data.
(b) Representative stopping and directional control forces for at least the following runway conditions based on aircraft related data:
  (1) Dry;
  (2) Wet;
  (3) Icy;
  (4) Patchy wet;
  (5) Patchy icy; and
  (6) Wet on rubber residue in touchdown zone.
(c) Representative brake and tire failure dynamics (including antiskid) and decreased brake efficiency due to high brake temperatures based on aircraft related data.
(d) A motion system, which provides motion, cues equal to or better than those provided by a six-axis freedom of motion system.
(e) Operational principal navigation systems, including electronic flight instrument systems, INS, and OMEGA, if applicable.
(f) Means for quickly and effectively testing simulator programming and hardware.
(g) Expanded simulator computer capacity, accuracy, resolution, and dynamic response to meet level C demands. Resolution equivalent to that of at least a 32 bit word length computer is required for critical aerodynamic programs.
(h) Timely permanent update of simulator hardware and programming after aircraft modification.
(i) Sound of precipitation and significant aircraft noises perceptible to the pilot during normal operations and the sound of a crash when the simulator is landed in excess of the landing gear limitations.
(j) Aircraft control feels dynamics shall duplicate the aircraft simulated. This shall be determined by comparing a recording of the control feel dynamics of the simulator to aircraft measurements in the takeoff, cruise, and landing configuration.
(k) Relative responses of the motion system, visual system, and cockpit instruments shall be coupled closely to provide integrated sensory cues. These systems shall respond to abrupt pitch, roll, and yaw inputs at the pilot's position within 150 milliseconds of the time, but not before the time, when the aircraft would respond under the same conditions. Visual scene changes from steady state disturbance shall not occur before the resultant motion onset but within the system dynamic response tolerance of 150 milliseconds. The test to determine compliance with these requirements shall include simultaneously recording the analog output from the pilot's control column and rudders, the output from an accelerometer attached to the motion system platform located at an acceptable location near

the pilots' seats, the output signal to the visual system display (including visual system analog delays), and the output signal to the pilot's attitude indicator or an equivalent test approved by the ECAA. The test results in a comparison of a recording of the simulator's response to actual aircraft response data in the takeoff, cruise, and landing configuration.

121.ah.19 Visual Requirements

(a) Dusk and night visual scenes with at least three specific airport representations, including a capability of at least 10 levels of occulting, general terrain characteristics, and significant landmarks.
(b) Radio navigation aids properly oriented to the airport runway layout.
(c) Test procedures to quickly confirm visual system color, RVR, focus, intensity, level horizon, and attitude as compared to the simulator attitude indicator.
(d) For the approach and landing phase of flight, at and below an altitude of 2,000 feet height above the airport (HAA) and within a radius of 10 miles from the airport, weather representations including the following:
  (1) Variable cloud density;
  (2) Partial obscuration of ground scenes; that is, the effect of a scattered to broken cloud deck;
  (3) Gradual break out;
  (4) Patchy fog;
  (5) The effect of fog on airport lighting; and
  (6) Category II and III weather conditions.
(e) Continuous minimum visual field of view of 75° horizontal and 30° vertical per pilot seat. Visual gaps shall occur only as they would in the aircraft simulated or as required by visual system hardware. Both pilot seat visual systems shall be able to be operated simultaneously.
(f) Capability to present ground and air hazards such as another aircraft crossing the active runway or converging airborne traffic.

Level D

Except for the requirements listed in the next sentence, all pilot flight training and checking required by this Part and the certification check requirements of Part 61. The line check required by Part 121.440, the static aircraft requirements of appendix E to this Part, and the operating experience requirements of Part 121.434 must still be performed in the aircraft.

121.ah.21 Simulator requirements

(a) Characteristic buffet motions that result from operation of the aircraft (for example, high speed buffet, extended landing gear, flaps, nose wheel scuffing, stall) which can be sensed at the flight deck. The simulator must be programmed and instrumented in such a manner that the characteristic buffet modes can be measured and compared to aircraft data. Aircraft data is also required to define flight deck motions when the aircraft is subjected to atmospheric disturbances such as rough air and cobblestone turbulence. General-purpose disturbance models that approximate demonstrable flight test data are acceptable.
(b) Aerodynamic modeling for aircraft for which an original type certificate is issued after June 1, 1980, including low altitude, level flight ground effect, mach effect at high altitude, effects of airframe icing, normal and reverse dynamic thrust effect on control surfaces, aeroelastic representations, and representations of nonlinearities due to side slip based on aircraft flight test data provided by the manufacturer.
(c) Realistic amplitude and frequency of cockpit noises and sounds, including precipitation static and engine and airframe sounds. The sounds shall be coordinated with the weather representations required in visual requirements of this section (level D).
(d) Self-testing for simulator hardware and programming to determine compliance with level B, C, and D simulator requirements.
(e) Diagnostic analysis printout of simulator malfunctions sufficient to determine MEL compliance. These printouts shall be retained by the operator between recurring ECAA simulator evaluations as part of the daily discrepancy log required under Part 121.

121.ah.23 Visual Requirements

(a) Daylight, dusk, and night visual scenes with sufficient scene content to recognize a specific airport, the terrain, and major landmarks around that airport and to successfully accomplish

a visual landing. The daylight visual scene must be part of a total daylight cockpit environment, which at least represents the amount of light in the cockpit on an overcast day. For the purpose of this rule, daylight visual system is defined as a visual system capable of producing, as a minimum, full color presentations, scene content comparable in detail to that produced by 4,000 edges or 1,000 surfaces for daylight and 4,000 light points for night and dusk scenes, 6 foot lamberts of light at the pilot's eye (highlight brightness), 3 arc minutes resolution for the field of view at the pilot's eye, and a display which is free of apparent quantization and other distracting visual effects while the simulator is in motion. The simulation of cockpit ambient lighting shall be dynamically consistent with the visual scene displayed. For daylight scenes, such ambient lighting shall neither "washout" the displayed visual scene nor fall below 5 foot lamberts of light as reflected from an approach plate at knee height at the pilot's station and/or 2 foot lamberts of light as reflected from the pilot's face.

(b) Visual scenes portraying representative physical relationships which are known to cause landing illusions in some pilots, including short runway, landing over water, runway gradient, visual topographic features, and rising terrain.
(c) Special weather representations which include the sound, visual, and motion effects of entering light, medium, and heavy precipitation near a thunderstorm on takeoff, approach, and landings at and below an altitude of 2,000 feet HAA and within a radius of 10 miles from the airport.
(d) Level C visual requirements in daylight as well as dusk and night representations.
(e) Wet and, if appropriate for the operator, snow covered runway representations, including runway lighting effects.
(f) Realistic color and directionality of airport lighting.
(g) Weather radar presentations in aircraft where radar information is presented on the pilot's navigation instruments.

APPENDIX I
Drug Testing Program

121.ai.1 Drug testing programs

Each employer shall ensure that drug-testing programs conducted pursuant to ECARs comply with the requirements of this appendix.

121.ai.3 Definitions

For the purpose of this appendix, the following definitions apply:

(a) Accident means an occurrence associated with the operation of an aircraft which takes place between the time any person boards the aircraft with the intention of flight and all such persons have disembarked, and in which any person suffers death or serious injury, or in which the aircraft receives substantial damage;
(b) Annualized rate for the purposes of unannounced testing of employees based on random selection means the percentage of specimen collection and testing of employees performing a safety-sensitive function during a calendar year. The employer shall determine the annualized rate by referring to the total number of employees performing a safety-sensitive function for the employer at the beginning of the calendar year;
(c) Contractor company means a company that has employees who perform safety-sensitive functions by contract for an employer;
(d) Employee is a person who performs, either directly or by contract, a safety-sensitive function for an employer, as defined below;
(e) Employer is a certificate holder, an air traffic control facility, an approved maintenance organization or any approved aviation training center;
(f) Performing (a safety-sensitive function): an employee is considered to be performing a safety-sensitive function during any period in which he or she is actually performing, ready to perform, or immediately available to perform such function;
(g) Positive rate means the number of positive results for random drug tests conducted under this appendix plus the number of refusals to take random tests required by this appendix, divided by the total number of random drug tests conducted under this appendix plus the number of refusals to take random tests required by this appendix;
(h) Prohibited drug means marijuana, cocaine, opiates, phencyclidine (PCP), amphetamines, or any substance specified in the Egyptian laws, unless the drug is being used as authorized by a legal prescription;
(i) Refusal to submit means that an individual failed to provide a urine sample, without a genuine inability to provide a specimen (as determined by a medical evaluation), after he or she has received notice of the requirement to be tested in accordance with this appendix, or engaged in conduct that clearly obstructed the testing process;
(j) Verified negative drug test result means that the test result of a urine sample collected and tested under this appendix has been verified by an approved medical examiner as negative; and
(k) Verified positive drug test result means that the test result of a urine sample collected and tested under this appendix has been verified by an approved medical examiner as positive.

121.ai.5 Employees who must be tested

Each person who performs a safety-sensitive function directly or by contract for an employer must be tested pursuant to an ECAA approved anti-drug program conducted in accordance with this appendix:
(a) Cockpit crewmember duties;
(b) Cabin crew duties;
(c) Flight instruction duties;
(d) Aircraft dispatcher duties;
(e) Aircraft maintenance or preventive maintenance duties;
(f) Ground security coordinator duties;
(g) Aviation screening duties; and
(h) Air traffic control duties.
(i) Ground handling duties.

121.ai.7 Substances for which testing must be conducted

Each employer shall test each employee who performs a safety-sensitive function for evidence of marijuana, cocaine, opiates, phencyclidine (PCP), and amphetamines during each test required this appendix. As part of a reasonable cause drug testing program established, employers may test for additional drugs only with approval granted by the ECAA

121.ai.9 Types of drug testing required

Each employer shall conduct the following types of testing:
(a) Pre-employment testing:

(1) Prior to the first time an individual performs a safety-sensitive function for an employer, the employer shall require the individual to undergo testing for prohibited drug use;

(2) An employer is permitted to require pre-employment testing of an individual if the following criteria are met:

(i) The individual previously performed a covered function for the employer;

(ii) The employer removed the individual from the employer's random testing program conducted under this appendix for reasons other than a verified positive test result on an ECAA mandated drug test or a refusal to submit to such testing; and

(iii) The individual will be returning to the performance of a safety-sensitive function.

(3) No employer shall allow an individual, required to undergo pre-employment testing, to perform a safety-sensitive function unless the employer has received a verified negative drug test result for the individual; and

(4) The employer shall advise each individual applying to perform a safety-sensitive function at the time of application that the individual will be required to undergo pre-employment testing to determine the presence of marijuana, cocaine, opiates, phencyclidine (PCP), and amphetamines, or a metabolite of those drugs in the individual's system. The employer shall provide this same notification to each individual required by the employer to undergo pre-employment testing.

(b) Periodic testing: Each employee who performs a safety-sensitive function for an employer and who is required to undergo a medical assessment that is required by ECAR shall submit to a periodic drug test. The employee shall be tested for the presence of marijuana, cocaine, opiates, phencyclidine (PCP), and amphetamines, or a metabolite of those drugs during the first calendar year of implementation of the employer's anti-drug program. The tests shall be conducted in conjunction with the first medical evaluation of the employee or in accordance with an alternative method for collecting periodic test specimens detailed in an employer's approved anti-drug program. An employer may discontinue periodic testing of its employees after the first calendar year of implementation of the employer's anti-drug program when the employer has implemented an unannounced testing program based on random selection of employees;

(c) Random testing:

(1) Except as provided in paragraphs 2-4 of this section, the minimum annual percentage rate for random drug testing shall be 50 percent of covered employees;

(2) The ECAA's decision to increase or decrease the minimum annual percentage rate for random drug testing is based on the reported positive rate for the entire industry. All information used for this determination is drawn from the statistical reports required by this appendix. In order to ensure reliability of the data, the ECAA considers the quality and completeness of the reported data, may obtain additional information or reports from employers, and may make appropriate modifications in calculating the industry positive rate;

(3) When the minimum annual percentage rate for random drug testing is 50 percent, the ECAA may lower this rate to 25 percent of all covered employees if the ECAA determines that the data received under the reporting requirements of this appendix for two consecutive calendar years indicate that the reported positive rate is less than 1.0 percent;

(4) When the minimum annual percentage rate for random drug testing is 25 percent, and the data received under the reporting requirements of this appendix for any calendar year indicate that the reported positive rate is equal to or greater than 1.0 percent, the ECAA will increase the minimum annual percentage rate for random drug testing to 50 percent of all covered employees;

(5) The selection of employees for random drug testing shall be made by a scientifically valid method, such as a random-number table or a computer-based random number generator that is matched with employees' payroll identification numbers, or other comparable identifying numbers. Under the selection process used, each covered employee shall have an equal chance of being tested each time selections are made;

(6) The employer shall randomly select a sufficient number of covered employees for testing during each calendar year to equal an annual rate not less than the minimum annual percentage rate for random drug testing determined by the ECAA. If the employer conducts random drug testing through a consortium, the number of

employees to be tested may be calculated for each individual employer or may be based on the total number of covered employees covered by the consortium who are subject to random drug testing at the same minimum annual percentage rate under this testing rule; and

(7) Each employer shall ensure that random drug tests conducted under this appendix are unannounced and that the dates for administering random tests are spread reasonably throughout the calendar year. Moreover the employer shall provide access to the employer's records of random drug testing, as determined to be necessary by the approved medical examiner to ensure the employer's compliance with the rule.

(d) Post-accident testing: Each employer shall test each employee who performs a safety-sensitive function for the presence of marijuana, cocaine, opiates, phencyclidine (PCP), and amphetamines, or a metabolite of those drugs in the employee's system if that employee's performance either contributed to an accident or can not be completely discounted as a contributing factor to the accident. The employee shall be tested as soon as possible but not later than 32 hours after the accident. The decision not to administer a test under this section must be based on a determination, using the best information available at the time of the determination, that the employee's performance could not have contributed to the accident. The employee shall submit to post-accident testing under this section.

(e) Testing based on reasonable cause: Each employer shall test each employee who performs a safety-sensitive function and who is reasonably suspected of using a prohibited drug. Each employer shall test an employee's specimen for the presence of marijuana, cocaine, opiates, phencyclidine (PCP), and amphetamines, or a metabolite of those drugs. An employer may test an employee's specimen for the presence of other prohibited drugs or drug metabolites only in accordance with this appendix. At least two of the employee's supervisors, one of whom is trained in detection of the symptoms of possible drug use, shall substantiate and concur in the decision to test an employee who is reasonably suspected of drug use; provided, however, that in the case of an employer who employs 50 or fewer employees who perform safety-sensitive functions, one supervisor who is trained in detection of symptoms of possible drug use shall substantiate the decision to test an employee who is reasonably suspected of drug use. The decision to test must be based on a reasonable and articulable belief that the employee is using a prohibited drug on the basis of specific contemporaneous physical, behavioral, or performance indicators of probable drug use.

(f) Return to duty testing. Each employer shall ensure that before an individual is returned to duty to perform a safety-sensitive function after refusing to submit to a drug test required by this appendix or receiving a verified positive drug test result on a test conducted under this appendix the individual shall undergo a drug test. No employer shall allow an individual required to undergo return to duty testing to perform a safety-sensitive function unless the employer has received a verified negative drug test result for the individual.

(g) Follow-up testing:

(1) Each employer shall implement a reasonable program of unannounced testing of each individual who has been hired to perform or who has been returned to the performance of a safety-sensitive function after refusing to submit to a drug test required by this appendix or receiving a verified positive drug test result on a test conducted under this appendix;

(2) The number and frequency of such testing shall be determined by the employer's medical review officer. In the case of any individual evaluated under this appendix and determined to be in need of assistance in resolving problems associated with illegal use of drugs, follow-up testing shall consist of at least six tests in the first 12 months following the employee's return to duty;

(3) The employer may direct the employee to undergo testing for alcohol, in addition to drugs, if the medical review officer determines that alcohol testing is necessary for the particular employee; and

(4) Follow-up testing shall not exceed 60 months after the date the individual begins to perform or returns to the performance of a safety-sensitive function. The medical review officer may terminate the requirement for follow-up testing at any time after the first six tests have been conducted, if the medical review officer determines that such testing is no longer necessary.

121.ai.11 Administrative and other matters.

(a) Collection, testing, and rehabilitation records: Each employer shall maintain all records related to the collection process, including all logbooks and certification statements, for two years. Each employer shall maintain records of employee confirmed positive drug test results and employee rehabilitation for five years. The employer shall maintain records of negative test results for 12 months. The employer shall permit the ECAA representative to examine these records.

(b) Laboratory inspections: The employer shall contract only with a laboratory that permits pre-award inspections by the employer before the laboratory is awarded a testing contract and unannounced inspections, including examination of any and all records at any time by the employer or the ECAA representative.

(c) Release of drug testing information: An employer shall release information regarding an employee's drug testing results, evaluation, or rehabilitation to a third party in accordance with the specific, written consent of the employee authorizing release of the information to an identified person, as part of an accident investigation.

(d) Refusal to submit to testing:
   (1) Each employer shall notify the ECAA within 5 working days of any employee who holds a license issued under the ECARs who has refused to submit to a drug test required under this appendix; and
   (2) Employers are not required to notify the above office of refusals to submit to pre-employment or return to duty testing.

(e) Permanent disqualification from service:
   (1) An employee who has verified positive drug test results on two drug tests required by this appendix and conducted after September 1, 2001 is permanently precluded from performing for an employer the safety-sensitive duties the employee performed prior to the second drug test.
   (2) An employee who has engaged in prohibited drug use during the performance of a safety-sensitive function after September 1, 2001 is permanently precluded from performing that safety-sensitive function for an employer.

121.ai.13 Employee assistance program (EAP)

The employer shall provide an EAP for employees. The employer may establish the EAP as a part of its internal personnel services or the employer may contract with an entity that will provide EAP services to an employee. Each EAP must include education and training on drug use for employees and training for supervisors making determinations for testing of employees based on reasonable cause:

(a) EAP Education Program: Each EAP education program must include at least the following elements: display and distribution of informational material; display and distribution of a community service hot-line telephone number for employee assistance; and display and distribution of the employer's policy regarding drug use in the workplace. The employer's policy shall include information regarding the consequences under the rule of using drugs while performing safety-sensitive functions, receiving a verified positive drug test result, or refusing to submit to a drug test required under the rule.

(b) EAP training program: Each employer shall implement a reasonable program of initial training for employees. The employee training program must include at least the following elements: The effects and consequences of drug use on personal health, safety, and work environment; the manifestations and behavioral cues that may indicate drug use and abuse; and documentation of training given to employees and employer's supervisory personnel. The employer's supervisory personnel who will determine when an employee is subject to testing based on reasonable cause shall receive specific training on specific, contemporaneous physical, behavioral, and performance indicators of probable drug use in addition to the training specified above. The employer shall ensure that supervisors who will make reasonable cause determinations receive at least 60 minutes of initial training. The employer shall implement a reasonable recurrent training program for supervisory personnel making reasonable cause determinations during subsequent years. The employer shall identify the employee and supervisor EAP training in the employer's drug testing plan submitted to the ECAA for approval.

121.ai.15 Employer's anti-drug program plan

(a) Schedule for submission of plans and implementation:

(1) Each employer shall submit an anti-drug program plan to the ECAA for approval and must obtain such approval prior to beginning operations under the certificate. The program shall be implemented not later than the date of inception of operations. Contractor employees to a new certificate holder must be subject to an ECAA-approved anti-drug program within 60 days of the implementation of the employer's program;

(2) Any person who intends to begin sight-seeing operations as an operator shall, not later than 60 days prior to the proposed initiation of such operations, submit an anti-drug program plan to the ECAA for approval. No operator may begin conducting sightseeing flights prior to receipt of approval; the program shall be implemented concurrently with the inception of operations. Contractor employees to a new operator must be subject to an ECAA-approved program within 60 days of the implementation of the employer's program;

(3) Any person who intends to begin air traffic control operations after November 1, 2001 shall, not later than 60 days prior to the proposed initiation of such operations, submit an anti-drug program plan to the ECAA for approval. No air traffic control facility may begin conducting air traffic control operations prior to receipt of approval; the program shall be implemented concurrently with the inception of operations. Contractor employees to a new air traffic control facility must be subject to an ECAA-approved program within 60 days of the implementation of the facility's program;

(4) In accordance with this appendix, an entity or individual that holds a repair station certificate issued by the ECAA pursuant to Part 145 and employs individuals who perform a safety-sensitive function pursuant to a primary or direct contract with an employer or an operator may submit an anti-drug program plan (specifying the procedures for complying with this appendix) to the ECAA for approval. Each certificated repair station shall implement its approved anti-drug program in accordance with the terms of this appendix;

(5) Any entity or individual whose employees perform safety-sensitive functions pursuant to a contract with an employer (as defined in this appendix), and any consortium may submit an anti-drug program plan to the ECAA for approval on a form and in a manner prescribed by the ECAA:

(i) The plan shall specify the procedures that will be used to comply with the requirements of this appendix;

(ii) Each consortium program must provide for reporting changes in consortium membership to the ECAA within 10 working days of such changes; and

(iii) Each contractor or consortium shall implement its anti-drug program in accordance with the terms of its approved plan.

(6) Each air traffic control facility operating under contract to the ECAA shall submit an anti-drug program plan to the ECAA (specifying the procedures for all testing required by this appendix) not later than January 1, 2002. Each facility shall implement its anti-drug program not later than 30 days after approval of the program by the ECAA Employees performing air traffic control duties by contract for the air traffic control facility (i.e., not directly employed by the facility) must be subject to an ECAA-approved anti-drug program within 30 days of implementation of the air traffic control facility's program; and

(7) Each employer, or contractor company that has submitted an anti-drug plan directly to the ECAA, shall ensure that it is continuously covered by an ECAA-approved anti-drug program, and shall obtain appropriate approval from the ECAA prior to changing programs (e.g., joining another carrier's program, joining a consortium, or transferring to another consortium).

(b) An employer's anti-drug plan must specify the methods by which the employer will comply with the testing requirements of this appendix. The plan must provide the name and address of the laboratory which has been selected by the employer for analysis of the specimens collected during the employer's anti-drug testing program.

(c) An employer's anti-drug plan must specify the procedures and personnel the employer will use to ensure that a determination is made as to the veracity of test results and possible legitimate explanations for an employee receiving a verified positive drug test result.

(d) The employer shall consider its anti-drug program to be approved by the ECAA, unless notified to the contrary by the ECAA, within 60 days after submission of the plan to the ECAA.

121.ai.17 Reporting of anti-drug program results

(a) Annual reports of anti-drug program results shall be submitted to the ECAA in the form and manner prescribed by the ECAA by March 15 of the succeeding calendar year for the prior calendar year (January 1 through December 31) in accordance with the provisions below:
  (1) Each certificate holder shall submit an annual report each year;
  (2) Each entity conducting an anti-drug program under an ECAA-approved anti-drug plan that has 50 or more employees performing a safety-sensitive function on January 1 of any calendar year shall submit an annual report to the ECAA for that calendar year; and
  (3) The ECAA reserves the right to require that aviation employers not otherwise required to submit annual reports prepare and submit such reports to the ECAA. Employers that will be required to submit annual reports under this provision will be notified in writing by the ECAA.

(b) Each report shall be submitted in the form and manner prescribed by the ECAA.

(c) Each report shall be signed by the employer's anti-drug program manager or other designated representative.

(d) Each report with verified positive drug test results shall include all of the following informational elements:
  (1) Number of covered employees by employee category;
  (2) Number of covered employees affected by the anti-drug rule of another operating administration identified and reported by number and employee category;
  (3) Number of specimens collected by type of test and employee category;
  (4) Number of positive drug test results verified by an approved medical examiner by type of test, type of drug, and employee category;
  (5) Number of negative drug test results reported by an approved medical examiner by type of test and employee category;
  (6) Number of persons denied a safety-sensitive position based on a verified positive pre-employment drug test result reported by an approved medical examiner;
  (7) Action taken following a verified positive drug test result(s), by type of action;
  (8) Number of employees returned to duty during the reporting period after having received a verified positive drug test result on or refused to submit to a drug test required under the ECAA rule;
  (9) Number of employees by employee category with tests verified positive for multiple drugs by an approved medical examiner;
  (10) Number of employees who refused to submit to a drug test and the action taken in response to the refusal(s);
  (11) Number of covered employees who have received required initial training;
  (12) Number of supervisory personnel who have received required initial training; and
  (13) Number of supervisors who have received required recurrent training.

(e) Each report with only negative drug test results shall include all of the following informational elements. (This report may only be submitted by employers with no verified positive drug test results during the reporting year):
  (1) Number of covered employees by employee category;
  (2) Number of covered employees affected by the anti-drug rule of another operating administration identified and reported by number and employee category;
  (3) Number of specimens collected by type of test and employee category;
  (4) Number of negative tests reported by an approved medical examiner by type of test and employee category;
  (5) Number of employees who refused to submit to a drug test and the action taken in response to the refusal(s);
  (6) Number of employees returned to duty during the reporting period after having received a verified positive drug test result on or refused to submit to a drug test required under the ECAA rule;
  (7) Number of covered employees who have received required initial training;
  (8) Number of supervisory personnel who have received required initial training; and

(9) Number of supervisors who have received required recurrent training.

(f) An ECAA-approved consortium may prepare reports on behalf of individual aviation employers for purposes of compliance with this reporting requirement. However, the aviation employer shall sign and submit such a report and shall remain responsible for ensuring the accuracy and timeliness of each report prepared on its behalf by a consortium.

121.ai.19 Employees located outside the territory of the Arab Republic of Egypt

(a) No individual shall undergo a drug test required under the provisions of this appendix while located outside the territory of the Arab Republic of Egypt:

(1) Each employee who is assigned to perform safety-sensitive functions solely outside the territory of the Arab Republic of Egypt shall be removed from the random testing pool upon the inception of such assignment; and

(2) Each covered employee who is removed from the random testing pool under this paragraph A shall be returned to the random testing pool when the employee resumes the performance of safety-sensitive functions wholly or partially within the territory of the Arab Republic of Egypt.

(b) The provisions of this appendix shall not apply to any person who performs a function by contract for an employer outside the territory of the Arab Republic of Egypt.

APPENDIX J
Alcohol Misuse Prevention Program

121.aj.1 Purpose

The purpose of this appendix is to establish programs designed to help prevent accidents and injuries resulting from the misuse of alcohol by employees who perform safety-sensitive functions in aviation.

121.aj.3 Definitions

As used in this appendix:

(a) Accident means an occurrence associated with the operation of an aircraft which takes place between the time any person boards the aircraft with the intention of flight and the time all such persons have disembarked, and in which any person suffers death or serious injury or in which the aircraft receives substantial damage;

(b) Alcohol means the intoxicating agent in beverage alcohol, ethyl alcohol, or other low molecular weight alcohols, including methyl or isopropyl alcohol;
(c) Alcohol concentration (or content) means the alcohol in a volume of breath expressed in terms of grams of alcohol per 210 liters of breath as indicated by an evidential breath test under this appendix;
(d) Alcohol use means the consumption of any beverage, mixture, or preparation, including any medication, containing alcohol;
(e) Confirmation test means a second test, following a screening test with a result 0.02 or greater, that provides quantitative data of alcohol concentration;
(f) Consortium means an entity, including a group or association of employers or contractors, that provides alcohol testing as required by this appendix and that acts on behalf of such employers or contractors, provided that it has submitted an alcohol misuse prevention program certification statement to the ECAA in accordance with this appendix;
(g) Contractor company means a company that has employees who perform safety-sensitive functions by contract for an employer;
(h) Covered employee means a person who performs, either directly or by contract, a safety-sensitive function for an employer (as defined below). For purposes of pre-employment testing only, the term "covered employee" includes a person applying to perform a safety-sensitive function;
(i) Employer means a Part 121 certificate holder; a Part 145 certificate holder; an air traffic control facility and any training agency;
(j) Performing (a safety-sensitive function): an employee is considered to be performing a safety-sensitive function during any period in which he or she is actually performing, ready to perform, or immediately available to perform such functions;
(k) Refuse to submit (to an alcohol test) means that a covered employee fails to provide adequate breath for testing without a valid medical explanation after he or she has received notice of the requirement to be tested in accordance with this appendix, or engages in conduct that clearly obstructs the testing process;
(l) Screening test means an analytical procedure to determine whether a covered employee may have a prohibited concentration of alcohol in his or her system; and
(m) Violation rate means the number of covered employees found during random tests given under this appendix to have an alcohol concentration of 0.04 or greater plus the number of employees who refused a random test required by this appendix, divided by the total reported number of employees in the industry given random alcohol tests under this appendix plus the total reported number of employees in the industry who refuse a random test required by this appendix.

121.aj.5 Requirement for notice

(a) Before performing an alcohol test under this appendix, each employer shall notify a covered employee that the alcohol test is required by this appendix.
(b) Each employee who performs a function listed in this section directly or by contract for an employer as defined in this appendix must be subject to alcohol testing under an ECAA-approved alcohol misuse prevention program implemented in accordance with this appendix. The covered safety-sensitive functions are:
  (1) Cockpit crewmember duties;
  (2) Cabin crew duties;
  (3) Flight instruction duties;
  (4) Aircraft dispatcher duties;
  (5) Aircraft maintenance or preventive maintenance duties;
  (6) Ground security coordinator duties;
  (7) Aviation screening duties; and
  (8) Air traffic control duties.
  (9) Ground Handling duties.

121.aj.9 Tests required

(a) Pre-employment:
  (1) Prior to the first time a covered employee performs safety-sensitive functions for an employer, the employee shall undergo testing for alcohol. No employer shall allow a covered employee to perform safety-sensitive functions unless the employee has been administered an alcohol test with a result indicating an alcohol concentration less than

0.04. If a pre-employment test result under this paragraph indicates an alcohol concentration of 0.02 or greater but less than 0.04, the provisions of paragraph (f) of section V of this appendix apply;

(2) An employer is not required to administer an alcohol test as required by this paragraph if:
   (i) The employee has undergone an alcohol test required by this appendix within the previous 6 months, with a result indicating an alcohol concentration less than 0.04; and
   (ii) The employer ensures that no prior employer of the covered employee of whom the employer has knowledge has records of a violation of this appendix within the previous 6 months.

(b) Post-accident:

(1) As soon as practicable following an accident, each employer shall test each surviving covered employee for alcohol if that employee's performance of a safety-sensitive function either contributed to the accident or cannot be completely discounted as a contributing factor to the accident. The decision not to administer a test under this section shall be based on the employer's determination, using the best available information at the time of the determination, that the covered employee's performance could not have contributed to the accident;

(2) If a test required by this section is not administered within 2 hours following the accident, the employer shall prepare and maintain on file a record stating the reasons the test was not promptly administered. If a test required by this section is not administered within 8 hours following the accident, the employer shall cease attempts to administer an alcohol test and shall prepare and maintain the same record. Records shall be submitted to the ECAA upon request of the ECAA or his or her designee;

(3) Employers shall submit to the ECAA each record of a test required by this section that is not completed within 8 hours. The employer's records of tests that are not completed within 8 hours shall be submitted to the ECAA by March 15 for the preceding year (from January till December). Each record shall include the following information:
   (i) Type of test (reasonable suspicion/post-accident);
   (ii) Triggering event (including date, time, and location);
   (iii) Employee category (do not include employee name or other identifying information);
   (iv) Reason(s) test could not be completed within 8 hours; and
   (v) If blood alcohol testing could have been completed within eight hours, the name, address, and telephone number of the testing site where blood testing could have occurred.

(4) A covered employee who is subject to post-accident testing shall remain readily available for such testing or may be deemed by the employer to have refused to submit to testing. Nothing in this section shall be construed to require the delay of necessary medical attention for injured people following an accident or to prohibit a covered employee from leaving the scene of an accident for the period necessary to obtain assistance in responding to the accident or to obtain necessary emergency medical care.

(c) Random testing:

(1) Except as provided in paragraphs 2-4 of this section, the minimum annual percentage rate for random alcohol testing will be 25 percent of the covered employees;

(2) The ECAA's decision to increase or decrease the minimum annual percentage rate for random alcohol testing is based on the violation rate for the entire industry. In order to ensure reliability of the data, the ECAA considers the quality and completeness of the reported data, may obtain additional information or reports from employers, and may make appropriate modifications in calculating the industry violation rate;

(3) When the minimum annual percentage rate for random alcohol testing is 25 percent or more, the ECAA may lower this rate to 10 percent of all covered employees if the ECAA determines that the data received under the reporting requirements of this appendix for two consecutive calendar years indicate that the violation rate is less than 0.5 percent;

(4) When the minimum annual percentage rate for random alcohol testing is 50 percent, the ECAA may lower this rate to 25 percent of all covered employees if the ECAA determines that the data received under the reporting requirements of this appendix

for two consecutive calendar years indicate that the violation rate is less than 1.0 percent but equal to or greater than 0.5 percent;

(5) When the minimum annual percentage rate for random alcohol testing is 10 percent, and the data received under the reporting requirements of this appendix for that calendar year indicate that the violation rate is equal to or greater than 0.5 percent but less than 1.0 percent, the ECAA will increase the minimum annual percentage rate for random alcohol testing to 25 percent of all covered employees;

(6) When the minimum annual percentage rate for random alcohol testing is 25 percent or less, and the data received under the reporting requirements of this appendix for that calendar year indicate that the violation rate is equal to or greater than 1.0 percent, the ECAA will increase the minimum annual percentage rate for random alcohol testing to 50 percent of all covered employees;

(7) The selection of employees for random alcohol testing shall be made by a scientifically valid method, such as a random-number table or a computer-based random number generator that is matched with employees' I.D. number, payroll identification numbers, or other comparable identifying numbers. Under the selection process used, each covered employee shall have an equal chance of being tested each time selections are made;

(8) The employer shall randomly select a sufficient number of covered employees for testing during each calendar year to equal an annual rate not less than the minimum annual percentage rate for random alcohol testing determined by the ECAA. If the employer conducts random testing through a consortium, the number of employees to be tested may be calculated for each individual employer or may be based on the total number of covered employees who are subject to random alcohol testing at the same minimum annual percentage rate under this appendix;

(9) Each employer shall ensure that random alcohol tests conducted under this appendix are unannounced and that the dates for administering random tests are spread reasonably throughout the calendar year;

(10) Each employer shall require that each covered employee who is notified of selection for random testing proceeds to the testing site immediately; provided, however, that if the employee is performing a safety-sensitive function at the time of the notification, the employer shall instead ensure that the employee ceases to perform the safety-sensitive function and proceeds to the testing site as soon as possible;

(11) A covered employee shall only be randomly tested while the employee is performing safety-sensitive functions; just before the employee is to perform safety-sensitive functions; or just after the employee has ceased performing such functions;

(12) If a given covered employee is subject to random alcohol testing under the alcohol testing rules of more than one agency, the employee shall be subject to random alcohol testing at the percentage rate established for the calendar year by the agency regulating more than 50 percent of the employee's functions; and

(13) If an employer is required to conduct random alcohol testing under the alcohol testing rules of more than one agency, the employer may:

(i) Establish separate pools for random selection, with each pool containing the covered employees who are subject to testing at the same required rate; or

(ii) Randomly select such employees for testing at the highest percentage rate established for the calendar year by any agency to which the employer is subject.

(d) Reasonable suspicion testing:

(1) An employer shall require a covered employee to submit to an alcohol test when the employer has reasonable suspicion to believe that the employee has violated the alcohol misuse prohibitions in the ECARs;

(2) The employer's determination that reasonable suspicion exists to require the covered employee to undergo an alcohol test shall be based on specific, contemporaneous, articulable observations concerning the appearance, behavior, speech or body odors of the employee. The required observations shall be made by a supervisor who is trained in detecting the symptoms of alcohol misuse. The supervisor who makes the determination that reasonable suspicion exists shall not conduct the breath alcohol test on that employee;

(3) Alcohol testing is authorized just preceding, or just after the period of the work day that the covered employee is required to be in compliance with this rule. An employee may be directed by the employer to undergo reasonable suspicion testing for alcohol

only while the employee is performing safety-sensitive functions; just before the employee is to perform safety-sensitive functions; or just after the employee has ceased performing such functions;

(4) If a test required by this section is not administered within 2 hours following the determination made under paragraph (3) of this section, the employer shall prepare and maintain on file a record stating the reasons the test was not promptly administered. If a test required by this section is not administered within 8 hours following the determination made under paragraph (3) of this section, the employer shall cease attempts to administer an alcohol test and shall state in the record the reasons for not administering the test;

(5) Employers shall submit to the ECAA each record of a test required by this section that is not completed within 8 hours. The employer's records of tests that are not completed within 8 hours shall be submitted to the ECAA by March for the preceding calendar year. Each record shall include the following information:
   (i) Type of test (reasonable suspicion/post-accident);
   (ii) Triggering event (including date, time, and location);
   (iii) Employee category (do not include employee name or other identifying information);
   (iv) Reason(s) test could not be completed within 8 hours; and
   (v) If blood alcohol testing could have been completed within eight hours, the name, address, and telephone number of the testing site where blood testing could have occurred.

(6) Notwithstanding the absence of a reasonable suspicion alcohol test under this section, no covered employee shall report for duty or remain on duty requiring the performance of safety-sensitive functions while the employee is under the influence of or impaired by alcohol, as shown by the behavioral, speech, or performance indicators of alcohol misuse, nor shall an employer permit the covered employee to perform or continue to perform safety-sensitive functions until:
   (i) An alcohol test is administered and the employee's alcohol concentration measures less than 0.02; or
   (ii) The start of the employee's next regularly scheduled duty period, but not less than 8 hours following the determination made under paragraph 2 of this section that there is reasonable suspicion that the employee has violated the alcohol misuse provisions in the ECARs.

(e) Return to duty testing each employer shall ensure that before a covered employee returns to duty requiring the performance of a safety-sensitive function after engaging in conduct prohibited in the ECARs, the employee shall undergo a return to duty alcohol test with a result indicating an alcohol concentration of less than 0.02.

(f) Follow-up testing following a determination under this appendix that a covered employee is in need of assistance in resolving problems associated with alcohol misuse, each employer shall ensure that the employee is subject to unannounced follow-up alcohol testing as directed by a substance abuse professional in accordance with the provisions of this appendix. A covered employee shall be tested under this paragraph only while the employee is performing safety-sensitive functions; just before the employee is to perform safety-sensitive functions; or just after the employee has ceased performing such functions.

(g) Re-testing of covered employees with an alcohol concentration of 0.02 or greater but less than 0.04 each employer shall retest a covered employee to ensure compliance with the provisions of this appendix, if the employer chooses to permit the employee to perform a safety-sensitive function within 8 hours following the administration of an alcohol test indicating an alcohol concentration of 0.02 or greater but less than 0.04.

121.aj.11 Handling of test results, record retention, and confidentiality

(a) Retention of records:

(1) General Requirement. Each employer shall maintain records of its alcohol misuse prevention program as provided in this section. The records shall be maintained in a secure location with controlled access;

(2) Period of Retention. Each employer shall maintain the records in accordance with the following schedule:

(i) Five years: Records of employee alcohol test results with results indicating an alcohol concentration of 0.02 or greater, documentation of refusals to take required alcohol tests, calibration documentation, employee evaluations and referrals, and copies of any annual reports submitted to the ECAA under this appendix shall be maintained for a minimum of 5 years;

(ii) Two years: Records related to the collection process (except calibration of evidential breath testing devices) and training shall be maintained for a minimum of 2 years; and

(iii) One year: Records of all test results below 0.02 shall be maintained for a minimum of 1 year.

(b) Types of records:

The following specific records shall be maintained:

(1) Records related to the collection process:

(i) Collection logbooks, if used;

(ii) Documents relating to the random selection process;

(iii) Calibration documentation for evidential breath testing devices;

(iv) Documentation of breath alcohol technician training;

(v) Documents generated in connection with decisions to administer reasonable suspicion alcohol tests;

(vi) Documents generated in connection with decisions on post-accident tests; and

(vii) Documents verifying existence of a medical explanation of the inability of a covered employee to provide adequate breath for testing.

(2) Records related to test results:

(i) The employer's copy of the alcohol test form, including the results of the test;

(ii) Documents related to the refusal of any covered employee to submit to an alcohol test required by this appendix; and

(iii) Documents presented by a covered employee to dispute the result of an alcohol test administered under this appendix.

(3) Records related to other violations of ECARs;

(4) Records related to evaluations:

(i) Records pertaining to a determination by a substance abuse professional concerning a covered employee's need for assistance;

(ii) Records concerning a covered employee's compliance with the recommendations of the substance abuse professional; and

(iii) Records of notifications to the approved medical examiner of violations of the alcohol misuse prohibitions.

(c) Records related to education and training:

(1) Materials on alcohol misuse awareness, including a copy of the employer's policy on alcohol misuse;

(2) Documentation of compliance with the requirements of this appendix;

(3) Documentation of training provided to supervisors for the purpose of qualifying the supervisors to make a determination concerning the need for alcohol testing based on reasonable suspicion; and

(4) Certification that any training conducted under this appendix complies with the requirements for such training.

(d) Reporting of results in a management information system:

(1) Annual reports summarizing the results of alcohol misuse prevention programs shall be submitted to the ECAA in the form and manner prescribed by the ECAA by March of each year covering the previous calendar year (January 1 through December 31) in accordance with the provisions below:

(i) Each certificate holder shall submit an annual report each year;

(ii) Each entity conducting an alcohol misuse prevention program under the provisions of this appendix, that has 50 or more covered employees on January 1 of any calendar year shall submit an annual report to the ECAA for that calendar year; and

(iii) The ECAA reserves the right to require employers not otherwise required to submit annual reports to prepare and submit such reports to the ECAA. Employers that will be required to submit annual reports under this provision will be notified in writing by the ECAA.

(2) Each report shall be submitted in the form and manner prescribed by the ECAA;

(3) Each report shall be signed by the employer's alcohol misuse prevention program manager or other designated representative;

(4) Each report that contains information on an alcohol screening test result of 0.02 or greater or a violation of the alcohol misuse provisions of the ECARs shall include the following informational elements:

(i) Number of covered employees by employee category;

(ii) Number of covered employees in each category subject to alcohol testing under the alcohol misuse rule;

(iii) Number of screening tests by type of test and employee category;

(iv) Number of confirmation tests, by type of test and employee category;

(v) Number of confirmation alcohol tests indicating an alcohol concentration of 0.02 or greater but less than 0.04 by type of test and employee category;

(vi) Number of confirmation alcohol tests indicating an alcohol concentration of 0.04 or greater, by type of test and employee category;

(vii) Number of persons denied a position as a covered employee following a pre-employment alcohol test indicating an alcohol concentration of 0.04 or greater;

(viii) Number of covered employees with a confirmation alcohol test indicating an alcohol concentration of 0.04 or greater who were returned to duty in covered positions (having complied with the recommendations of a substance abuse professional as described in this appendix);

(ix) Number of covered employees who were administered alcohol and drug tests at the same time, with both a positive drug test result and an alcohol test result indicating an alcohol concentration of 0.04 or greater;

(x) Number of covered employees who were found to have violated other alcohol misuse provisions of the ECARs, and the action taken in response to the violation;

(xi) Number of covered employees who refused to submit to an alcohol test required under this appendix, the number of such refusals that were for random tests, and the action taken in response to each refusal; and

(xii) Number of supervisors who have received required training during the reporting period in determining the existence of reasonable suspicion of alcohol misuse.

(5) Each report with no screening test results of 0.02 or greater or violations of the alcohol misuse provisions of the ECARs shall include the following informational elements. (This report may only be submitted if the program results meet these criteria):

(i) Number of covered employees by employee category;

(ii) Number of covered employees in each category subject to alcohol testing under the alcohol misuse rule;

(iii) Number of screening tests by type of test and employee category;

(iv) Number of covered employees who engaged in alcohol misuse who were returned to duty in covered positions (having complied with the recommendations of a substance abuse professional as described this appendix);

(v) Number of covered employees who refused to submit to an alcohol test required under this appendix, and the action taken in response to each refusal; and

(vi) Number of supervisors who have received required training during the reporting period in determining the existence of reasonable suspicion of alcohol misuse.

(6) An ECAA-approved consortium may prepare reports on behalf of individual aviation employers for purposes of compliance with this reporting requirement. However, the aviation employer shall sign and submit such a report and shall remain responsible for ensuring the accuracy and timeliness of each report prepared on its behalf by a consortium.

(e) Access to records and facilities:

(1) Except as required by law or expressly authorized or required in this appendix, no employer shall release covered employee information that is contained in records required to be maintained under this appendix;

(2) A covered employee is entitled, upon written request, to obtain copies of any records pertaining to the employee's use of alcohol, including any records pertaining to his or her alcohol tests. The employer shall promptly provide the records requested by the employee. Access to an employee's records shall not be contingent upon payment for records other than those specifically requested;

(3) Each employer shall make available copies of all results of alcohol testing conducted under this appendix and any other information pertaining to the employer's alcohol misuse prevention program, when requested by the ECAA;
(4) When requested by the ECAA as part of an accident investigation, each employer shall disclose information related to the employer's administration of a post-accident alcohol test administered following the accident under investigation;
(5) Records shall be made available to a subsequent employer upon receipt of written request from the covered employee. Disclosure by the subsequent employer is permitted only as expressly authorized by the terms of the employee's request;
(6) An employer may disclose information required to be maintained under this appendix pertaining to a covered employee to the employee or to the decision maker in a lawsuit, grievance, or other proceeding initiated by or on behalf of the individual and arising from the results of an alcohol test administered under this appendix or from the employer's determination that the employee engaged in conduct prohibited under the ECARs (including, but not limited to, a worker's compensation, unemployment compensation, or other proceeding relating to a benefit sought by the employee);
(7) An employer shall release information regarding a covered employee's records as directed by the specific, written consent of the employee authorizing release of the information to an identified person. Release of such information by the person receiving the information is permitted only in accordance with the terms of the employee's consent; and
(8) Each employer shall permit access to all facilities utilized in complying with the requirements of this appendix to the ECAA.

121.aj.13 Consequences for employees engaging in alcohol-related conduct

(a) Removal from safety-sensitive function:
(1) Except as provided in this appendix, no covered employee shall perform safety-sensitive functions if the employee has engaged in conduct prohibited by the ECARs or an alcohol misuse rule; and
(2) No employer shall permit any covered employee to perform safety-sensitive functions if the employer has determined that the employee has violated this paragraph.
(b) Permanent disqualification from service an employee who violates the ECARs' alcohol misuse requirements, or who engages in alcohol use that violates another alcohol misuse provisions and had previously engaged in alcohol use that violated the provisions of the ECARs after becoming subject to such prohibitions is permanently precluded from performing for an employer the safety-sensitive duties the employee performed before such violation.
(c) Notice to the approved medical examiner:
(1) An employer who determines that a covered employee who holds an airman medical certificate has engaged in alcohol use that violated the alcohol misuse provisions of the ECARs shall notify the approved medical examiner within 2 working days;
(2) Each such employer shall forward to the approved medical examiner a copy of the report of any evaluation performed under the provisions of this appendix within 2 working days of the employer's receipt of the report;
(3) All documents shall be sent to the approved medical examiner; and
(4) No covered employee who holds an airman medical certificate shall perform safety-sensitive duties for an employer following a violation until and unless the approved medical examiner has recommended that the employee be permitted to perform such duties.
(d) Notice of refusals:
(1) Except as provided in this paragraph, each employer shall notify the ECAA within 5 working days of any covered employee who holds a license and/or certificate that has refused to submit to an alcohol test required under this appendix. Notifications should be sent to: approved medical board or approved medical examiner; and
(2) An employer is not required to notify the above office of refusals to submit to pre-employment alcohol tests or refusals to submit to return to duty tests.
(e) Required evaluation and testing: No covered employee who has engaged in conduct prohibited by the ECARs shall perform safety-sensitive functions unless the employee has met the requirements of this appendix. No employer shall permit a covered employee who

has engaged in such conduct to perform safety-sensitive functions unless the employee has met the requirements of this appendix.

(f) Other alcohol-related conduct:

(1) No covered employee tested under the provisions of this appendix who is found to have an alcohol concentration of 0.02 or greater but less than 0.04 shall perform or continue to perform safety-sensitive functions for an employer, nor shall an employer permit the employee to perform or continue to perform safety-sensitive functions, until:

(A) The employee's alcohol concentration measures less than 0.02; or

(B) The start of the employee's next regularly scheduled duty period, but not less than 8 hours following administration of the test.

(3) Except as provided in this paragraph, no employer shall take any action under this rule against an employee based solely on test results showing an alcohol concentration less than 0.04. This does not prohibit an employer with authority independent of this rule from taking any action otherwise consistent with law.

121.aj.15 Alcohol misuse information, training, and referral

(a) Employer obligation to promulgate a policy on the misuse of alcohol:

(1) General requirements: Each employer shall provide educational materials that explain these alcohol misuse requirements and the employer's policies and procedures with respect to meeting those requirements:

(i) The employer shall ensure that a copy of these materials is distributed to each covered employee prior to the start of alcohol testing under the employer's ECAA-mandated alcohol misuse prevention program and to each person subsequently hired for or transferred to a covered position; and

(ii) Each employer shall provide written notice to representatives of employee organizations of the availability of this information.

(2) Required content: The materials to be made available to employees shall include detailed discussion of at least the following:

(i) The identity of the person designated by the employer to answer employee questions about the materials;

(ii) The categories of employees who are subject to the provisions of these alcohol misuse requirements;

(iii) Sufficient information about the safety-sensitive functions performed by those employees to make clear what period of the work day the covered employee is required to be in compliance with these alcohol misuse requirements;

(iv) Specific information concerning employee conduct that is prohibited by this appendix;

(v) The circumstances under which a covered employee will be tested for alcohol under this appendix;

(vi) The procedures that will be used to test for the presence of alcohol, protect the employee and the integrity of the breath testing process, safeguard the validity of the test results, and ensure that those results are attributed to the correct employee;

(vii) The requirement that a covered employee submit to alcohol tests administered in accordance with this appendix;

(viii) An explanation of what constitutes a refusal to submit to an alcohol test and the attendant consequences;

(ix) The consequences for covered employees found to have violated the prohibitions in this chapter, including the requirement that the employee be removed immediately from performing safety-sensitive functions, and the procedures under this appendix;

(x) The consequences for covered employees found to have an alcohol concentration of 0.02 or greater but less than 0.04; and

(xi) Information concerning the effects of alcohol misuse on an individual's health, work, and personal life; signs and symptoms of an alcohol problem; and available methods of evaluating and resolving problems associated with the misuse of alcohol; and intervening when an alcohol problem is suspected, including confrontation, referral to any available employee assistance program, and/or referral to management.

(3) Optional provisions: The materials supplied to covered employees may also include information on additional employer policies with respect to the use or possession of alcohol, including any consequences for an employee found to have a specified alcohol level, that are based on the employer's authority independent of this appendix. Any such additional policies or consequences must be clearly and obviously described as being based on independent authority:
   (i) Training for supervisors each employer shall ensure that persons designated to determine whether reasonable suspicion exists to require a covered employee to undergo alcohol testing under section II of this appendix receive at least 60 minutes of training on the physical, behavioral, speech, and performance indicators of probable alcohol misuse;
   (ii) Referral, evaluation, and treatment: Each covered employee who has engaged in conduct prohibited by the ECARs shall be advised by the employer of the resources available to the employee in evaluating and resolving problems associated with the misuse of alcohol, including the names, addresses, and telephone numbers of substance abuse professionals and counseling and treatment programs; and
   (iii) Each covered employee who engages in conduct prohibited by the ECARs shall be evaluated by a substance abuse professional who must determine what assistance, if any, the employee needs in resolving problems associated with alcohol misuse.

(4) Before a covered employee returns to duty requiring the performance of a safety-sensitive function after engaging in conduct prohibited by the ECARs, the employee shall undergo a return-to-duty alcohol test with a result indicating an alcohol concentration of less than 0.02.

(5) In addition, each covered employee identified as needing assistance in resolving problems associated with alcohol misuse:
   (i) Shall be evaluated by a substance abuse professional to determine whether the employee has properly followed any rehabilitation program prescribed under subparagraph 2 of this paragraph; and
   (ii) Shall be subject to unannounced follow-up alcohol tests administered by the employer following the employee's return to duty. The number and frequency of such follow-up testing shall be determined by a substance abuse professional, but shall consist of at least six tests in the first 12 months following the employee's return to duty. The employer may direct the employee to undergo testing for drugs (both return to duty and follow-up), in addition to alcohol testing, if the substance abuse professional determines that drug testing is necessary for the particular employee. Any such drug testing shall be conducted in accordance with the requirements of the ECARs. Follow-up testing shall not exceed 60 months from the date of the employee's return to duty. The substance abuse professional may terminate the requirement for follow-up testing at any time after the first six tests have been administered, if the substance abuse professional determines that such testing is no longer necessary.

(6) Evaluation and rehabilitation may be provided by the employer, by a substance abuse professional under contract with the employer, or by a substance abuse professional not affiliated with the employer. The choice of substance abuse professional and assignment of costs shall be made in accordance with employer/employee agreements and employer policies.

(7) Each employer shall ensure that a substance abuse professional who determines that a covered employee requires assistance in resolving problems with alcohol misuse does not refer the employee to the substance abuse professional's private practice or to a person or organization from which the substance abuse professional receives remuneration or in which the substance abuse professional has a financial interest. This paragraph does not prohibit a substance abuse professional from referring an employee for assistance provided through:
   (i) A public agency;
   (ii) The employer or a person under contract to provide treatment for alcohol problems on behalf of the employer;
   (iii) The sole source of therapeutically appropriate treatment under the employee's health insurance program; or

(iv) The sole source of therapeutically appropriate treatment reasonably accessible to the employee.

(8) The requirements of this paragraph with respect to referral, evaluation, and rehabilitation do not apply to applicants who refuse to submit to pre-employment testing or have a pre-employment test with a result indicating an alcohol concentration of 0.04 or greater.

121.aj.17 Employer's alcohol misuse prevention program

(a) Schedule for submission of certification statements and implementation:

(1) Each employer shall submit an alcohol misuse prevention program (AMPP) certification statement as prescribed in this appendix, in duplicate, to the ECAA, in accordance with the schedule below:

(i) Each employer that holds a certificate, each approved maintenance organization and each air traffic control facility affected by this rule shall submit a certification statement to the ECAA by January 1, 2002; and

(ii) Each employer that holds a Part 141, 142, 145 or 147 certificate and directly employs from 11 to 50 covered employees shall submit a certification statement to the ECAA by January 1, 2002.

(2) A company providing covered employees by contract to employers may be authorized by the ECAA to establish an AMPP under the auspices of this appendix by submitting a certification statement meeting the requirements of this appendix directly to the ECAA. Each contractor company that establishes an AMPP shall implement its AMPP in accordance with the provisions of this appendix:

(i) The ECAA may revoke its authorization in the case of any contractor company that fails to properly implement its AMPP; and

(ii) No employer shall use a contractor company's employee who is not subject to the employer's AMPP unless the employer has first determined that the employee is subject to the contractor company's ECAA-mandated AMPP.

(3) A consortium may be authorized to establish a consortium AMPP under the auspices of this appendix by submitting a certification statement meeting the requirements of this appendix directly to the ECAA. Each consortium that so certifies shall implement the AMPP on behalf of the consortium members in accordance with the provisions of this appendix:

(i) The ECAA may revoke its authorization in the case of any consortium that fails to properly implement the AMPP;

(ii) Each employer that participates in ECAA-approved consortium remains individually responsible for ensuring compliance with the provisions of these alcohol misuse requirements and must maintain all records required under this appendix; and

(iii) Each consortium shall notify the ECAA of any membership termination within 10 days of such termination.

(4) Any person who applies for a certificate after the effective date of the final rule shall submit an alcohol misuse prevention program (AMPP) certification statement to the ECAA prior to beginning operations pursuant to the certificate. The AMPP shall be implemented concurrently with beginning such operations or on the date specified in this section, whichever is later. Contractor employees to a new certificate holder must be subject to an ECAA-mandated AMPP within 180 days of the implementation of the employer's AMPP; and

(5) Each employer, and each contractor company that submits a certification statement directly to the ECAA, shall notify the ECAA of any proposed change in status. The employer or contractor company must ensure that it is continuously covered by an ECAA-mandated alcohol misuse prevention program.

(b) Required content of AMPP certification statements:

(1) Each AMPP certification statement submitted by an employer or a contractor company shall provide the following information:

(i) The name, address, and telephone number of the employer / contractor company and for the employer/contractor company AMPP manager;

(ii) ECAA operating certificate number (if applicable);

(iii) The date on which the employer or contractor company will implement its AMPP;
(iv) If the submitter is a consortium member, the identity of the consortium; and
(v) A statement signed by an authorized representative of the employer or contractor company certifying an understanding of an agreement to comply with the provisions of the ECAA's alcohol misuse prevention regulations.

(2) Each consortium certification statement shall provide the following information:
(i) The name, address, and telephone number of the consortium's AMPP manager;
(ii) A list of the specific services the consortium will be providing in implementation of ECAA-mandated AMPPs; and
(iii) A statement signed by an authorized representative of the consortium certifying an understanding of an agreement to comply with the provisions of the ECAA's alcohol misuse prevention regulations.

121.aj.19 Employees located outside the Arab Republic of Egypt

(a) No covered employee shall be tested for alcohol misuse while located outside the territory of the Arab Republic of Egypt:
(1) Each covered employee who is assigned to perform safety-sensitive functions solely outside the territory of the Arab Republic of Egypt shall be removed from the random testing pool upon the inception of such assignment; and
(2) Each covered employee who is removed from the random testing pool under this paragraph shall be returned to the random testing pool when the employee resumes the performance of safety-sensitive functions wholly or partially within the territory of the Arab Republic of Egypt.

(b) The provisions of this appendix shall not apply to any person who performs a safety-sensitive function by contract for an employer outside the territory of the Arab Republic of Egypt.

Appendix K
AIR OPERATOR CERTIFICATE (AOC)

121.a k.1. Purpose and scope

1.1 The AOC and its associated model – specific operations specifications shall contain the minimum information required in paragraphs 2 and 3 in a standard format .

1.2 The air operator certificate and its associated operations specifications shall define the operations for which an operator is authorized, including specific approvals, conditions and limitations..

121.a k.2. AOC template

AIR OPERATOR CERTIFICATE		
	Arab Republic of Egypt **Egyptian Civil Aviation Authority**	EGYPTIAN CIVIL AVIATION AUTHORITY
AOC #1: Expiry Date2:	**Operator Name**[3] **Dba** Trading Name[4] Operator address[6]: Telephone[7]: Fax: E-mail:	**Operational Points of Contact:**[5] Contact details, at which operational management can be contacted without undue delay, are listed in .....[8].
This certificate certifies that ……..[9] is authorized to perform commercial air operations, as defined in the attached operations specifications, in accordance with the Operations Manual and the ……[10] .		
Date of issue[11]:	Name and Signature[12]: Title:	

1. Unique AOC number, as issued by the State of the Operator.
2. Date after which the AOC ceases being valid (dd-mm-yyyy).
3. the operator registered name.
4. Operator trading name, if different. Insert "Dba" before the trading name (for "Doing business as").
5. The contact details include the telephone and fax numbers, including the country code, and the e-mail address (if available) at which operational management can be contacted without undue delay for issues related to flight operations, airworthiness, flight and cabin crew competency, dangerous goods and other matters as appropriate.
6. Operator principal place of business address.
7. Operator principal place of business telephone and fax details, including the country code. E-mail to be provided if available
8. the controlled document, carried on board, in which the contact details are listed, with the appropriate paragraph or page reference. E.g.: "Contact details … are listed in the operations Manual, Gen/Basic, Chapter 1, 1.1"; or "…are listed in an attachment to this document".
9. Operator registered name.
10. reference to the appropriate Egyptian Civil Aviation Regulations (ECARs)
11. Issuance date of the AOC (dd-mm-yyyy).
12. Title, name and signature of the ECAA representative. In addition, an official stamp applied on the AOC

121.a k.3. Operations specifications for each aircraft model

3.1 For each aircraft model in the operator's fleet, identified by aircraft make, model and series, the following information shall be included: ECAA contact details, operator name and AOC number, date of issue and signature of the ECAA representative, aircraft model, types and area of operations, special limitations and specific approvals.

Note.— If specific approvals and limitations are identical for two or more models, these models may be grouped in a single list.

3.2 The operations specifications layout referred to in 121.23 . (b) shall be as in the next page.

Note:- The MEL constitutes an integral part of the operations manual

OPERATIONS SPECIFICATIONS (subject to the approved conditions in the Operations Manual)			
Egyptian Civil Aviation Authority Contact Details. Telephone[1]: _____ Fax: _____ E-mail: _____			
AOC#[2]:	Operator Name[3]: Dba Trading Name	Date[4]:	signature of the ECAA representative

Aircraft Model[5]:				
Types of operation: Commercial air transportation □ Passengers; □ Cargo; □ Other[6]**:**				
Area(s) of operation[7]:				
Special Limitations[8]:				
Specific Approval	Yes	No	**DESCRIPTION[9]**	Remarks
Dangerous Goods	□	□		
Low Visibility Operations Approach and Landing Take-off Operational credit(s)	 □ □ □	 □ □ □	 CAT[10] ..... RVR: … m DH: ….. ft RVR[11]: ……. m [12]	
RVSM[13] □ N/A	□	□		
EDTO[14] □ N/A	□	□	Threshold time [15]: minutes Maximum Diversion Time[15]: .. minutes	
AR Navigation Specifications for PBN Operations	□	□	[16]	
Continuing Airworthiness			[17]	
EFB			[18]	
Others[19]	□	□		

Notes:

1. Telephone contact details of ECAA, including the country code. E-mail and fax to be provided if available.
2. Insertion of associated AOC number.
3. Insertion of the operator registered name and the operator trading name, if different. Insert "Dba" before the trading name (for "Doing business as").
4. Issuance date of the operations specifications (dd-mm-yyyy) and signature of the ECAA representative.
5. Insert the Commercial Aviation Safety Team (CAST)/ICAO designation of the aircraft make, model and series, or master series, if a series has been designated (e.g. Boeing-737-3K2 or Boeing-777-232). The CAST/ICAO taxonomy is available at: http://www.intlaviationstandards.org
6. Other type of transportation to be specified (e.g. emergency medical service).
7. List the geographical area(s) of authorized operation (by geographical coordinates or specific routes, flight information region or national or regional boundaries) as defined by the issuing authority.
8. List the applicable special limitations (e.g. VFR only, day only).
9. List in this column the most permissive criteria for each specific approval (with appropriate criteria).
10. Insert the applicable precision approach category (CAT II or III). Insert the minimum RVR in meters and decision height in feet. One line is used per listed approach category.
11. Insert the approved minimum take-off RVR in meters, or the equivalent horizontal visibility if RVR is not used. One line per approval may be used if different approvals are granted.
12. List the airborne capabilities (i.e. automatic landing, HUD, EVS, SVS, CVS) and associated operational credit(s) granted.
13. "Not applicable (N/A)" box may be checked only if the aircraft maximum ceiling is below FL 290.
14. If extended diversion time operations (EDTO) approval does not apply based on the provisions in Appendix M to this part, select "N/A". Otherwise a threshold time and maximum diversion time must be specified.
15. The threshold time and maximum diversion time may also be listed in distance (NM), as well as the engine type.

16. Performance-based navigation (PBN): one line is used for each PBN AR navigation specification approval (e.g. RNP AR APCH), with appropriate limitations listed in the "Description" column.
17. Insert the name of the person/organization responsible for ensuring that the continuing airworthiness of the aircraft is maintained and the regulation that requires the work, i.e. within the AOC regulation or a specific approval (e.g. EC2042/2003, Part M, Subpart G).
18. List the EFB functions with any applicable limitations.
19. Other authorizations or data can be entered here, using one line (or one multi-line block) per authorization (e.g. special approach authorization, approved navigation performance).

APPENDIX L

ORGANIZATION AND CONTENTS OF AN OPERATIONS MANUAL

- The contents of the Operation Manual are presented in a form can be used without difficulty. And the design shall observe human factors principles.
- The Operations Manual, including all amendments or revisions, does not contravene the conditions contained in the Air Operator Certificate (AOC) or any applicable regulations and are acceptable to, or, where applicable, approved by the Authority.
- The Manual control in the form of a table of contents and list of effective pages,

(Record of normal revisions) & Record of Temporary Revisions (TR)

- An operations manual, which may be issued in separate parts corresponding to specific aspects of operations, shall be organized with the following structure:
  (a) General;
  (b) Aircraft operating information;
  (c) Areas, routes and aerodromes; and
  (d) Training.

  Note.1:Part (A) General shall be sub classified into the following volumes according to the nature and complexity of operations (if applicable):-
  (a)Vol. 1. As General
  (b)Vol. 2. As dispatch manual
  (c)Vol. 3. As station manual
  (d)Vol. 4. As SMS manual and it may include ERP
  (e)Vol. 5. As cabin crew manual
  (f)Vol. 6. As Corporate manual
  (g)Vol. 7. As Security manual
  Note.2: Header of the operations manual shall include :-
  1.logo of operator
  2.Manual's title including (part no. & vol. no.)
  3.Chapter 's title , number and page number
  Note.3: Footer of the operations manual shall include :-
  1.Issue date and number
  2.Revision date and number

121. aL.1 General

The Operations Manual shall contain as a minimum:

1.1 Introduction outlining operator policy, objectives , compliance with regulations requirements and any specific approval required by the Authority.

1.2 The responsibility , accountability and delegations of the nominated post holders as follows:

- Accountable executive
- Flight operations manager
- Chief inspector
- SMS manager
- Chief pilot

1.3 Instructions outlining the responsibilities, delegations and particular duties of operations personnel and the relationship of such duties to the operation as a whole.

1.4 organizational and management system and structure for the operational control of all flights according to operating regulations applicable to aircraft operations , including :-

a) Establishment of operational control system .
b) definition of responsibilities and authorities of personnel.

1.5 Functions and responsibilities of Flight crew; and Flight operations officers/flight dispatchers for Initiation; Continuation; Diversion; and Termination of flights,

1.6 Flight and duty time limitations and rest schemes for flight and cabin crew members as required by Subpart Q to this Part in addition to policy and documentation pertaining to the operator’s FRMS, if applicable

1.7 A list of the navigational equipment to be carried including any requirements relating to operations where performance-based navigation is prescribed.

1.8 Where relevant to the operations, the long-range navigation procedures, engine failure procedure for ETOPS (EDTO) and the nomination and utilization of diversion aerodromes.

1.9 The circumstances in which a radio listening watch is to be maintained.

1.10 The method for determining minimum flight altitudes. see, (ECAR 91.177)

1.11 The methods for determining aerodrome operating minima.

1.12 Safety precautions during refueling with passengers on board.

1.13 Ground handling training , arrangements and procedures including ground handling structure, and lines of responsibilities associated with the following, when applicable:

a) Ramp operations,
b) Passenger services & Baggage services,
d) Cabin services,
e) Weight and balance control,
f) Ground support equipment, and Fuel services.

1.14 ground handling training requirements, subcontracting policies, handling processes
1.15 Procedures, as prescribed in ECAR91.3, for pilots-in-command observing an accident.
1.16 policy and procedures for flight crew to record and report on: Routine meteorological observation during:
a) En-route, and
b) Climb-out phases of the flight; and Special and other non-routine observations during any phase of the flight and Volcanic activity
1.17 The flight crew for each type of operation including the designation of the succession of command.
1.18 Specific instructions for the computation of the quantities of fuel and oil to be carried, taking into account all circumstances of the operation including the possibility of loss of pressurization and the failure of one or more engines while en route.
1.19 The conditions under which oxygen shall be used and the amount of oxygen determined in accordance with applicable requirements.
1.20 Instructions for mass and balance control.
1.21 Instructions for the conduct and control of ground de-icing/anti-icing operations.
1.22 The specifications for the operational flight plan.
1.23 Standard operating procedures (SOP) for each phase of flight.
1.24 Instructions on the use of normal checklists and the timing of their use.
1.25 Departure contingency procedures.
1.26 Instructions on the maintenance of altitude awareness and the use of automated or flight crew altitude call-out.
1.27 Instructions on the use of autopilots and auto throttles in IMC.
Note.— Instructions on the use of autopilots and auto throttles, are essential for avoidance of approach and landing accidents and controlled flight into terrain accidents.
1.28 An operator shall develop policies and procedures for third parties that perform work on its behalf.
1.29 Departure and approach briefings.
1.30 Procedures for familiarization with areas, routes and aerodromes.
1.31 Stabilized approach procedure.
1.32 Limitation on high rates of descent near the surface.
1.33 Conditions required to commence or to continue an instrument approach.
1.34 Instructions for the conduct of precision and non-precision instrument approach procedures.
1.35 Allocation of flight crew duties and procedures for the management of crew workload during night and IMC instrument approach and landing operations.
1.36 Instructions and training requirements for the avoidance of controlled flight into terrain (CFIT) and policy for the use of the ground proximity warning system (GPWS).
1.37 Policy, instructions, procedures and training requirements for the avoidance of collisions and the use of the airborne collision avoidance system (ACAS).
Note.— Procedures for the operation of ACAS are contained in PANS-OPS (ICAO Doc 8168), Volume I, and in PANS-ATM (ICAO Doc 4444), Chapters 12 and 15.
1.38 Information and instructions relating to the interception of civil aircraft including:
(1) Procedures, as prescribed in Annex 2, for pilots-in-command of intercepted aircraft; and
(2) Visual signals for use by intercepting and intercepted aircraft, as contained in Annex 2- Rules of Air (as amended).
1.39 For aero planes intended to be operated above 15 000 m (49 000 ft):
(1) Information which will enable the pilot to determine the best course of action to take in the event of exposure to solar cosmic radiation; and
(2) Procedures in the event that a decision to descend is taken, covering:
(i) The necessity of giving the appropriate ATS unit prior warning of the situation and of obtaining a provisional descent clearance; and
(ii) The action to be taken in the event that communication with the ATS unit cannot be established or is interrupted.
1.40 Details of the applicable requirements of SMS, including a statement of safety policy and the responsibility of personnel.
1.41 Operators with no operational approval to transport dangerous goods as cargo have to establish dangerous goods policies and procedures in its operations manual to meet, at a

minimum, the requirements of Annex 18, the Technical Instructions and the ECAR to allow operator personnel to:

(1) Identify and reject undeclared dangerous goods, including COMAT classified as dangerous goods; and

(2) Report to the ECAA, appropriate authorities and the State in which it occurred any:
(i) Occasions when undeclared dangerous goods are discovered in cargo or mail; and
(ii) Dangerous goods accidents and incidents.

(4) Ensure that all personnel, including third-party personnel, involved in the acceptance, handling, loading and unloading of cargo are informed of the operator's operational approval and limitations with regard to the transport of dangerous goods.

(5) Provisions set forth in this item should be applied by domestic commercial air transport operations.

1.42 Information and instructions on the carriage of dangerous goods, including action to be taken in the event of an emergency.

Note.— Guidance material on the development of policies and procedures for dealing with dangerous goods incidents on board aircraft is contained in Emergency Response Guidance for Aircraft Incidents involving Dangerous Goods (Doc 9481).

1.43 Security instructions and guidance.

1.44 procedures to enable cabin crew to discreetly communicate to flight crew in the event of suspicious activity or security breaches in the passenger cabin

1.45 The search procedure checklist provided in accordance with security requirements.

1.46 instructions for the preservation and retention of flight recorder records and, if necessary, associated flight recorders to the extent possible, in the event that the aeroplane becomes involved in an accident or incident

1.47 procedures for the crew to evaluate a traveler with a suspected communicable disease, based on the presence of a fever and certain other signs or symptoms and the transmission of general declaration to concerned authorities in addition to reporting to ATC, including transmission of the following information:

1) Aircraft identification;
2) Departure aerodrome;
3) Destination aerodrome;
4) Estimated time of arrival;
5) Number of persons on board;
6) Number of suspected case(s) on board; and
7) Nature of the public health risk, if known.

1.48 Provision of pre-flight information essential for the safety, regularity and efficiency of air navigation (at any authorized aerodrome) including :Elements of the integrated Aeronautical Information Package ; Maps and charts.

1.49 Policies and procedures for third parties that perform work on behalf the operator

121.aL.2 Aircraft operating information

This section shall contain as a minimum:

2.1 organization, update and revision system.

2.2 Certification limitations and operating limitations.

2.3 The normal, abnormal and emergency procedures to be used by the flight crew and the checklists relating to the operation of the aircraft for each aircraft type operated.

2.4 Operating instructions and information on climb performance with all engines operating.

2.5 Flight planning data for pre-flight and in-flight planning with different thrust/power and speed settings.

2.6 The maximum crosswind and tailwind components for each aero plane type operated and the reductions to be applied to these values having regard to gusts, low visibility, runway surface conditions, crew experience, use of autopilot, abnormal or emergency circumstances, or any other relevant operational factors.

2.7 Instructions and data for mass and balance calculations.

2.8 Instructions for aircraft loading and securing of load.

2.9 Aircraft systems, associated controls and instructions for their use.

2.10 The minimum equipment list and configuration deviation list for the aeroplane types operated and specific operations authorized, including any requirements relating to operations where performance-based navigation is prescribed.
2.11 operations procedures for conduct of special authorizations (CAT II ,CAT III , RNP, MNPs, ETOPs, RVSM)
2.12 Checklist of emergency and safety equipment and instructions for its use.
2.13 Emergency evacuation procedures, including type specific procedures, crew co-ordination, assignment of crew's emergency positions and the emergency duties assigned to each crew member.
2.14 The normal, abnormal and emergency procedures to be used by the cabin crew, the checklists relating thereto and aircraft systems information as required, including a statement related to the necessary procedures for the coordination between flight and cabin crew.
2.15 Survival and emergency equipment for different routes and the necessary procedures to verify its normal functioning before take-off, including procedures to determine the required amount of oxygen and the quantity available.
2.16 The ground-air visual signal code for use by survivors, as contained in Annex12 (Search &rescue).
2.17 Instructions and training requirements for the use of head-up displays (HUD) and enhanced vision systems (EVS) equipment as applicable

121.aL.3 Routes and aerodromes

This section shall contain as a minimum:
3.1 A route guide to ensure that the flight crew will have, for each flight, information relating to communication facilities, navigation aids, aerodromes, instrument approaches, instrument arrivals and instrument departures as applicable for the operation, and such other information as the operator may deem necessary for the proper conduct of flight operations.
3.2 The minimum flight altitudes for each route to be flown. see,(ECAR 91.177)
3.3 Aerodrome operating minima for each of the aerodromes that are likely to be used as aerodromes of intended landing or as alternate aerodromes.
method for determining heliport operating minima for helicopter operators(if applicable)
3.4 The increase of aerodrome operating minima in case of degradation of approach or aerodrome facilities.
3.5 The necessary information for compliance with all flight profiles required by regulations, including but not limited to, the determination of:
(1) take-off runway length requirements for dry, wet and contaminated conditions, including those dictated by system failures which affect the take-off distance;
(2) take-off climb limitations;
(3) en-route climb limitations;
(4) approach climb limitations and landing climb limitations;
(5) landing runway length requirements for dry, wet and contaminated conditions, including systems failures which affect the landing distance; and
(6) supplementary information, such as tire speed limitations.
3.6 An operator shall, as part of its safety management system, assess the level of rescue and firefighting service (RFFS) protection available at any aerodrome intended to be specified in the operational flight plan in order to ensure that an acceptable level of protection is available for the aeroplane intended to be used.

121.aL.4 Training

4.1 General

Training policies and directives shall include:-
(a) Administrative support of air operator;
(b) List of designated instructors and line check examiners;
(c) Comprehensive syllabi, including lesson plans for approved training;
(d) Procedures for the conduct of examinations and manoeuvre tolerances;
(e) Procedures to require that flight crew members are properly trained and examined on abnormal and emergency conditions;
(f) Procedures for remedial training and subsequent examination of flight crew unable to achieve or maintain required standards; and
(g) A process to obtain authority's approval for subsequent changes to the training manual.

(h) Training programs which should include initial, recurrent, transition (conversion), re-qualification, upgrade, regency of experience, familiarization, differences, safety management and other specialized training , as part of the flight safety documents and as applicable.

4.2 Details of the flight crew training program.

4.2.1 initial Flight crew member training programmes

An operator shall establish and maintain a ground and flight training programme, approved by the State of the Operator, which ensures that all flight crew members are adequately trained to perform their assigned duties. The training programme shall:

(a) include list of ground and flight training facilities and properly qualified instructors as determined by the ECARs

(b) consist of ground and flight training in the type(s) of aeroplane on which the flight crew member serves;

(c) include proper flight crew coordination and training in all types of emergency and abnormal situations or procedures caused by engine, airframe or systems malfunctions, fire or other abnormalities;

(d) include training in knowledge and skills related to visual and instrument flight procedures for the intended area of operation, human performance including threat and error management and in the transport of dangerous goods;

(e) ensure that all flight crew members know the functions for which they are responsible and the relation of these functions to the functions of other crew members, particularly in regard to abnormal or emergency procedures

(f) be given on a recurrent basis, as determined by the State of the Operator and shall include an assessment of competence.

Notes

- The in-flight simulation of emergency or abnormal situations when passengers or cargo are being carried is prohibited.
- Flight training may, to the extent deemed appropriate by the State of the Operator, be given in flight simulation training devices approved by the State for that purpose.
- The scope of the recurrent training required may be varied and need not be as extensive as the initial training given in a particular type of aero plane.
- The use of correspondence courses and written examinations as well as other means may, to the extent deemed feasible by the State of the Operator, be utilized in meeting the requirements for periodic ground training.
- For more information on dangerous goods operational requirements, see subpart Y
- Guidance material to design training programmes to develop knowledge and skills in human Performance can be found in the Human Factors Training Manual (ICAO Doc 9683).
- Information for pilots and flight operations personnel on flight procedure parameters and operational procedures is contained in PANS-OPS (Doc 8168), Volume I

4.2.2 The requirement for recurrent flight training in a particular type of aeroplane shall be considered fulfilled by:

(a) The use, to the extent deemed feasible by the State of the Operator, of flight simulation training devices approved by that State for that purpose; or

(b) The completion within the appropriate period of the proficiency check required in that type of aero plane.

4.3 The cabin crew duties training program as required by applicable requirements.

An operator shall establish and maintain a training programme, approved by the ECAA, to be completed by all persons before being assigned as a cabin crew member. Cabin crew members shall complete a recurrent training programme annually. These training programmes shall ensure that each person is:

4.3.1 Outlined details of the cabin crew's safety duties and functions shall be included in the cabin crew training program as follows:-

(1) Basic instructions on the different functions, duties and responsibilities of cabin crew members
(2) Introduction to aircraft systems and limitations
(3) Aircraft emergency evacuation, life-safety equipment and related information to passengers
(4) Cabin crew members assignment, coordination and two-way communication
(5) Knowledge and skills related to the transport of dangerous goods
(6) Security procedures

4.3.2 These training programmes shall ensure that each person is:

(1) Competent to execute those safety duties and functions which the cabin crew member is assigned to perform in the event of an emergency or in a situation requiring emergency evacuation;
(2) Drilled and capable in the use of emergency and life-saving equipment required to be carried, such as life jackets, life rafts, evacuation slides, emergency exits, portable fire extinguishers, oxygen equipment, first-aid and universal precaution kits, and automated external defibrillators;
(3) When serving on aeroplanes operated above 3 000 m (10 000 ft), knowledgeable as regards the effect of lack of oxygen and, in the case of pressurized aeroplanes, as regards physiological phenomena accompanying a loss of pressurization;
(4) Aware of other crew members' assignments and functions in the event of an emergency so far as is necessary for the fulfilment of the cabin crew member's own duties;
(5) Aware of the types of dangerous goods which may, and may not, be carried in a passenger cabin
(6) Knowledgeable about human performance as related to passenger cabin safety duties including flight crew-cabin crew coordination.

Note 1.— Requirements for the training of cabin crew members in the transport of dangerous goods are included in the Dangerous Goods Training Programme contained in Annex 18 —

Note 2.— For more information on dangerous goods operational requirements, see Chapter 12.

Note 3.— Guidance material to design training programmes to develop knowledge and skills in human performance can be found in the Cabin Crew Safety Training Manual (Doc 10002)

Note 4.— Guidance material to design training programmes to develop knowledge and skills in human performance can be found in the Human Factors Training Manual(Doc 9683)

4.3.3 Recurrent training programme including an examination to determine competence is required

4.3.4 A policy and associated procedures to ensure that air operators select and appoint cabin crew instructors who meet at least the minimum requirements in terms of experience and knowledge

4.3.5 operator shall maintain on a recurrent basis, the knowledge, skills and qualifications of cabin crew ground instructors and examiners

4.4 Flight operations officers / flight dispatchers training program

4.4.1 When the State of the Operator requires that a flight operations officer/flight dispatcher, employed in conjunction with an approved method of control and supervision of flight operations, be licensed, that flight operations officer/flight dispatcher shall be licensed in accordance with the provisions of ECAR part 65.

4.4.2 In accepting proof of qualifications other than the option of holding of a flight operations officer/flight dispatcher licence, the State of the Operator, in accordance with the approved method of control and supervision of flight operations, shall require that, as a

minimum, such persons meet the requirements specified in ECAR part 65for the flight operations officer/flight dispatcher licence.

4.4.3 A flight operations officer/flight dispatcher shall not be assigned to duty unless that person has:

(a) Satisfactorily completed an operator-specific training course that addresses all the specific components of its approved method of control and supervision of flight operations

(b) Made, within the preceding 12 months, at least a one-way qualification flight in the flight crew compartment of an aeroplane over any area for which that individual is authorized to exercise flight supervision. The flight should include landings at as many aerodromes as practicable;

4.4.4 The flight operations officer/flight dispatcher should include, if applicable, the following:

(a) Civil air law and regulations;
(b) Aviation instruction;
(c) Use of operations manual;
(d) Aircraft performance;
(e) Navigation;
(f) Flight planning and monitoring;
(g) Rules of the air, communication and air traffic management;
(h) Meteorology;
(i) Mass and balance control;
(j)Use of minimum equipment list (MEL)/configuration deviation list (CDL);
(k)Transport of dangerous goods by air;
(l)Security procedures;
(m)Emergency response plan;
(n)Flight observation

Note.— Guidance on the composition of such training syllabi is provided in the Training Manual (Doc 7192), Part D-3— Flight Operations Officers/Flight Dispatchers.

4.4.5 Recurrent training programme including an examination to determine competence is required

4.4.6 A policy and associated procedures to ensure that air operators select and appoint flight dispatch/flight operations officers ground instructors who meet at least the minimum requirements in terms of experience and knowledge

4.4.7 operator shall maintain on a recurrent basis, the knowledge, skills and qualifications of flight dispatch/flight operations officers ground instructors.

4.5 A procedure for training records preservation and retention shall be maintained for a specified period of time

Appendix M
Requirements for EDTO (ETOPS)

ECAA approves EDTO in accordance with the requirements and limitations in this appendix.

Section I EDTO Approvals: Airplanes with two engines.

(a) Propulsion system reliability for EDTO;

(1) Before ECAA grants EDTO operational approval, the operator must be able to demonstrate the ability to achieve and maintain the level of propulsion system reliability, if any, that is required by ECAR121.372(j) for EDTO approved airplane – engine combination to be used.

(2) Following EDTO operational approval , the operator must monitor the propulsion system reliability for the airplane –engine combination used in EDTO, and take action as required by ECAR121. .372(j) for the specified IFSD rates.

(b) 75 Minutes EDTO. ECAA grants approvals to conduct EDTO with maximum diversion times up to 75 minutes as follows:

(1) ECAA reviews the airplane – engine combination to ensure the absence of factors that could prevent safe operations. The airplane – engine combination need not be type – design – approved for EDTO ; however, it must have sufficient favorable experience to demonstrate to ECAA a level of reliability appropriate for 75 – minute EDTO.

(2) The certificate holder must comply with the requirements of ECAR121.633 for time –limited system planning.

(3) The certificate holder must operate in accordance with the EDTO authority as contained in its operations specifications.

(4) The certificate holder must comply with the maintenance program requirements ECAR121.372

(5) The certificate holder must comply with the MEL in its operations specifications for 120 – minute EDTO.

(c) 120 – minute EDTO. ECAA grants approvals to conduct EDTO with Maximum diversion times up to 120 – minutes as follows:

(1) The airplane – engine combination must be type – design – approved for EDTO of at least 120 minute.

(2) The certificate holder must operate in accordance with the EDTO authority in its operations specifications.

(3) The certificate holder must comply with the maintenance program requirements of ECAR121.372

(4) The certificate holder must comply with the MEL requirements for 120 minute EDTO

(d) 180-minute EDTO. ECAA grants approval to conduct EDTO with diversion times up to 180 minute as follows:

(1) For these operations the airplane – engine combination must be type – design – approved for EDTO of at least 180 minutes.

(2) The certificate holder must operate in accordance with EDTO authority as contained in its operations specifications.

(3) The certificate holder must comply with the maintenance program requirements of ECAR121.372

(4) The certificate holder must comply with the MEL requirements for beyond 120 minutes EDTO.

(e) Greater than 180 – minute EDTO . ECAA grants approval to conduct EDTO greater than 180 – minutes provided the following requirements are met:

(1) ECAA grants approval only to certificate holders with existing 180 – minute EDTO operating authority for the airplane – engine combination to be operated.

(2) The certificate holder must have previous EDTO experience satisfactory to ECAA.

(3) In selecting EDTO alternate airports, the operator must make every effort to plan EDTO with maximum diversion distances of 180 minutes or less , if possible. If conditions necessitate using an EDTO alternate airport beyond 180 minutes, the route

may be flown only if the requirements for the specific operating area in paragraph (f) of section (I) of this appendix

(4) The certificate holder must inform the flight crew each time an airplane is proposed for dispatch for greater than 180 minutes and tell them why the route was selected.

(5) In addition to the equipment specified in the certificate holder's MEL for 180 minute EDTO, The following systems must be operational for dispatch:
   (i) The fuel quantity indicating system
   (ii) The APU (including electrical and pneumatic supply and operating to the APU design capability).
   (iii) The auto throttle system
   (iv) The communication system required by ECAR121.99 or 121.345
   (v) One – engine inoperative auto – land capability, if flight planning

(6) The certificate holder must operate in accordance with the EDTO authority as contained in its operations specifications.

(7) The certificate holder must comply with the maintenance program requirements of ECAR121.372.

(f) 207 – minute EDTO in the North Pacific Area of operation

(1) ECAA grants approval to conduct EDTO with maximum diversion times up to 207 minutes in the North Pacific Area of operations as an extension to 180 – minute EDTO authority to be used on an exception basis. This exception may be used only on a flight – by – flight basis when an EDTO alternate airport is not available within 180 minutes for reasons such as political or military concerns; volcanic activity; temporary airport conditions; and airport weather below dispatch requirements or other weather related events.

(2) The nearest available EDTO alternate airport within 207 minutes diversion time must be specified in the dispatch or flight release.

(3) In conducting such a flight the certificate holder must consider ATC preferred track.

(4) The airplane – engine combination must be type – design – approved for EDTO of at least 180 minutes. The approved time for the airplane's most limiting EDTO significant system and most limiting cargo – fire suppression time for those cargo and baggage compartment required by regulation to have fire - suppression system must be at least 207 minutes

(5) The certificate holder must track how many times 207 – minute authority is used.

Section II. EDTO approval : Passenger Carrying Airplanes With More Than Two Engines.

(a) ECAA grants approval to conduct EDTO as follows:

(1) The airplane – engine combination must be type – design approved for EDTO.

(2) The operator must designate the nearest available EDTO alternate airports within 240 minutes diversion time (at one – engine – inoperative cruise speed under standard conditions instill air). If an EDTO alternate airport is not available within 240 minutes, the operator must designate the nearest available EDTO alternate airports along the planned route of flight.

(3) The MEL limitations for the authorized EDTO diversion time apply.
   (i) The fuel quantity indicating system must be operational
   (ii) The communications systems required by ECAR121.99 or 121.345 must be operational

(4) The certificate holder must operate in accordance with the EDTO authority contained in its operations specifications.

Appendix N

Certifications / Operations of Each AOC holder under adopted regulations from EU

121.an.1 1 **Effectivity**

This appendix will be effective from January 1, 2020

121.an.3 applicability :

This Appendix establishes the requirements for Each AOC holder for his certifications/operations according to adopted EU Regulation (EC regulation 965/2011 and its subsequent revisions)

121.an.5 Expected differences from EU regulations

The following is a list of intentional differences in adoption of (EC) regulation 965/2011 and its subsequent revisions

Considering:

- The tenets of the EC Regulation in its EU context,
- That some requirements of EC Regulation have been developed to regulate inside EU the simultaneous presence and the respective obligations of an Agency (EASA) and several Member States, with their own ICAO responsibilities,
- That Egypt cannot be considered an EU Member State ,
- That the concept of Member State cannot be applicable within Egypt,

The Egyptian transposition of this EC Regulation requires some intentional differences, aimed to maintain the original principles and able to adapt the text to the specific condition of Egypt.

These intentional differences do not affect or limit in any way the rights and obligations stemming from the relevant provisions of the ECAA agreement.

Therefore the following terms shall have the meaning specified hereafter, but the above considerations must be taken into account and prevail in whatever case of doubts.

term/concept used in the body of EU act:	in the Egypt system means:
a Member State / Member States	Egypt
third country	any country other than Egypt
Community Operator	Egyptian Operator
Community law	Egyptian LAW 28
Community territory	Egyptian territory
Commission Regulation n.	Egyptian Civil Aviation Regulation
Basic Regulation	Egypt **Basic Regulation 1/2016(EU 216/2008)**
"*entry into force*"	the entry into force is that specified in the Egypt issue of Regulation
"*calendar derogations*" for applicability	no calendar derogations is allowed (all transitional periods have expired but not apply for amendment of the current regulation)
Competent authority (Agency or authority designated e.g. in art. M1, 145.1 and 147.1)	the Egypt Civil Aviation Authority
Agency	the Egyptian Civil Aviation Authority
within the EU	within Egypt
imported into the EU	imported into Egypt
inform other Member States	N/A
The competent authority shall also notify those measures to the Agency and, when combined action is	N/A

required, the other Member States concerned.	

The following reference are not applicable:

- ARO.GEN.120 Means of compliance , (d) from 1 to 3, (e) (2)
- GM1 ARO.GEN.120
- ARO.GEN.125 Information to the Agency
- ARO.GEN.135 Immediate reaction to a safety problem (b)
- AMC1 ARO.GEN.200(d) Management system (7) (b)
- ARO.GEN.210 Changes in the management system (c)
- ARO.GEN.220 Record-keeping (a) (7), (9) and related AMC
- ARO.OPS.110 Lease agreements (b) (2), (c) (2)

Note: Any commitments between competent authority and the Agency it are not applicable

Appendix O
Implementing standard (IS) : 121.415 for additional requirements concerning cabin crew training standers

121.ao.1INTRODUCTION

This training standard outlines the minimum requirements for compliance with the regulations as stipulated in ECAR 121 or any other requirement published by the ECAA, respecting the use of aircraft in airline operations, and contains three components:

121.ao.2. INTRODUCTION TO THE TRAINING PROGRAMME

121.ao.2.1 TRAINING SYLLABUS

Identifies the main subjects required for Initial, Aircraft Type, Differences, Aircraft Visit Familiarization/ operating familiarization , Recurrent and Requalification Training.

121.ao.2.1.1 PROGRAM CONTENT

Specifies the training objective, scope, specific information associated with each of the subjects; and the practical drills which must be completed.

121.ao.2.2 SCHEDULE A – AIRCRAFT EXIT COMPATIBILITY GROUPS

Identifies exits by aircraft type, and where applicable, identifies a compatible alternative for that exit.

When developing training programs for regulatory approval, the air operator shall incorporate the components from this standard, which are applicable to their operation (e.g. aircraft type, model, series operated; applicable regulatory requirements/standards; safety and emergency equipment etc.).

Note: Optional items, guidance information, recommended practices, explanations, and other information items will in all cases be italicized and where applicable, be shown in an enclosed box. These items do not form part of the standard, but provide additional information for the assistance of users of this standard. Information published in an air operator's Cabin Crewmember Training Program may be organized in a different order than presented in this Standard, however, the air operator must provide a detailed index/cross reference.

121.ao.3. TRAINING SYLLABUS

121.ao.3.1 INITIAL TRAINING

Initial training is required for persons who have not previously operated as a cabin crew member. The goal of initial training is to ensure that each trainee acquires the competencies, knowledge and skills required to perform the duties and responsibilities related to the safety of passengers and flight during normal, abnormal and emergency situations. This is accomplished through classroom instruction or computer-based training (CBT) complemented by a series of hands-on and simulated exercises such as first aid and firefighting. Cabin crew trainees must complete initial training before they are assigned duties as cabin crewmembers.

Initial training includes:

Basic Indoctrination;
Duties and Responsibilities;
Normal, Abnormal and Emergency Procedures;
Aircraft Type Training;
Dangerous Goods;
Human Performance; (CRM)
Cabin Health and First Aid;
Duties and Responsibilities relating to Aviation Security and
Safety management system (SMS).

121.ao.3.2 AIRCRAFT TYPE TRAINING

1. Aircraft type training is required to gain a qualification on the aircraft

model that cabin crew members will be assigned on (e.g. B777 or A330). This training should include, but not limited to the following elements, if applicable to the particular aircraft:

(a) Aircraft description.
(b) Cabin configuration (number and distribution of cabin crew seats and number of passenger seats).
(c) Cabin layout (interior design, stowage compartments such as overhead bins, and closets, etc.).
(d) Galleys.
(e) Lavatories.
(f) Flight deck familiarization and egress.
(g) Crew rest areas (normal and emergency egress) and other remote areas.
(h) Exits (type, number, location and operation).
(i) Assisting evacuation means (slide, slide-raft, life raft, rope, etc.).
(j) Safety and emergency equipment, including location and operation.
(k) Aircraft systems relevant to cabin crew duties:
I. Air conditioning, ventilation, and pressurization systems.
II. Communication systems and associated signaling panels.
III. Control panels.
IV. Electrical system (galley, lavatory, in-flight entertainment system, in-seat electrical system, circuit breaker panels, etc.).
V. Evacuation alarm system.
VI. Lighting system (interior, exterior and emergency lights).
VII. Oxygen system (cabin and flight deck).
VIII. Smoke detection system , smoke removal and fire prevention.
IX. Water and waste systems.

2. Emergency locator transmitter.
(a) Normal procedures and the related hands-on and/or simulated exercises.
(b) Abnormal and emergency procedures and the related hands-on and/or simulated exercises.
(c) Design-related elements that may impact on normal and / or emergency procedures (stairs, curtains, social areas, non- forward facing passenger seats, cargo areas if accessible from the passenger compartment during flight, etc.).
I. This training and the associated checking should be accomplished through classroom instruction or CBT as well as hands-on and simulated exercises with a representative training device capable of reproducing the appropriate environment / equipment characteristics, or on an actual aircraft.
II. Aircraft type-specific training covers aircraft elements that are determined by the aircraft manufacturer as aircraft type specific, meaning those that cannot be modified by any operator (e.g. operation of doors / exits, function of aircraft systems, etc.).
III. Aircraft type-specific training, operator's conversion training and their associated checks shall be accomplished through classroom instruction, as well as hands-on and simulated exercises and should be conducted with a representative training device capable of reproducing the appropriate environment, equipment characteristics, or on an actual aircraft. The operator conversion training should use portable safety and emergency equipment and aircraft systems representing the type installed on the operator's aircraft.
IV. Aircraft type will require cabin crew members to undergo an aircraft type specific and operator conversion training. Variant will require cabin crew members to undergo Differences training.
V. Determination of an aircraft as a new type or as a variant for cabin crew

operation.

VI. Aircraft manufacturer selects an aircraft type from its already produced aircraft fleet that will represent the 'base aircraft'. The newly produced aircraft – 'candidate aircraft' – will be compared to the base aircraft in aircraft type specific elements. The candidate aircraft is determined to be a new type for cabin crew operation if the base and the candidate aircraft differ in aircraft type specific elements (aircraft configuration, doors, exits, aircraft systems, normal and emergency operations, e.g. A320 and A330). The newly produced aircraft is also determined to be a new type for cabin crew operation if the aircraft model is first of its kind within the manufacturer's fleet (e.g. A380). The candidate aircraft that has not been determined to be a new type is considered a variant of the base aircraft.

VII. The operator is required to receive comprehensive data about the aircraft from the manufacturer and make it available to cabin crew and to national aviation authorities. The required data should support the operator in the development of aircraft type and differences training programmes for cabin crew, in establishment of operator's procedures, and additional technical information. It is essential that cabin crew members have access to technical information about the aircraft type they operate on to be able to provide flight crew with accurate information when assisting them with safety related matters; it is crucial that flight crew members can rely on information provided by cabin crew in such cases.

Note: Although A 319, 320 & 321 are named as same family, it should be noted that for cabin crew A 321 will be considered a variant due to the differences of exits in the aircraft.

121.ao.3.3 DIFFERENCES TRAINING

1. Differences training is required to gain competence before the cabin crew member is assigned to duty on an aircraft that has differences from the model or series that the crew member is previously qualified on. Examples of different models include an Airbus A320 vs. A340 or a Boeing B737 vs. B777. Examples of different series include a B777-200 vs. B777-300 or an A330-200 vs. A330-300.
2. The training shall include the following as a minimum, as applicable to the particular aircraft:
   (a) Aircraft description.
   (b) Cabin configuration (number and distribution of cabin crew seats and number of passenger seats).
   (c) Cabin layout (interior design, stowage compartments such as overhead bins, and closets, etc.).
   (d) Galleys.
   (e) Lavatories.
   (f) Flight deck familiarization and egress.
   (g) Crew rest areas (normal and emergency egress) and other remote areas.
   (h) Exits (type, number, location and operation).
   (i) Assisting evacuation means (slide, slide-raft, life raft, rope, etc.).
   (j) Safety and emergency equipment, including location and operation.
   (k) Aircraft systems relevant to cabin crew duties:
      1. Air conditioning, ventilation, and pressurization systems.
      2. Communication systems and associated signaling panels.
      3. Control panels.
      4. Electrical system (galley, lavatory, in-flight entertainment system, in-seat electrical system, circuit breaker panels, etc.).

5.Evacuation alarm system.
6.Lighting system (interior, exterior and emergency lights).
7.Oxygen system (cabin and flight deck).
8.Smoke detection system , smoke removal and fire prevention.
9.Water and waste systems.

3.Emergency locator transmitter.

(a) Normal procedures and the related hands-on and/or simulated exercises.
(b) Abnormal and emergency procedures and the related hands-on and/or simulated exercises.
(c) Design-related elements that may impact on normal and / or emergency procedures (stairs, curtains, social areas, non- forward facing passenger seats, cargo areas if accessible from the passenger compartment during flight, etc.).

4.This training and the associated checking should be accomplished through classroom instruction or CBT as well as hands-on and simulated exercises with a representative training device capable of reproducing the appropriate environment / equipment characteristics, or on an actual aircraft.

121.ao.3.4 AIRCRAFT VISIT

1. The purpose of an aircraft visit is to familiarize each cabin crew member with the aircraft environment and its equipment. Each cabin crew trainee having no previous comparable operating experience shall participate in a visit to an aircraft prior to participating on a familiarization flight. The visit is typically conducted on board a stationary aircraft. Aircraft visits shall be conducted in accordance with ECARs by a certified instructor / examiner with a syllabus described in the operator's operations manual. The aircraft visit should provide an overview of the aircraft's exterior, interior and systems including the following, if applicable to the particular aircraft:

(a) Cabin crew stations.
(b) Cabin layout (interior design, stowage compartments such as overhead bins, and closets, etc.).
(c) Galleys.
(d) Lavatories.
(e) Flight deck familiarization and egress.
(f) Crew rest areas and any other remote areas.
(g) Safety and emergency equipment.
(h) Exits (location and their environment).
(i) Assisting evacuation means (location and stowage).
(j) Aircraft systems relevant to cabin crew duties:
I. Air conditioning, ventilation, and pressurization systems.
II. Communication systems and associated signaling panels.
III. Control panels.
IV. Electrical system (galley, lavatory, in-flight entertainment system, in-seat
V. electrical system, circuit breaker panels, etc.).
VI. Evacuation alarm system.
VII. Lighting system (interior, exterior and emergency lights).
VIII. Oxygen system (cabin and flight deck).
IX. Smoke detection system , smoke removal and fire prevention.
X. Water and waste systems.
(k) Emergency locator transmitter.
(l) Cargo areas if accessible from the passenger compartment during flight.

121.ao.3.5 FAMILIARIZATION FLIGHTS / OPERATING EXPERIENCE

1.A familiarization flight is also referred to by the term "Operating experience". Each

2. cabin crew trainee without previous comparable operating experience in the aircraft type shall conduct familiarization flights.
3. The familiarization flight shall be completed within 360 days of fulfilling the requirements of the ground-training portion of the operator's training programme. During the familiarization flight, the cabin crew trainee shall not be assigned as a required crew member. The trainee should be involved in safety-related pre-flight, in-flight, pre-landing and post-flight duties.
4. Familiarization flights shall form part of the training record of each cabin crew member and each sector of such flights shall be at least 01 hour.
5. Familiarization flights shall be carried out on all different types of aircraft in the fleet prior to cabin crewmember operating such aircraft. Different types are categorized by the type of doors & evacuation devices of the aircraft. Eg; A319/320/321 1 type, A330/340 1 type, B 747 1 type, B 737 1 type.

121.ao.3.6 RECURRENT/ ANNUAL TRAINING

1. Recurrent training has a 12-month validity period counted from the end of the month when the check was taken (e.g. training and checking completed on 10 December 2017, validity until 31 December 2018).The validity of the training expires on the last day of the month of previous training.
2. Recurrent training is conducted annually to ensure the maintenance of competencies, knowledge and skills through a series of hands-on exercises, simulated exercises, written exams, etc. for general training elements such as first-aid as well as for training elements relevant to each aircraft type on which the cabin crew member will be assigned duties. It may also be provided to familiarize crew members with new requirements, procedures and/or equipment introduced since their last training. Recurrent training ensures that cabin crew members, by practicing most competencies and skills, maintain the level of performance required for their duties and responsibilities.
3. ECAA requires all cabin crewmembers to undergo recurrent training as specified in this (IS) . For recurrent training, the content may vary in regards to the competency elements covered, the conditions used for training as well as the knowledge and skills that may be assessed.
4. The content of recurrent training must be covered within the cycle defined as below by the ECAA:

(a) Safety & Emergency Procedures	12 months
(b) Dangerous Goods	24 months
(c) Aviation Security	12 months
(d) Slide Drill	24 months
(e) Ditching Drill	24 months
(f) Fire Drill (Actual)	Once
(g) Fire Drill (Simulated)	24 months
(h) First Aid & Cabin Health	12 months
(i) SMS(Safety Management	36 months
(j) Emergency Drill (Joint)	36 months
(k) CRM	36 months

Note: CRM major topics are covered over a period not exceeding 36 months

5. Recurrent training shall include the following, as a minimum:
   (a) Exits (type, number, location and operation).
   (b) Assisting evacuation means (slide, slide-raft, life raft, rope, etc.).
   (c) Safety and emergency equipment, including location and operation.
   (d) Aircraft systems relevant to the cabin crew duties.
   (e) Normal procedures and the related hands-on and/or simulated exercises.
   (f) Abnormal and emergency procedures and the related hands-on and / or simulated

exercises, including:

I. Firefighting (including a firefighting simulated as required every 24 months).
II. Smoke removal.
III. Decompression;
IV. Evacuation on land and on water (including a dry drill, as required every 36 months); and

(g) Crew resource management.
(h) Passenger handling and crowd control.
(i) Aviation security procedures.
(j) First aid (as required every 12 months).
(k) Dangerous goods.
(l) Review of recent incidents and / or accidents pertinent to the operator flight and cabin crew member incapacitation.

6. The training objectives as specified in the operator's training manual, which define the scope of knowledge, shall be verified either by examination, or by other approved equivalent means.
7. As annual training focuses upon the verification of knowledge and skills, an examination or drill failure, indicates a lack of knowledge or skill, that will need to be reinforced through instruction before a crew member retakes an examination or repeats a drill.
8. This training and the associated checking should be accomplished through classroom instruction and / or CBT, and hands-on and simulated exercises with a representative training device capable of reproducing the appropriate environment / equipment characteristics, or on an actual aircraft.

121.ao.3.7 REQUALIFICATION TRAINING

1. Designed to ensure that the trainee, who is returning to work following an absence during which qualifications lapsed, receives sufficient instruction to enable qualifications to be regained by successful completion of this training.
2. Requalification programmes should be defined for cabin crew members whose qualifications have expired for any reason (e.g. prolonged absence from flying duties), as part of the process to regain qualification enabling the cabin crew member to perform the required duties and responsibilities. This is based on the applicable validity period(s), namely the time elapsed since the cabin crew member's last required training. The cabin crew member may need to follow a specific series of steps in order to regain qualification.
3. The cabin crewmember shall requalify as provided in ECAR 121.428 (b)(2).
4. This training and the associated checking should be accomplished through classroom instruction, and / or CBT, as well as hands-on and simulated exercises with a representative training device capable of reproducing the appropriate environment and the equipment characteristics, or on an actual aircraft.
5. Requalification programmes are provided in this (IS) to this appendix.

This will include:

- Verification of, and / or review of instruction and practice (where necessary) of those subjects which are required for requalification training program content and which will not be included in the annual training.
- Update on company's operating policy and procedures, company operations manual, cabin crewmember safety and emergency procedures manual, and pre-flight safety responsibilities.
- Equipment and procedures training for any equipment or operational procedures introduced by the air operator during the term of absence.

The required subject content for requalification training is based upon initial training subject matter content. However, the air operator has some flexibility regarding the

scope of the material covered. Using the initial training subject matter content as a base level, the responsibility is on the air operator to ensure that the trainee has sufficient knowledge and skills levels to enable the regaining of qualifications through successful completion of annual training.

121.ao.3.8 STANDERD STRUCTURE OF TRAINING PROGRAMME

Following each training objective is a list of subject areas (or scope of knowledge) with associated information points which constitute the minimum core content of information that shall be incorporated into the respective program, where applicable to the air operator's operation, in order to attain the prescribed objective.

During Initial Training, the air operator shall verify the trainee's knowledge and skills through competency based training. The development of a competency-based approach to cabin crew safety training is to ensure that cabin crew members are proficient to perform their duties and responsibilities, and with the goal of establishing an international baseline for cabin crew competencies.

During each subsequent annual training, the air operator is expected to verify knowledge in each of the subject areas, not necessarily each of the information points. Knowledge verification by written exam or other approved equivalent means, in each of the subject areas may vary from time to time.

An operator may verify knowledge aspects during the conduct of cabin crew familiarization flights. Each sector of such flights shall be more than 01 hour.

Familiarization flights shall form part of the training record of each cabin crew (competency check).

121.ao.3.10DEVELOPMENT

Training program instruction may be developed and delivered using teaching methods such as: demonstration, classroom lectures, computer based training (CBT); audio-visual presentations, or other methods revised by the air operator provided that the method(s) used ensures that each trainee or crew member is adequately trained in accordance with the standard. Training programmes may be organized in a different order than that presented in this manual and drills may be combined. (E.g. life preserver drill, life raft drill and ditching drill)

121.an.3.11 SAFETY

Training that involves safety and emergency drills shall be as realistic as possible; however, there are potential dangers associated with these aspects of training. Air operators shall take into account the potential for injury during training and apply appropriate safeguards to minimize this risk.

121.ao.3.12SAFETY TRAINING PERSONNEL

Safety training for cabin crew members shall be conducted using only instructors / examiners approved by the ECAA as specified.

121.ao.13 CHECKING

The operator shall ensure that each cabin crew member undergoes on board inflight competency check once every year covering the training received in order to verify that he/she satisfactorily performs the duties and responsibilities of a cabin crew member on any of the types of aircraft he/she is certified

Appendix P
Location of an aeroplane in distress

1. Purpose and scope

Location of an aeroplane in distress aims at establishing, to a reasonable extent, the location of an accident site within a 6 NM radius.

2. Operation

2.1 An aeroplane in distress shall automatically activate the transmission of information from which its position can be determined by the operator and the position information shall contain a time stamp. It shall also be possible for this transmission to be activated manually. The system used for the autonomous transmission of position information shall be capable of transmitting that information in the event of aircraft electrical power loss, at least for the expected duration of the entire flight.

Note.— Guidance on the location of an aeroplane in distress is provided in Attachment K to annex 6 part1.

2.2 An aircraft is in a distress condition when it is in a state that, if the aircraft behavior event is left uncorrected, can result in an accident. Autonomous transmission of position information shall be active when an aircraft is in a distress condition. This will provide a high probability of locating an accident site to within a 6 NM radius. The operator shall be alerted when an aircraft is in a distress condition with an acceptable low rate of false alerts. In case of a triggered transmission system, initial transmission of position information shall commence immediately or no later than five seconds after the detection of the activation event.

Note 1.— Aircraft behavior events can include, but are not limited to, unusual attitudes, unusual speed conditions, collision with terrain and total loss of thrust/propulsion on all engines and ground proximity warnings.

Note 2.— A distress alert can be triggered using criteria that may vary as a result of aircraft position and phase of flight. Further guidance regarding in-flight event detection and triggering criteria may be found in the EUROCAE ED-237, Minimum Aviation System Performance Specification (MASPS) for Criteria to Detect In-Flight Aircraft Distress Events to Trigger Transmission of Flight Information.

2.3 When an aircraft operator or an air traffic service unit (ATSU) has reason to believe that an aircraft is in distress, coordination shall be established between the ATSU and the aircraft operator.

2.4 When autonomous transmission of position information has been activated, it shall only be able to be deactivated using the same mechanism that activated it.

2.5 The accuracy of position information shall, as a minimum, meet the position accuracy requirements established for ELTs.

Appendix Q

Minimum requirements for supplemental oxygen for —Oxygen pressurized aeroplanes during and following emergency descent

Table 1

a	b
SUPPLY FOR:	DURATION AND CABIN PRESSURE ALTITUDE
1. All occupants of flight deck seats on flight deck duty	Entire flight time when the cabin pressure altitude exceeds 13 000 ft and entire flight time when the cabin pressure altitude exceeds 10 000 ft but does not exceed 13 000 ft after the first 30 minutes at those altitudes, but in no case less than: (i) 30 minutes for aeroplanes certificated to fly at altitudes not exceeding 25 000 ft (Note 2) (ii) two hours for aeroplanes certificated to fly at altitudes more than 25 000 ft (Note 3).
2. All required cabin crew members	Entire flight time when cabin pressure altitude exceeds 13 000 ft but not less than 30 minutes (Note 2), and entire flight time when cabin pressure altitude is greater than 10 000 ft but does not exceed 13 000 ft after the first 30 minutes at these altitudes
3. 100 % of passengers (Note 5)	Entire flight time when the cabin pressure altitude exceeds 15 000 ft but in no case less than 10 minutes (Note 4).
4. 30 % of passengers (Note 5)	Entire flight time when the cabin pressure altitude exceeds 14 000 ft but does not exceed 15 000 ft
5. 10 % of passengers (Note 5).	Entire flight time when the cabin pressure altitude exceeds 10 000 ft but does not exceed 14 000 ft after the first 30 minutes at these altitudes

Note 1: The supply provided must take account of the cabin pressure altitude and descent profile for the routes concerned.
Note 2: The required minimum supply is that quantity of oxygen necessary for a constant rate of s maximum certificated operating altitude to 10 000 ft in 10 minutes ′descent from the aeroplane and followed by 20 minutes at 10 000 ft.
Note 3: The required minimum supply is that quantity of oxygen necessary for a constant rate of s maximum certificated operating altitude to 10 000 ft in 10 minutes ′descent from the aeroplane and followed by 110 minutes at 10 000 ft. The oxygen required in 121.337(b)(7) may be included in determining the supply required.
Note 4: The required minimum supply is that quantity of oxygen necessary for a constant rate of descent from the airplane’s maximum certificated operating altitude to 15 000 ft in 10 minutes.
Note 5: For the purpose of this table “passengers” means passengers actually carried and includes infants.

Supplemental oxygen for non-pressurized aeroplanes

Table 2

a	b
SUPPLY FOR:	DURATION AND CABIN PRESSURE ALTITUDE
1. All occupants of flight deck seats on flight deck duty	Entire flight time at pressure altitudes above 10 000 ft
2. All required cabin crew members	Entire flight time at pressure altitudes above 13 000 ft and for any period exceeding 30 minutes at pressure altitudes above 10 000 ft but not exceeding 13 000 ft.
3. 100 % of passengers (See Note)	Entire flight time at pressure altitudes above 13 000 ft.
4. 10 % of passengers (See Note)	Entire flight time after 30 minutes at pressure altitudes greater than 10 000 ft but not exceeding 13 000 ft

means passengers actually carried and includes ″passengers‟Note: For the purpose of this table infants under the age of 2.

APPENDIX R
ARTICLE 83 bis AGREEMENT SUMMARY

Note.— Chapter 6, 6.1.5.1, requires a certified true copy of the agreement summary to be carried on board.

1. Purpose and scope

Recommendation.— The Article 83 bis agreement summary should contain the information in the template at paragraph 2, in a standardized format.

1. Article 83 bis agreement summary for commercial air transport

ARTICLE 83 bis AGREEMENT SUMMARY		
Title of the Agreement:		
State of Registry		Focal point:
State of the principal location of a general aviation operator:		Focal point:
Date of signature:	By State of Registry1 :	
	By State of the principal location of a general aviation operator1 :	
Duration	Start Date1 :	End Date (if applicable)2 :
Languages of the Agreement		
ICAO Registration No.:		
Umbrella Agreement (if any) with ICAO Registration number:		

Chicago Convention	ICAO Annexes affected by the transfer to the State of the principal location of a general aviation operator of responsibility in respect of certain functions and duties		
Article 12: Rules of the Air	Annex 2, all chapters	Yes ☐	
		No ☐	
Article 30 a): Aircraft radio equipment	Radio Station Licence	Yes ☐	
		No ☐	
Articles 30 b) and 32 a): Personnel Licensing	Annex 1, Chapters 1, 2, 3 and 6 and Annex 6 Part I, Radio Operator or Part III, section II, Composition of the flight crew (radio operator) and/or Part II, Qualifications and/or Flight crew member licensing or Part III, Section III, Qualifications	No ☐	Annex 6: [Specify Part and paragraph]3
Article 31: Certificates of Airworthiness	Annex 6 Part I or Part III, Section II	Yes ☐	Specify Part and chapters]3
		No ☐	
	Annex 6 Part II or Part III, Section III	Yes ☐	Specify Part and chapters]3
		No ☐	
	Annex 8 Part II, Chapters 3 and 4	Yes ☐	[Specify chapters]3
		No ☐	

Aircraft affected by the transfer of responsibilities to the State of the Operator					
Aircraft make, model, series	Nationality and Registration marks	Serial No	AOC # (Commercial air transport)	Dates of transfer of responsibilities	
				From1	To (if applicable)2

Notes.—

1. dd/mm/yyyy.
2. dd/mm/yyyy or N/A if not applicable.
3. Square brackets indicate information that needs to be provided

2. Article 83 bis agreement summary for general aviation

ARTICLE 83 bis AGREEMENT SUMMARY		
Title of the Agreement:		
State of Registry		Focal point:
State of the principal location of a general aviation operator:		Focal point:
Date of signature:	By State of Registry1 :	
	By State of the principal location of a general aviation operator1 :	
Duration	Start Date1 :	End Date (if applicable)2 :
Languages of the Agreement		
ICAO Registration No.:		
Umbrella Agreement (if any) with ICAO Registration number:		

Chicago Convention	ICAO Annexes affected by the transfer to the State of the principal location of a general aviation operator of responsibility in respect of certain functions and duties		
Article 12: Rules of the Air	Annex 2, all chapters	Yes ☐	
		No ☐	
Article 30 a): Aircraft radio equipment	Radio Station Licence	Yes ☐	
		No ☐	
Articles 30 b) and 32 a): Personnel Licensing	Annex 1, Chapters 1, 2, 3 and 6 and Annex 6 Part I, Radio Operator or Part III, section II, Composition of the flight crew (radio operator) and/or Part II, Qualifications and/or Flight crew member licensing or Part III, Section III, Qualifications	No ☐	Annex 6: [Specify Part and paragraph]3
Article 31: Certificates of Airworthiness	Annex 6 Part I or Part III, Section II	Yes ☐	Specify Part and chapters]3
		No ☐	
	Annex 6 Part II or Part III, Section III	Yes ☐	Specify Part and chapters]3
		No ☐	
	Annex 8 Part II, Chapters 3 and 4	Yes ☐	[Specify chapters]3
		No ☐	

Aircraft affected by the transfer of responsibilities to the State of the Operator					
Aircraft make, model, series	Nationality and Registration marks	Serial No	AOC # (Commercial air transport)	Dates of transfer of responsibilities	
				From1	To (if applicable)2

Notes.—

1. dd/mm/yyyy.
2. dd/mm/yyyy or N/A if not applicable.
3. Square brackets indicate information that needs to be provided