

CURAÇAO CIVIL AVIATION REGULATIONS

PART 8—OPERATIONS

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CCAR PART 8—OPERATIONS

8.1 GENERAL

8.1.1.1 APPLICABILITY

- (a) Part 8 prescribes the requirements for:
 - (1) Operations conducted by a flight crew member certificated in Curaçao while operating aircraft registered in Curaçao;
 - (2) Operation of foreign aircraft registered in another State by Curaçao AOC holders; and
 - (3) Operation of aircraft within Curaçao by flight crew or AOC holders of another State.
- (b) For operations outside of Curaçao, all pilots and operators certificated in Curaçao shall comply with these requirements unless compliance would result in a violation of the laws of the State in which the operation is conducted.

Note 1: Where a particular requirement is applicable only to a particular segment of aviation operations, it will be identified by a reference to those particular operations, such as “commercial air transport” or “small non-turbojet or turbofan aeroplanes.”

- (1) Note 2: Those specific subsections not applicable to operators of other States will include the phrase “This requirement is not applicable to operators of other States.”

8.1.1.2 DEFINITIONS

- (a) Definitions concerning the Subparts other than 8.12 are contained in Part 1.
- (c) For the purposes of Subpart 8.12, the following definitions shall apply:
 - (1) **Augmented flight crew.** A flight crew which comprises more than the minimum number required for the operation of the aeroplane and in which each flight crew member can leave his/her post for the purpose of in-flight rest, and be replaced by another appropriately qualified flight crew member.
 - (2) **Block time.** The time between an aeroplane first moving from its parking place for the purpose of taking off until it comes to rest on the designated parking position and all engines or propellers are stopped.
 - (3) **Break.** means a period of time within a flight duty period, shorter than a rest period, counting as duty and during which a crew member is free of all tasks.
 - (4) **Duty.** Any task that a crew member is required to carry out associated with the business of an AOC holder.
 - (5) **Duty period.** A period which starts when a crew member is required by the operator to report for a duty and ends when the crew member is free from all duties, including post-flight duty.
 - (6) **Flight duty period.** A flight duty period (FDP) is any time during which a person operates in an aircraft as a member of its crew. The FDP starts when the crew member is required by

the operator to report for a flight or a series of flights; it finishes at the end of the last flight on which he/she is an operating crew member.

- (7) **Home base.** The location nominated by the operator to the crew member from where the crew member normally starts and ends a duty period or a series of duty periods and where, under normal conditions, the operator is not responsible for the accommodation of the crew member concerned.
- (8) **Local day.** A 24 hour period commencing at 00.00 local time.
- (9) **Local night.** A period of eight hours falling between 22.00 and 08.00 local time.
- (10) **A single day free of duty.** A single day free of duty shall include two local nights. A rest period may be included as part of the day off.
- (11) **Operating crew member.** A crew member who carries out his/her duties in an aircraft during a flight or during any part of a flight.
- (1) **Positioning.** The transferring of a non-operating crew member from place to place, at the behest of the operator, excluding travelling time. Travelling time is defined as: time from home to a designated reporting place and vice versa;
- (12) time for local transfer from a place of rest to the commencement of duty and vice versa.
- (13) **Reporting Time.** The time at which a crew member is required by the operator to report for any duty.
- (14) **Rostered/Planned Duty.** A duty period, or series of duty periods, with stipulated start and finish times, notified by the company to crew in advance.
- (15) **Rest period.** An uninterrupted and defined period of time during which a crew member is free from all duties and airport standby. A crew member shall not be disturbed during the minimum rest period required before reporting for a flight duty period.
- (16) **Standby.** A defined period of time during which a crew member is required by the operator to be available to receive an assignment for a flight, positioning or other duty without an intervening rest period.
- (17) **Suitable Accommodation.** For the purpose of standby, split duty, and rest, A well-furnished separate bedroom for each crew member which is subject to minimum noise, is well ventilated, and has the facility to control the levels of light intensity and temperature and access to food and drink.
- (18) **Travelling.** Time spent by a crew member transferring between his/her place of rest and the place of reporting.
- (19) **Window of Circadian Low (WOCL).** The Window of Circadian Low (WOCL) is the period between 02.00 and 05.59. Within a band of three time zones the WOCL refers to home base time. Beyond these three time zones the WOCL refers to home base time for the first 48 hours after departure from home base time zone, and to local time thereafter.

8.1.1.3 ABBREVIATIONS

(a) The following abbreviations are used in Part 8:

- (1) **AAC** – all aircraft
- (2) **ACAS** – airborne collision avoidance system

- (3) **AD** – Airworthiness Directive
- (4) **ADS** – automatic dependent surveillance
- (5) **ADS-B** – automatic dependent surveillance – broadcast
- (6) **ADS-C** – automatic dependent surveillance – contract
- (7) **AGL** – above ground level
- (8) **AIP** – Aeronautical Information Publication
- (9) **AMO** – approved maintenance organisation
- (10) **AMSL** – above mean sea level
- (11) **AMT** – aviation maintenance technician
- (12) **AOC** – air operator certificate
- (13) **APU** – auxiliary power unit
- (14) **ATC** – air traffic control
- (15) **ATPL** – airline transport pilot licence
- (16) **ATS** – air traffic service
- (17) **ATZ** – Aerodrome Traffic Zone
- (18) **CAT** – Category
- (19) **CDL** – configuration deviation list
- (20) **CG** – centre of gravity
- (21) **CP** – co-pilot
- (22) **CPL** – commercial pilot licence
- (23) **CRM** – crew resource management
- (24) **CRT** – cathode ray tube
- (25) **CVR** – cockpit voice recorder
- (26) **CVS** – combined vision system
- (27) **DH** – decision height
- (28) **EDTO** – extended diversion time operation
- (29) **ETA** – estimated time of arrival
- (30) **EVS** – enhanced vision system
- (31) **FAS** – final approach segment
- (32) **FDP** – Flight Duty Period
- (33) **FDR** – flight data recorder
- (34) **FE** – flight engineer
- (35) **FL** – flight level
- (36) **FN** – flight navigator
- (37) **FOO** – flight operations officer

- (38) **FRMS** – fatigue risk management system
- (39) **FSTD** – flight simulation training device
- (40) **GPS** – global positioning system
- (41) **HUD** – head-up display
- (42) **IAP** – instrument approach procedure
- (43) **ICAO** – International Civil Aviation Organization
- (44) **IFR** – instrument flight rules
- (45) **ILS** – instrument landing system
- (46) **IMC** – instrument meteorological conditions
- (47) **INS** – inertial navigation system
- (48) **IS** – Implementing Standards
- (49) **LDA** – localiser-type directional aid
- (50) **LOC** – localiser
- (51) **LORAN** – long-range navigation
- (52) **LVO** – low-visibility operations
- (53) **LVTO** – low visibility take-off
- (54) **MDA** – minimum descent altitude
- (55) **MDH** – minimum descent height
- (56) **MEA** – minimum en-route altitude
- (57) **MEL** – minimum equipment list
- (58) **MMEL** – master minimum equipment list
- (59) **MNPS** – minimum navigation performance specifications
- (60) **MOCA** – minimum obstruction clearance altitude
- (61) **MSL** – mean sea level
- (62) **NAT HLA** – North Atlantic high level airspace
- (63) **NM** – nautical miles
- (64) **NOTAM** – Notice to Airmen
- (65) **NPA** – non-precision approach
- (66) **OCA** – obstacle clearance altitude
- (67) **OCA/H** – obstacle clearance altitude/height
- (68) **OCH** – obstacle clearance height
- (69) **OM** – Operations Manual
- (70) **PA** – precision approach
- (71) **PBN** – performance-based navigation
- (72) **PIC** – pilot-in-command

- (73) **PBE** – protective breathing equipment
- (74) **RFFS** – rescue and fire fighting service
- (75) **RNAV** – area navigation
- (76) **RP** – remote pilot
- (77) **RPA** – remotely piloted aircraft
- (78) **RPAS** – remotely piloted aircraft system
- (79) **RPS** – remote pilot station
- (80) **RVR** – runway visual range
- (81) **RVSM** – reduced vertical separation minimum
- (82) **SCCM** – senior cabin crew member
- (83) **SDF** – simplified directional facility
- (84) **SM** – statute miles
- (85) **SSR** – secondary surveillance radar
- (86) **SVS** – synthetic vision system
- (87) **TACAN** – tactical air navigation system
- (88) **UTC** – coordinated universal time
- (89) **VFR** – visual flight rules
- (90) **VMC** – visual meteorological conditions
- (91) **VSM** – vertical separation minimum
- (92) **V₁** – take-off decision speed
- (93) **V_{mo}** – maximum operating speed
- (94) **VOR** – VHF omnidirectional radio range
- (95) **V_{so}** – stalling speed or the minimum steady flight speed in the landing configuration
- (96) **WOCL** - Window of Circadian Low

8.2 GENERAL OPERATIONS REQUIREMENTS

8.2.1 AIRCRAFT REQUIREMENTS

8.2.1.1 REGISTRATION MARKINGS

- (a) No person may operate a Curaçao-registered aircraft unless the aircraft displays the proper markings as prescribed in Part 4 of these regulations.

8.2.1.2 CIVIL AIRCRAFT AIRWORTHINESS

- (b) No person may operate a civil aircraft unless it is in an airworthy condition.
- (c) Each PIC of a civil aircraft shall determine whether that aircraft is in a condition for safe flight.

- (d) Each PIC of a civil aircraft shall discontinue a flight as soon as practicable when an unairworthy mechanical, electrical, or structural condition occurs.

8.2.1.3 SPECIAL CERTIFICATE OF AIRWORTHINESS OPERATIONAL RESTRICTIONS

- (a) No person may operate an aircraft with a special certificate of airworthiness except as provided in the limitations issued with that certificate.

8.2.1.4 AIRCRAFT INSTRUMENTS AND EQUIPMENT

- (a) No person may operate an aircraft unless the aircraft is equipped with the required instruments and navigation equipment appropriate to the type of operation conducted and the route being flown.

Note: The instruments and equipment required for specific operations are listed in Part 7 of these regulations.

8.2.1.5 INOPERATIVE INSTRUMENTS AND EQUIPMENT

- (a) No person may take off an aircraft with inoperative instruments or equipment installed, except as authorised by the Authority.
- (b) An AOC holder shall not operate a multi-engine aircraft with inoperative instruments and equipment installed unless the following conditions are met:
 - (1) An approved MEL exists for that aircraft.
 - (2) The Authority has issued the AOC holder operations specifications authorising operations in accordance with an approved MEL. The flight crew shall have direct access at all times before flight to all the information contained in the approved MEL through printed or other means approved by the Authority in the AOC holder's operations specifications. An approved MEL, as authorised by the operations specifications, constitutes an approved change to the type design without requiring recertification.
 - (3) The approved MEL shall:
 - (i) Be prepared in accordance with the limitations specified in paragraph 8.2.1.5(c) of this subsection; and
 - (ii) Provide for the operation of the aircraft with certain instruments and equipment in an inoperative condition.
 - (4) Records identifying the inoperative instruments and equipment and the information required by paragraph 8.2.1.5(b)(3)(ii) of this subsection shall be available to the pilot.
 - (5) The aircraft is operated under all applicable conditions and limitations contained in the MEL and the operations specifications authorising the use of the MEL.
- (c) The following instruments and equipment shall 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 that are essential for safe operations under all operating conditions;
 - (2) Instruments and equipment required by an AD to be in operable condition unless the AD provides otherwise; and

- (3) Instruments and equipment required for specific operations under Parts 7, 8, and/or 9 of these regulations.
- (d) Notwithstanding paragraphs 8.2.1.5(c)(1) and (3) of this subsection, an aircraft with inoperative instruments or equipment may be operated under a special flight permit under 5.3.1.7 of these regulations.
- (e) In situations where no MMEL is available and no MEL is required for the specific aircraft operation under these regulations, operations in an aircraft with inoperative instruments and equipment installed may commence provided the following conditions are met:
 - (1) The inoperative instruments and equipment shall not be:
 - (i) Part of the day VFR instruments and equipment prescribed in Part 7 of these regulations;
 - (ii) Required on the aircraft's equipment list or the operations equipment list for the type of flight operation being conducted;
 - (iii) Required by Part 7 for the specific type of flight operation being conducted; or
 - (iv) Required to be operational by an AD.
 - (v) The inoperative instruments and equipment shall be:
 - (vi) Determined by the PIC not to be a hazard to safe operation;
 - (vii) Deactivated and placarded "Inoperative"; and
 - (viii) Removed from the aircraft, the flight deck control placarded, and the maintenance recorded in accordance with Part 5 of these regulations.
- (f) If deactivation of the inoperative instrument or equipment involves maintenance, it shall be accomplished and recorded in accordance with Part 5 of these regulations.

Note: The instruments and equipment required for specific operations are listed in Part 7 of these regulations.

8.2.1.6 CIVIL AIRCRAFT FLIGHT MANUAL, MARKING, AND PLACARD REQUIREMENTS

- (a) No person may operate a Curacao registered civil aircraft unless there is available in the aircraft:
 - (1) A current, approved Aircraft Flight Manual or Rotorcraft Flight Manual; or
 - (2) An Aircraft Operating Manual approved by the Authority for the AOC holder; and
 - (3) If no Aircraft Flight Manual or Rotorcraft Flight Manual exists, approved manual material, markings, and placards, or any combination thereof, that provide the PIC with the necessary limitations for safe operation.
- (b) No person may operate a civil aircraft within or over Curacao without complying with the operating limitations specified in the approved Aircraft Flight Manual or Rotorcraft Flight Manual, markings, and placards, or as otherwise prescribed by the Authority of the aircraft's State of Registry.
- (c) Each Aircraft Flight Manual or Rotorcraft Flight Manual shall be updated by implementing changes made mandatory by the State of Registry.
- (d) Each operator shall display in the aircraft all placards, listings, and instrument markings, or combinations thereof, containing those operating limitations prescribed for visual presentation by the certifying Authority for the aircraft's State of Registry.

8.2.1.7 REQUIRED AIRCRAFT AND EQUIPMENT INSPECTIONS

- (a) Unless otherwise authorised by the Authority, no person may operate a Curacao -registered civil aircraft unless it has had the appropriate inspections required by 8.3 of this part.

8.2.1.8 DOCUMENTS TO BE CARRIED ON BOARD AIRCRAFT – ALL OPERATIONS

- (a) Except as provided in 8.2.1.6 of this part, no person may operate a civil aircraft in commercial air transport operations unless the following current and approved documents are carried on board the aircraft:

- (1) Certificate of aircraft registration issued to the owner;
- (2) Certificate of airworthiness;
- (3) Aircraft journey log;
- (4) Insurance certificate
- (5) Aircraft radio licence;
- (6) List of passenger names and points of embarkation and destination, if applicable;
- (7) Cargo manifest, including special loads information;
- (8) Aircraft technical log;
- (9) AOC, if required;
- (10) Noise certificate, if required;
- (11) Aircraft Flight Manual or Rotorcraft Flight Manual, as applicable;
- (12) Part(s) of the OM relevant to operation(s) conducted;
- (13) MEL;
- (14) CAT II or CAT III manual, as applicable;
- (15) Operational flight plan, for all international flights;
- (16) Filed ATC flight plan;
- (17) NOTAMs briefing documentation;
- (18) Meteorological information;
- (19) Mass and balance documentation;
- (20) Roster of special situation passengers;

Note: "Special situation passengers" include armed security personnel, deportees, persons in custody, and persons with special medical needs.

- (21) Maps and charts for routes of proposed flight or possibly diverted flights;
- (22) Forms for complying with the reporting requirements of the Authority and the AOC holder;
- (23) For international flights, a general declaration for customs;
- (24) Appropriate licences for each member of the flight crew;
- (25) Copy of the release to service, if any, in force with respect to the aircraft;
- (26) Search and rescue information, for international flights;

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- (27) A certified true copy of the agreement summary of the Article 83 bis agreement entered into between the State of Registry and the State of the Operator, in either an electronic or hard copy format. When the summary is issued in a language other than English, an English translation shall be included; and
 - (28) Any documentation that may be required by the Authority or States concerned with a proposed flight.
- (b) Except as provided in 8.2.1.6 of this part, no person may operate a civil aircraft in general aviation operations or aerial work operations unless the following current and approved documents are carried on board the aircraft:
- (1) Certificate of aircraft registration issued to the owner;
 - (2) Certificate of airworthiness;
 - (3) Insurance certificate
 - (4) Aircraft journey log;
 - (5) Aircraft radio licence, for international flights;
 - (6) List of passenger names and points of embarkation and destination, if applicable;
 - (7) Cargo manifest, including special loads information;
 - (8) Appropriate licences for each member of the flight crew;
 - (9) Copy of the release to service, if any, in force with respect to the aircraft, or technical log, as applicable;
 - (10) Noise certificate, if required;
 - (11) Aircraft Flight Manual or Rotorcraft Flight Manual, as applicable;
 - (12) CAT II or CAT III manual, as applicable;
 - (13) Operational flight plan, for all international flights;
 - (14) NOTAMs briefing documentation;
 - (15) Maps and charts for routes of proposed flight or possibly diverted flights;
 - (16) Forms for complying with the reporting requirements of the Authority;
 - (17) For international flights, a general declaration for customs;
 - (18) Aerial work certificate for aerial work operators;
 - (19) Search and rescue information, for international flights; and
 - (20) Any documentation that may be required by the Authority or States concerned with a proposed flight.

Note 1: Guidance concerning the transfer of responsibilities by the State of Registry to the State of the Operator in accordance with Article 83 bis is contained in ICAO Doc 10059, Manual on the Implementation of Article 83 bis of the Convention on International Civil Aviation.

Note 2: The document attesting noise certification shall state the Standards in ICAO Annex 16, Volume I. The document may be contained in any document, carried on board, approved by the State of Registry.

8.3 AIRCRAFT CONTINUING AIRWORTHINESS AND INSPECTION REQUIREMENTS

8.3.1.1 APPLICABILITY

- (a) This Subpart prescribes the rules governing the continuing airworthiness and inspection of Curaçao registered civil aircraft operating within or outside Curaçao.
- (b) Where any aircraft, not registered in Curaçao and operating under an inspection programme approved or accepted by the State of Registry, does not have the equipment required by Curaçao, for operations within Curaçao, the owner or operator shall ensure that such equipment is installed and inspected in accordance with the requirements of the State of Registry, acceptable to the Authority before operation of that aircraft in Curaçao.
- (c) Annual inspections and annual inspections plus 100-hour inspections in 8.3.1.4 of this part do not apply to:
 - (1) An aircraft that carries a special flight permit, a current experimental certificate, or a provisional certificate of airworthiness;
 - (2) An aircraft subject to the requirements of progressive inspections in 8.3.1.5 of this part;
 - (3) An aircraft subject to the requirements of continuing airworthiness inspections in 8.3.1.6 of this part; and
 - (4) A large aeroplane, a turbine-powered multi-engine aeroplane, or a turbine-powered rotorcraft when the operator elects to inspect that rotorcraft in accordance with the requirements of continuing airworthiness inspections in 8.3.1.6 of this part.

8.3.1.2 GENERAL

- (a) The registered owner or operator of an aircraft shall maintain that aircraft in an airworthy condition, including compliance with all ADs.
- (b) No person may perform maintenance, overhaul, modifications, repairs, or inspections on an aircraft except as prescribed in this subpart and other applicable regulations, including Part 5 of these regulations.
- (c) No person may operate an aircraft for which a manufacturer's Aircraft Maintenance Manual or instructions for continuing airworthiness have been issued that contain an airworthiness limitations section unless the mandatory replacement times, inspection intervals, and related procedures set forth in operations specifications approved by the Authority under Part 9 of these regulations for AOC holders, or in accordance with an inspection programme approved under this subsection, are complied with.
- (d) The owner or operator shall use one of the following inspection programmes, as appropriate for the aircraft and the type of operation:
 - (1) Annual;
 - (2) Annual/100-hour;
 - (3) Progressive; or
 - (4) Continuing airworthiness maintenance programme.
- (e) No aircraft shall be approved for return to service after inspection unless the replacement times for life-limited parts specified in the aircraft specification type certificate data sheets are complied with

and the aircraft, including aeronautical products and survival and emergency equipment, is inspected in accordance with the selected inspection programme.

- (f) Each person wishing to establish or change an approved inspection programme shall submit the programme for approval by the Authority and shall include in writing:
 - (1) Instructions and procedures for the conduct of inspection for the particular make and model of aircraft, including necessary tests and checks. The instructions shall set forth in detail the parts and areas of the aeronautical products, including survival and emergency equipment required to be inspected; and
 - (2) A schedule for the inspections that shall be performed expressed in terms of time in service, calendar time, number of system operations, or any combination of these.
- (g) When an owner or operator changes from one inspection programme to another, the owner or operator shall, in determining when the inspection is due under the new programme, apply the time in service, calendar times, or cycles of operation accumulated under the previous programme.
- (h) The design and application of the operator's maintenance programme shall observe Human Factors principles.

8.3.1.3 ANNUAL INSPECTIONS

- (a) An annual inspection programme may be used for non-complex aircraft with a maximum certificated take-off mass of less than 5,700 kg (12,566 lb) or less that are not used for compensation or hire.
- (b) An annual inspection subsection may be performed by an AMO.
- (c) No person may operate an aircraft unless, within the preceding 12 calendar months, the aircraft has had:
 - (1) An annual inspection in accordance with Part 5 of these regulations and has been approved for return to service by an AMO certificated in accordance with Part 6 of these regulations; or,
 - (2) An inspection for the issuance of a certificate of airworthiness completed by the Authority in accordance with Part 5 of these regulations.

8.3.1.4 ANNUAL/100 HOUR INSPECTIONS

- (a) No person may operate a non-complex aircraft with a maximum certificated take-off mass of 5,700 kg (12,566 lb) or less carrying any person (other than a crew member) for compensation or hire, and no person may give flight instruction for compensation or hire in an aircraft provided by that person, unless:
 - (1) Within the preceding 100 hours of time in service, the aircraft has received an annual or a 100-hour inspection, and
 - (2) The aircraft has been approved for return to service in accordance with Part 5 of these regulations.
- (b) The 100-hour limitation may be exceeded by not more than 10 hours while en-route to reach a place where the inspection can be performed. The excess time used to reach a place where the inspection can be performed shall be included in computing the next 100 hours of time in service.

- (c) An annual inspection under this subsection may be performed and the aircraft may be returned to service by an AMO certificated in accordance with Part 6 of these regulations.
- (d) A 100-hour inspection under this subsection may be performed and the aircraft may be returned to service by an AMO certificated in accordance with Part 6 of these regulations.

8.3.1.5 PROGRESSIVE INSPECTIONS

- (a) A progressive inspection programme may be used for aircraft with a maximum certificated take-off mass of 5,700 kg (12,566 lb) or less.
- (b) Aircraft inspected under a progressive inspection programme may be used for compensation or hire.
- (c) Each registered owner or operator of an aircraft desiring to use a progressive inspection programme shall submit a written request to the Authority, and shall provide:
 - (1) An AMO appropriately rated in accordance with Part 6 of these regulations, or the manufacturer of the aircraft to supervise or conduct the progressive inspection;
 - (2) A current inspection procedures manual that is available and readily understandable to pilot and maintenance personnel and contains, in detail:
 - (i) An explanation of the progressive inspection, including the continuity of inspection responsibility, the making of reports, and the keeping of records and technical reference material;
 - (ii) An inspection schedule, specifying the intervals in hours or days when routine and detailed inspections will be performed and including instructions for exceeding an inspection interval by not more than 10 hours while en-route and for changing an inspection interval because of service experience;
 - (iii) Sample routine and detailed inspection forms and instructions for their use; and
 - (iv) Sample reports and records and instructions for their use;
 - (3) Enough housing and equipment for necessary disassembly and proper inspection of the aircraft; and
 - (4) Appropriate current technical information for the aircraft.
- (d) The frequency and detail of the progressive inspection shall provide for the complete inspection of the aircraft within each 12 calendar-months and shall be consistent with the current manufacturer's recommendations, field service experience, and the type of operation in which the aircraft is engaged.
- (e) The progressive inspection schedule shall ensure that the aircraft, at all times, is airworthy and will conform to all applicable aircraft specifications, type certificate data sheets, ADs, and other approved data acceptable to the Authority.
- (f) Each owner or operator shall include in the progressive inspection programme the name and address of the person responsible for the scheduling of the inspections required by the programme and shall provide a copy of the programme to the person performing inspection on the aircraft.
- (g) If the progressive inspection programme is discontinued, the owner or operator shall immediately notify the Authority, in writing, of the discontinuance.

- (1) After the discontinuance, the first annual inspection under Part 8 is due within 12 calendar months after the last complete inspection of the aircraft under the progressive inspection programme.
- (2) The 100-hour inspection is due within 100 hours after the last complete inspection under the progressive inspection programme.
- (3) A complete inspection of the aircraft, for the purpose of determining when the annual and 100 hour inspections are due, requires a detailed inspection of the aircraft and all its components in accordance with the progressive inspection programme.
- (4) A routine inspection of the aircraft and a detailed inspection of several components are not considered to be a complete inspection.

8.3.1.6 CONTINUING AIRWORTHINESS INSPECTIONS

- (a) The registered owner or operator of each large aeroplane with a maximum certificated take-off mass of over 5,700 kg (12,566 lb), turbine-powered multi-engine aeroplane, or turbine-powered rotorcraft shall select, identify in the aircraft continuing airworthiness records, and use one of the following continuing airworthiness inspection programmes for the inspection of the aircraft:
 - (1) A current inspection programme recommended by the manufacturer;
 - (2) A continuing airworthiness maintenance programme for that make and model of aircraft currently approved by the Authority for use by an AOC holder; or
 - (3) Any other inspection programme established by the registered owner or operator of that aircraft and approved by the Authority.
- (b) Each owner or operator shall include in the selected inspection programme the name and address of the person responsible for the scheduling of the inspections required by the programme and shall provide a copy of the programme to the person performing inspection on the aircraft.

Note: The aircraft manufacturer's inspection programme and any other inspection programme approved by the Authority, will specify who can perform aircraft maintenance and inspections and approve the aircraft for return to service.

8.3.1.7 CHANGES TO AIRCRAFT MAINTENANCE INSPECTION PROGRAMMES

- (a) Whenever the Authority finds that revisions to an approved inspection programme are necessary for the continued adequacy of the programme, the owner or operator shall, after notification by the Authority, make any changes in the programme found to be necessary.
- (b) Within 30 days after receiving the notice from the Authority, the owner or operator may petition the Authority to reconsider the notice.
- (c) Except in the case of an emergency requiring immediate action in the interest of safety, the filing of the petition stays the notice pending a decision by the Authority.

8.3.1.8 REQUIRED MAINTENANCE

- (a) Each owner or operator of an aircraft shall:

- (1) Have that aircraft inspected as prescribed in 8.3 of this part and shall have discrepancies repaired as prescribed in the performance rules of Part 5 of these regulations;
- (2) Repair, replace, remove, or inspect any inoperative instruments or items of equipment at the next required inspection, except when permitted to be deferred under the provisions of an MEL;
- (3) Ensure that a placard has been installed on the aircraft when listed discrepancies include inoperative instruments or equipment; and
- (4) Ensure that maintenance personnel make appropriate entries in the aircraft continuing airworthiness records indicating the aircraft has been approved for return to service.

8.3.1.9 CONTINUING AIRWORTHINESS RECORDS RETENTION

- (a) Except for records maintained by an AOC holder, each registered owner or operator shall retain the following continuing airworthiness records until the work is repeated or superseded by other work of equivalent scope and detail:
 - (1) Records of the maintenance, overhaul, modifications, repairs, and inspections and records of the 100-hour, annual, and other required or approved inspections, as appropriate, for each aircraft (including the airframe) and each engine, propeller, rotor, and appliance of an aircraft to include:
 - (i) A description (or reference to data acceptable to the Authority) of the work performed,
 - (ii) The date of completion of the work performed; and
 - (iii) The signature and certificate number of the person approving the aircraft for return to service; and
 - (2) Records containing the following information:
 - (i) The total time-in-service of the airframe, each engine, each propeller, and each rotor
 - (ii) The current status of all life-limited aeronautical products;
 - (iii) The time since the last overhaul of all items installed on the aircraft that are required to be overhauled on a specified time basis;
 - (iv) The current inspection status of the aircraft, including the time since the last inspection required by the inspection programme under which the aircraft aeronautical products are maintained
 - (v) The current status of applicable ADs, including, for each, the method of compliance, the AD number, and the revision date. If the AD involves a recurring action, include the time and date when the next action is required; and
 - (vi) Copies of the forms prescribed by this part for each major modification to the airframe and currently installed engines, rotors, propellers, and appliances.
- (b) The records specified in paragraph 8.3.1.9(a) of this subsection shall be retained and transferred with the aircraft at the time the aircraft is sold or leased.
- (c) A list of defects shall be retained until the defects are repaired and the aircraft is approved for return to service.

- (d) The owner or operator shall make all continuing airworthiness records required by this subsection available for inspection by the Authority.

Note 1: Guidance regarding electronic aircraft continuing airworthiness records is included in ICAO Doc 9760, Airworthiness Manual.

Note 2: Continuing airworthiness record requirements for AOC holders are prescribed in Part 9 of these regulations.

8.3.1.10 LEASE OR SALE OF AIRCRAFT—TRANSFER OF CONTINUING AIRWORTHINESS RECORDS

- (a) Any owner or operator who sells or leases a Curaçao-registered aircraft shall transfer to the purchaser or lessor, at the time of sale or lease, the records for that aircraft as identified in § 8.3.1.9, which shall be maintained in a form and format that ensures readability, security, and integrity of the records at all times in plain language form or in coded form at the election of the purchaser or lessor if the coded form provides for the preservation and retrieval of information in a manner acceptable to the Authority.

8.4 FLIGHT CREW REQUIREMENTS

8.4.1.1 COMPOSITION OF THE FLIGHT CREW

- (a) The number and composition of the flight crew may not be less than that specified in the flight manual or other documents associated with the certificate of airworthiness.
- (b) Where radio equipment is installed in the aircraft, the flight crew shall include at least one member who holds a valid radio licence authorising operation of the type of radio transmitting equipment to be used.
- (c) When navigation necessary for the safe operation of the aeroplane cannot be accomplished from the pilot's station the flight crew shall include a member who holds a flight navigator licence.
- (d) A CP is required for IFR commercial air transport operations, unless the Authority has issued an exemption in accordance with the exemption process in Part 1 of these regulations, for the use of an autopilot in lieu of a CP. If such operations are to be conducted outside Curaçao, the Authority shall have an arrangement with the States where operations are conducted. This exemption is applicable for aeroplanes with a maximum certificated take-off mass of 5,700 kg (12,566 lb) or less or helicopters with a maximum certificated take-off mass of 3 175 kg (7000 lb) or less.
- (e) When a separate FE's station is incorporated in the design of an aeroplane and the FE function cannot be accomplished from the pilot's station by a pilot who holds a FE licence without interference with regular duties, the flight crew shall include at least one crew member who holds an FE licence engineer licence especially assigned to that station.

8.4.1.2 FLIGHT CREW QUALIFICATIONS

- (a) The PIC shall ensure that the licences of each flight crew member have been issued or rendered valid by the State of Registry and contain the proper ratings, and that all the flight crew members have maintained recency of experience.

- (b) No person may operate a civil aircraft in commercial air transport or aerial work unless that person is qualified for the specific operation and in the specific type of aircraft used.
- (c) The owner or operator of an aircraft shall ensure that the flight crew members demonstrate the ability to speak and understand the language used for radiotelephony communications and for international operations.

8.4.1.3 AUTHORISATION IN LIEU OF A TYPE RATING

- (a) The Authority may authorise a pilot to operate an aircraft requiring a type rating without a type rating for up to 60 days, provided:
 - (1) The Authority has determined that an equivalent level of safety can be achieved through the operating limitations on the authorisation;
 - (2) The applicant shows that compliance with this subsection is impracticable for the flight or series of flights;
 - (3) The operations:
 - (i) Involve only a ferry flight, training flight, test flight, or skill test for a pilot licence or rating;
 - (ii) Are conducted within the Curaçao FIR, unless, by previous agreement with the Authority of the other State, the aircraft is flown to an adjacent contracting State for maintenance;
 - (iii) Are not for compensation or hire unless the compensation or hire involves payment for the use of the aircraft for training or taking a skill test; and
 - (iv) Involve only the carriage of crew members considered essential for the flight.
 - (4) If the purpose of the authorisation provided by paragraph 8.4.1.3(a) of this subsection cannot be accomplished within the time limit of the authorisation, the Authority may authorise an additional period of up to 60 days.

8.4.1.4 LICENCES REQUIRED

- (a) Except as provided for in Subsection 8.4.1.3 of this part, no person may act as PIC or in any other capacity as a required flight crew member of a civil aircraft of:
 - (1) Curaçao registry, unless he or she carries in his or her personal possession the appropriate and current Curaçao licence or validation for that flight crew position for that type of aircraft and a valid medical certificate;
 - (2) foreign registry unless he or she carries in his or her personal possession a valid and current licence for that type of aircraft, issued or validated by the State in which the aircraft is registered.

8.4.1.5 RATING REQUIRED FOR INSTRUMENT FLIGHT RULES OPERATIONS

- (a) No person may act as pilot of a civil aircraft under IFR or in weather conditions less than the minimums prescribed for VFR flight unless:

- (1) The pilot holds an instrument rating or an ATPL licence with an appropriate aircraft category, class, and type (if required) rating for the aircraft being flown;
- (2) For a helicopter, the pilot holds a helicopter instrument rating

8.4.1.6 SPECIAL AUTHORISATION REQUIRED FOR CATEGORY II/III OPERATIONS

- (a) Except as shown in paragraph 8.4.1.6(b) of this subsection), no person may act as pilot of a civil aircraft in a Category II/III operation unless:
 - (1) In the case of a PIC, he or she holds a current CAT II or III pilot authorization issued by the State of Registry for that aircraft type; or
 - (2) In the case of a CP, he or she is authorized by the State of Registry to act as CP in that aircraft type in CAT II/III operations.
- (b) An authorisation is not required for individual pilots of an AOC holder that has operations specifications approving CAT II or III operations.

8.4.1.7 PILOT LOGBOOKS

- (a) Each pilot shall show the aeronautical training and experience used to meet the requirements for a licence or rating, or for recency of experience, by a reliable record.
- (b) Each PIC shall carry his or her logbook on all general aviation international flights.
- (c) A student pilot shall carry his or her logbook, including the proper flight instructor endorsements, on all solo cross-country flights.

Note: The acceptable methods of logging experience are outlined in Part 2 of these regulations.

8.4.1.8 PILOT REGENCY AND PROFICIENCY – GENERAL AVIATION OPERATIONS

- (a) The recency and proficiency requirements for general aviation operations are listed in Part 2: 2.3.1.6 of these regulations.

8.4.1.9 FLIGHT CREW—LIMITATIONS ON USE OF SERVICES FOR COMMERCIAL AIR TRANSPORT

- (a) No person may serve as a flight crew member in commercial air transport, nor may any AOC holder use a flight crew member in commercial air transport unless that person is otherwise qualified for the operations for which he or she is to be used.
- (b) The qualifications, training and proficiency checking for flight crew members engaged in commercial air transport operations are provided in 8.10 of this part.
- (c) The recency and proficiency requirements for flight crew members engaged in commercial air transport operations are prescribed in 8.4.1.10 through 8.4.1.14 of this part.

8.4.1.10 PILOT REGENCY—TAKE-OFF AND LANDINGS, COMMERCIAL AIR TRANSPORT OPERATIONS

- (a) No person may act as PIC or CP of an aircraft carrying passengers unless, within the preceding 90 days, that person has:

- (1) Made three take-offs and landings as the sole manipulator of the flight controls in an aircraft of the same category and class and, if a type rating is required, of the same type or in an FSTD approved for the purpose.
 - (2) For a tailwheel aeroplane, made the three take-offs and landings required by paragraph 8.4.1.10(a)(1) of this subsection in a tailwheel aeroplane with each take-off and landing to a full stop.
 - (3) For night operations, made the three take-offs and landings required by paragraph 8.4.1.10(a)(1) of this subsection at night with each take-off and landing to a full stop.
- (b) A pilot who has not met the recency of experience for take-offs and landings shall satisfactorily complete a requalification curriculum acceptable to the Authority.
- (c) The requirements of paragraphs 8.4.1.10(a) and (b) of this subsection may be satisfied in an FSTD approved by the Authority.

8.4.1.11 PILOT RECENCY- INSTRUMENT FLIGHT RULES OPERATIONS

- (a) No person may act as a pilot under IFR, or in IMC, unless that person has, within the preceding 6 calendar months:
 - (1) Logged at least 6 hours of instrument flight time including at least 3 hours in flight in the category of aircraft; and
 - (2) Completed at least six instrument approaches.
- (b) A pilot who has completed an instrument proficiency check with an authorised representative of the Authority retains currency for IFR operations for 6 calendar-months following that check.
- (c) Requirements of paragraphs (a) and (b) may be satisfied in a flight simulator approved by the Authority.

8.4.1.12 PILOT RECENCY – CRUISE RELIEF PILOT, COMMERCIAL AIR TRANSPORT OPERATIONS

- (a) No person may act as a cruise relief pilot in commercial air transport unless within the preceding 90 days, that person has either:
 - (1) Operated as PIC, CP, or cruise relief pilot on the same type of aircraft; or
 - (2) Carried out flying skill refresher training including normal, abnormal and emergency procedures specific to cruise flight on the same type of aircraft or in an FSTD approved for the purpose, and has practiced approach and landing procedures, where the approach and landing procedure practice may be performed as the pilot who is not flying the aircraft.
- (b) When a cruise relief pilot is flying several variants of the same type of aircraft or different types of aircraft with similar characteristics in terms of operating procedures, systems, and handling, the recency or refresher training may be combined, if approved by the Authority.

8.4.1.13 PILOT RECENCY – NIGHT VISION GOGGLES

- (a) No person may act as PIC in a night vision goggle operation unless that person has completed the required training prescribed in Part 2: 2.3.2.9 of these regulations and has performed and logged the following tasks as the sole manipulator of the controls on a flight during a night vision goggle

operation, within the preceding 60 days to act as PIC with passengers on board, or within the preceding 120 days to act as PIC without passengers on board:

- (1) 3 take-offs and landings, with each take-off and landing including a climbout, cruise, descent, and approach phase of flight, if the pilot intends to use night vision goggles during the take-off and landing phase of flight;
 - (2) 3 hovering tasks, if the pilot intends to use night vision goggles when operating helicopters or powered-lifts during the hovering phase;
 - (3) 3 area departure and area arrival tasks;
 - (4) 3 tasks of transitioning from aided night flight to unaided night flight and back to aided night flight; or
 - (5) 3 night vision goggle operations, or when operating helicopters or powered-lifts, 6 night vision goggle operations.
- (b) No person may act as PIC in a night vision goggle operation unless that person has successfully completed the night vision goggles proficiency check required in Part 2: 2.3.2.9, with the Authority or an authorised representative of the Authority.

8.4.1.14 PILOT PROFICIENCY - COMMERCIAL AIR TRANSPORT OPERATIONS

- (a) The qualification, training and proficiency checking requirements for flight crew members engaged in commercial air transport are prescribed in 8.10 of this part. Additionally, the requirements in paragraphs 8.4.1.14(b) and (c) of this subsection shall be met, as applicable.
- (b) ALL PILOTS. No person shall act as a pilot of an aircraft unless that person has, within the preceding 12 months, successfully passed two proficiency checks conducted by an authorised representative of the Authority. The proficiency check requirement:
 - (1) 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 aircraft, including where the operations may be conducted under IFR;
 - (2) Shall not be satisfied by the conduct of two checks that are similar and that occur within a period of 4 consecutive months; and
 - (3) May be combined for several variants of the same type of aircraft or different types of aircraft with similar characteristics in terms of operating procedures, systems and handling, if approved by the Authority.
- (c) SINGLE-PILOT OPERATIONS. No person shall act as PIC of an aircraft unless that person has completed the following proficiency requirements in the class of aeroplane in an environment representative of the operation:
 - (1) For operations under the IFR or at night, the person shall have accumulated at least 50 hours flight time on the class of aeroplane, of which at least 10 hours shall be as PIC;
 - (2) For operations under the IFR, the person shall have accumulated at least 25 hours flight time under the IFR on the class of aeroplane, which may form part of the 50 flight time in paragraph 8.4.1.14(c)(1) of this subsection;
 - (3) For operations at night, the person shall have accumulated at least 15 hours flight time at night, which may form part of the 50 hours flight time in paragraph 8.4.1.14(c)(1) of this subsection; and

- (4) The person shall have successfully completed training programmes that include, in addition to the operator's training programme, passenger briefing with respect to emergency evacuation, autopilot management, and the use of simplified in-flight documentation.
- (d) The aircraft pilot proficiency check and the instrument proficiency check shall be accomplished by the Authority or an authorised representative of the Authority in the category, class and type of aircraft to be operated, or in an FSTD approved for the purpose, to the requirements prescribed in 8.10.1.20 of this part, in IS 8.10.1.20, and in the applicable skill test in Part 2 of these regulations.
- (e) NIGHT VISION GOGGLES OPERATION. No person may act as PIC in a night vision goggle operation unless, the pilot has completed the required training prescribed in Part 2: 2.3.2.9 of these regulations and either:
 - (1) Meets the currency requirements in paragraph 8.4.1.13(a) of this part; or
 - (2) Passes the night vision goggles proficiency check required by paragraph 8.4.1.13(b) of this part with Authority or an authorised representative of the Authority.

8.4.1.15 PILOT PRIVILEGES AND LIMITATIONS

- (a) A pilot may conduct operations only within the general privileges and limitations of each licence, rating or authorisation as specified in Part 2 of these regulations.

8.4.1.16 DECOMPRESSION SICKNESS AFTER SCUBA DIVING.

- (a) A pilot who intends to fly after scuba diving shall allow the body sufficient time to rid itself of excess nitrogen absorbed during diving. If not, decompression sickness due to evolved gas can occur during exposure to low altitude and create a serious in-flight emergency.
- (b) The waiting time before going to flight altitudes of up to 8,000 feet shall be at least:
 - (1) 12 hours after diving which has not required controlled ascent (non-decompression stop diving); and
 - (2) At least 24 hours after diving which has required controlled ascent (decompression stop diving).
- (d) The waiting time before going to flight altitudes above 8,000 feet shall be at least 24 hours after any SCUBA dive.
- (c) These above-mentioned altitudes are actual flight altitudes above mean sea level (AMSL) and not pressurized cabin altitudes.

8.5 CREW MEMBER DUTIES AND RESPONSIBILITIES

8.5.1.1 AUTHORITY AND RESPONSIBILITY OF THE PILOT-IN-COMMAND

- (a) The PIC shall be responsible for the operations and safety of the aircraft and for the safety of all persons on board, during flight.
- (b) The PIC of an aircraft shall have final authority as to the operation of the aircraft while he or she is in command.

- (c) The PIC of an aircraft shall, whether manipulating the controls or not, be responsible for the operation of the aircraft in accordance with the rules of the air, except that the PIC may depart from these rules in emergency circumstances that render such departure absolutely necessary in the interests of safety.
- (d) The PIC shall not conduct general aviation operations for which a specific approval is required unless such approval has been issued by the State of Registry. Specific approvals shall follow the layout and contain at least the information prescribed in IS 8.5.1.1.

8.5.1.2 COMPLIANCE WITH LOCAL REGULATIONS

- (a) The PIC shall comply with the relevant laws, regulations and procedures of the States in which the aircraft is operated.
- (b) If an emergency situation that endangers the safety of the aircraft or persons necessitates the taking of action that involves a violation of local regulations or procedures, the PIC shall:
 - (1) Notify the appropriate local Authority without delay;
 - (2) Submit a report of the circumstances, if required by the State in which the incident occurs; and
 - (3) Submit a copy of this report to the State of the Operator of the AOC or to the State of Registry, in general aviation.
- (c) Each PIC shall submit to the Authority within 10 days, on a form and in a manner prescribed by the Authority, the report specified in paragraph 8.5.1.2(b) of this subsection.

8.5.1.3 NEGLIGENT OR RECKLESS OPERATIONS OF THE AIRCRAFT

- (a) No person may operate an aircraft in a negligent or reckless manner so as to endanger life or property of others.

8.5.1.4 FITNESS OF FLIGHT CREW MEMBERS

- (a) No person may act as PIC or in any other capacity as a required flight crew member when he or she is aware of any decrease in his or her medical fitness that might render the crew member unable to safely exercise the privileges of his or her licence.
- (b) The PIC shall be responsible for ensuring that a flight is not:
 - (1) Commenced if any flight crew member is incapacitated from performing duties by any cause such as injury, sickness, fatigue, the effects of alcohol or drugs; or
 - (2) Continued beyond the nearest suitable aerodrome if a flight crew member's capacity to perform functions is significantly reduced by impairment of faculties from causes such as fatigue, sickness or lack of oxygen.

8.5.1.5 PROHIBITION ON USE OF PSYCHOACTIVE SUBSTANCES, INCLUDING NARCOTICS, DRUGS OR ALCOHOL

- (a) No person may act or attempt to act as a crew member of a civil aircraft:

- (1) Within 10 hours after the consumption of any alcoholic beverage;
 - (2) While under the influence of alcohol; or
 - (3) While using any psychoactive substance that affects the person's faculties in any way contrary to safety
- (b) A crew member shall, up to 10 hours before or immediately after acting or attempting to act as a crew member, on the request of a law enforcement officer or the Authority, submit to a test to indicate the presence of alcohol or other psychoactive substances in the blood.
- (c) Whenever there is a reasonable basis to believe that a person may not be in compliance with this subsection and upon the request of the Authority, that person shall furnish the Authority or shall authorise any clinic, doctor, or other person to release to the Authority, the results of each blood test taken for the presence of alcohol or narcotic substances up to 10 hours before or immediately after acting or attempting to act as a crew member.
- (d) Any test information provided to the Authority under the provisions of this section may be used as evidence in any legal proceeding.

8.5.1.6 FLIGHT CREW MEMBER USE OF SEAT BELTS AND SHOULDER HARNESSSES

- (a) Each flight crew member shall have his or her seat belts fastened during take-off and landing and at all other times when seated at his or her station.
- (b) Each flight crew member occupying a station equipped with a shoulder harness shall fasten that harness during take-off and landing, except that the shoulder harness may be unfastened if the crew member cannot perform the required duties with the shoulder harness fastened.
- (c) Each flight crew member occupying a seat equipped with a combined safety belt and shoulder harness shall have the combined safety belt and shoulder harness properly secured about that crew member during take-off and landing, except that the combined safety belt and shoulder harness may be unfastened if the crew member cannot perform the required duties with the combined safety belt and shoulder harness fastened.
- (d) At each unoccupied seat, the safety belt and shoulder harness, if installed, shall be secured so as not to interfere with crew members in the performance of their duties or with the rapid egress of occupants in an emergency.

8.5.1.7 FLIGHT CREW MEMBERS AT DUTY STATIONS

- (a) Each required flight crew member shall remain at the assigned duty station during take-off and landing and during critical phases of flight.
- (b) Each flight crew member shall remain at his or her station during all phases of flight unless:
 - (1) Absence is necessary for the performance of his or her duties in connection with the operation;
 - (2) Absence is necessary for physiological needs, provided one qualified pilot remains at the controls at all times; or
 - (3) The crew member is taking a rest period and a qualified relief crew member replaces him or her at the duty station.

- (i) For the assigned PIC during the en-route cruise portion of the flight by a pilot who holds an ATPL and an appropriate type rating, and who is currently qualified as PIC or CP, and is qualified as PIC of that aircraft during the en-route cruise portion of the flight; and
- (ii) In the case of the assigned CP, by a pilot qualified to act as PIC or CP of that aircraft during en-route operations

8.5.1.8 REQUIRED CREW MEMBER EQUIPMENT

- (a) Each crew member involved in night operations shall have an independent portable light at his or her station.
- (b) Each crew member shall have at his or her station an aircraft checklist containing the normal, abnormal, and emergency procedures relating to the operation of that type of aircraft.
- (c) Each crew member shall have at his or her station current and suitable charts to cover the route of the proposed flight and any route along which it is reasonable to expect that the flight may be diverted.
- (d) Each 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 performing as a required crew member in commercial air transport.

8.5.1.9 COMPLIANCE WITH CHECKLISTS

- (a) The PIC shall ensure that the flight crew follows the approved checklist procedures when operating the aircraft.

8.5.1.10 SEARCH AND RESCUE INFORMATION

- (a) For all international flights, the PIC shall have on board the aircraft essential information concerning the search and rescue services in the areas over which he or she intends to operate the aircraft.

8.5.1.11 PRODUCTION OF AIRCRAFT AND FLIGHT DOCUMENTATION

- (a) The PIC shall, within a reasonable time of being requested to do so by a person authorised by the Authority, produce to that person the documentation required to be carried on the aircraft.

8.5.1.12 LOCKING OF FLIGHT DECK COMPARTMENT DOOR: COMMERCIAL AIR TRANSPORT

- (a) The PIC shall ensure that the flight deck compartment door (if installed) is closed and locked at all times during passenger-carrying commercial air transport operations, except as necessary to accomplish approved operations or to provide for emergency evacuation, and as listed below:
 - (1) From the time all external doors are closed following embarkation, until
 - (2) Any such door is opened for disembarkation, except
 - (3) When necessary to permit access and egress by authorised persons.

- (b) No person may operate a passenger-carrying aeroplane unless it is equipped with an approved flight crew compartment door that is designed to resist penetration by small arms fire and grenade shrapnel, and to resist forcible intrusions by unauthorised persons; this door shall be capable of being locked and unlocked from either pilot's station, for aeroplanes with a maximum certificated take-off mass in excess of:
 - (1) 54 500 kg;
 - (2) 45 000 kg and with a passenger seating capacity greater than 19; or
 - (3) With a passenger seating capacity greater than 60.

8.5.1.13 ADMISSION TO THE FLIGHT DECK—COMMERCIAL AIR TRANSPORT

- (a) No person may admit any person to the flight deck of an aircraft engaged in commercial air transport operations unless the person being admitted is:
 - (1) A crew member;
 - (2) A representative of the Authority responsible for certification, licensing or inspection, if this is required for the performance of his or her official duties; or
 - (3) Permitted by and carried out in accordance with instructions contained in the OM.
- (b) The PIC shall ensure that:
 - (1) In the interest of safety, admission to the flight deck does not cause distraction and/or interference with the flight's operations; and
 - (2) All persons carried on the flight deck are made familiar with the relevant safety procedures.

8.5.1.14 ADMISSION OF INSPECTOR TO THE FLIGHT DECK – COMMERCIAL AIR TRANSPORT

- (a) Whenever, in performing the duties of conducting an inspection, an inspector from the Authority presents inspector's credentials to the PIC of an aircraft engaged in commercial air transport operations, the PIC shall give the inspector free and uninterrupted access to the flight deck of the aircraft.

8.5.1.15 DUTIES DURING CRITICAL PHASES OF FLIGHT: COMMERCIAL AIR TRANSPORT

- (a) No flight crew member may perform any duties during a critical phase of flight except those required for the safe operation of the aircraft.
- (b) No PIC may permit a flight crew member to engage in any activity during a critical phase of flight that could distract or interfere with the performance of his or her assigned duties.

8.5.1.16 MANIPULATION OF THE CONTROLS—COMMERCIAL AIR TRANSPORT

- (a) No PIC may allow an unqualified person to manipulate the controls of an aircraft during commercial air transport operations.
- (b) No person may manipulate the controls of an aircraft during commercial air transport operations unless he or she is qualified to perform the applicable crew member functions and is authorised by the AOC holder.

8.5.1.17 SIMULATED ABNORMAL SITUATIONS IN FLIGHT: COMMERCIAL AIR TRANSPORT

- (a) No person may cause or engage in simulated abnormal or emergency situations or the simulation of IMC by artificial means during commercial air transport operations.

8.5.1.18 COMPLETION OF THE AIRCRAFT TECHNICAL LOG—COMMERCIAL AIR TRANSPORT AND AERIAL WORK

- (a) The PIC shall ensure that all portions of the aircraft technical log are completed at the appropriate points before, during and after flight operations, including:
 - (1) The journey logbook; and
 - (2) The aircraft maintenance records section.

Note: Requirements for the journey logbook and maintenance records section of the aircraft technical log are prescribed in 9.4.1.5 and 9.5.1.9 of these regulations.

8.5.1.19 REPORTING MECHANICAL IRREGULARITIES

- (a) Each PIC shall be responsible for reporting to the operator, at the termination of the flight, all known or suspected defects in the aeroplane.
- (b) Each PIC shall be responsible for reporting to the operator, at the termination of the flight, all known or suspected defects in the helicopter.

8.5.1.20 REPORTING OF FACILITY AND NAVIGATION AID INADEQUACIES

- (a) Each crew member shall report, without delay, any inadequacy or irregularity of a facility or navigational aid observed in the course of operations to the person responsible for that facility or navigational aid.

8.5.1.21 REPORTING OF HAZARDOUS CONDITIONS

- (a) The PIC shall report to the appropriate ATC facility, without delay and with enough detail to be pertinent to the safety of other aircraft, any hazardous flight conditions encountered en-route, including those associated with meteorological conditions.
- (b) The PIC shall report the runway braking action special air-report when the runway braking action encountered is not as good as reported.

Note: The procedures for making special air-reports regarding runway braking action are contained in ICAO Doc 4444, Procedures for Air Navigation Services – Air Traffic Management (PANS-ATM), Chapter 4 and Appendix 1.

8.5.1.22 REPORTING OF INCIDENTS

- (a) AIR TRAFFIC INCIDENT REPORT. The PIC shall submit, without delay, an air traffic incident report whenever an aircraft in flight has been endangered by:

- (1) A near collision with another aircraft or object;
 - (2) Faulty air traffic procedures or a lack of compliance with applicable procedures by ATC or the flight crew; or
 - (3) A failure of ATC facilities.
- (b) BIRDS. In the event a bird constitutes an in-flight hazard or an actual bird strike occurs, the PIC shall, without delay:
 - (1) Inform the appropriate ground station whenever a potential bird hazard is observed; and
 - (2) Submit a written bird strike report after landing.
- (c) DANGEROUS GOODS. The PIC shall inform the appropriate ATC facility, if the situation permits, when an in-flight emergency occurs involving dangerous goods on board.
- (d) UNLAWFUL INTERFERENCE. The PIC shall submit a report to the local authorities and to the Authority, without delay, following an act of unlawful interference with the crew members on board an aircraft.

8.5.1.23 ACCIDENT NOTIFICATION

- (a) The PIC shall notify the nearest appropriate Authority, by the quickest available means, of any accident involving his or her aircraft that results in serious injury or death of any person, or substantial damage to the aircraft or property.
- (b) The PIC shall submit a report to the Authority of any accident that occurred while he or she was responsible for the flight.

8.5.1.24 OPERATION OF COCKPIT VOICE AND FLIGHT DATA RECORDERS

- (a) The PIC shall ensure that whenever an aircraft has flight recorders installed, those recorders are operationally checked and operated continuously from the instant:
 - (1) For an FDR, from the instant the aircraft begins its take-off roll until it has completed the landing roll; and
 - (2) For a CVR, from the initiation of the pre-start checklist until the end of the securing aircraft checklist.
- (b) The PIC may not permit an FDR or a CVR to be disabled, switched off or erased during flight, unless necessary to preserve the data for an accident or incident investigation.
- (c) In the event of an accident or incident, the PIC shall act to preserve the recorded data for subsequent investigation upon completion of flight.

Note: The ICAO Annex Standard is that a PIC shall not turn off the CVR/FDR in-flight. However, paragraph 8.5.1.24(b) of this subsection is in the regulations of many Contracting States to enable the PIC to stop the recording in order to prevent recording over an accident or incident that would otherwise be lost.

8.5.1.25 CREW MEMBER OXYGEN—MINIMUM SUPPLY AND USE

- (a) The PIC shall ensure that breathing oxygen and masks are available to crew members in sufficient quantities for all flights at such altitudes where a lack of oxygen might result in impairment of the faculties of crew members.
- (b) In no case shall the minimum supply of oxygen on board the aircraft be less than that prescribed by the Authority in Part 7.

Note: The requirements for oxygen supply and use are prescribed in 7.9.1.13 of these regulations.

- (c) The PIC shall ensure that all flight crew members, when engaged in performing duties essential to the safe operation of an aircraft in flight, use breathing oxygen continuously at cabin altitudes exceeding 3,000 m (10,000 ft) for a period in excess of 30 minutes and whenever the cabin altitude exceeds 4,000 m (13,000 ft).
- (d) One pilot at the controls of a pressurised aircraft in flight shall wear and use an oxygen mask:
 - (1) For general aviation operations, at FLs above 350, if there is no other pilot at a pilot duty station; and
 - (2) For commercial air transport operations, at FLs above 250, if there is no other pilot at a pilot duty station, unless equipped with the crew oxygen masks that are of the quick-donning, inflatable harness type and are stowed in a container.

8.5.1.26 PORTABLE ELECTRONIC DEVICES

- (a) No PIC or SCCM may permit any person to use, nor may any person use, on board an aircraft, a portable electronic device that may adversely affect the performance of aircraft systems and equipment unless:
 - (1) For IFR operations other than commercial air transport, the PIC allows such a device before its use; or
 - (2) For commercial air transport operations, the AOC holder makes a determination of acceptable devices and publishes that information in the OM for the crew members' use; and
 - (3) The PIC informs passengers of the permitted use.

8.5.1.27 CARRIAGE OF DANGEROUS GOODS

- (a) No person shall carry dangerous goods in an aircraft registered in Curaçao or operated in Curaçao except:
 - (1) With the written permission of the Authority and subject to any condition the Authority may impose in granting such permission; and
 - (2) In accordance with ICAO Doc 9284, Technical Instructions for the Safe Transport of Dangerous Goods by Air, and any variations to those instructions that the Authority may from time to time mandate and provide notification of to ICAO.

8.5.1.28 MICROPHONES

- (a) For AOC holders operating aircraft, a required flight crew member shall use a boom or throat microphone to communicate with another flight crew member and ATS below FL 100/10000 ft or the transition level/altitude, whichever is higher.
- (b) For general aviation operations in an aeroplane, helicopter, or powered-lift aircraft, a required flight crew member shall use a boom or throat microphone to communicate with another flight crew member and ATS below FL 100/10000 ft or the transition level/altitude, whichever is higher.
- (c) For aerial work operations, a required flight crew member shall use a boom or throat microphone to communicate with another flight crew member and ATS below FL 100/10000 ft or the transition level/altitude, whichever is higher, as applicable to the mission.

8.6 FLIGHT PLANNING AND SUPERVISION

8.6.1 GENERAL

8.6.1.1 SUBMISSION OF A FLIGHT PLAN

- (a) Before operating one of the following, a pilot shall file a VFR or IFR flight plan, as applicable, for:
 - (1) Any flight (or portion thereof) to be provided with ATC service;
 - (2) Any IFR flight within advisory airspace;
 - (3) Any flight within or into designated areas, or along designated routes, when so required by the appropriate ATC authority to facilitate the provision of flight information, alerting and search and rescue services;
 - (4) Any flight within or into designated areas, or along designated routes, when so required by the appropriate ATC authority to facilitate co-ordination with appropriate military units or with ATC facilities in adjacent states in order to avoid the possible need for interception for the purpose of identification; and
 - (5) Any flight across international borders
- (b) The PIC shall submit a flight plan to the appropriate ATC facility before departure or during flight, unless arrangements have been made for submission of repetitive flight plans
- (c) Unless otherwise prescribed by the appropriate ATC Authority a pilot should submit a flight plan to the appropriate ATC facility:
 - (1) At least 60 minutes before departure; or
 - (2) If submitted during flight, at a time that will ensure its receipt by the appropriate ATC facility at least ten minutes before the aircraft is estimated to reach:
 - (i) The intended point of entry into a control area or advisory area; or
 - (ii) The point of crossing an airway or advisory route

8.6.1.2 AIR TRAFFIC CONTROL FLIGHT PLAN—COMMERCIAL AIR TRANSPORT

- (a) No person may take-off an aircraft in commercial air transport if an ATC flight plan has not been filed, except as authorised by the Authority.

8.6.1.3 CONTENTS OF A FLIGHT PLAN

- (a) Each person filing an IFR or VFR flight plan shall include in the flight plan the following information:
 - (1) Aircraft identification;
 - (2) Flight rules and type of flight;
 - (3) Number and type(s) of aircraft and wake turbulence category;
 - (4) Equipment;
 - (5) Departure aerodrome and alternate (if required);
 - (6) Estimated off-block time;
 - (7) Cruising speed(s);
 - (8) Cruising level(s);
 - (9) Route to be followed;
 - (10) En-route alternate aerodrome (if required);;
 - (11) Destination aerodrome and alternate(s) (if required);
 - (12) Fuel endurance;
 - (13) Total number of persons on board;
 - (14) Emergency and survival equipment; and
 - (15) Other information.

8.6.1.4 PLANNED RECLEARANCE

- (a) If during flight planning a person determines that there is a possibility depending on fuel endurance that a flight may be able to change destinations and still comply with minimum fuel supply planning requirements, that person shall notify the appropriate ATC facility of this possibility when the flight plan is submitted.

Note: The intent of this provision is to facilitate a new clearance to a revised destination, normally beyond the filed destination aerodrome.

8.6.1.5 CHANGES TO A FLIGHT PLAN

- (a) When a change occurs to a flight plan submitted for an IFR flight or a VFR flight operated as a controlled flight, the pilot shall report that change as soon as practicable to the appropriate ATC facility.
- (b) For VFR flights other than those operated as a controlled flight, the PIC shall report significant changes to a flight plan as soon as practicable to the appropriate ATC facility.

Note: Information submitted before departure regarding fuel endurance or total number of persons carried on board, if incorrect at time of departure, constitutes a significant change and shall be reported.

8.6.1.6 CLOSING A FLIGHT PLAN

- (a) The PIC shall make a report of arrival either in person or by radio to the appropriate ATC facility at the earliest possible moment after landing at the destination aerodrome, unless ATC automatically closes a flight plan.
- (b) When a flight plan has been submitted for a portion of a flight, but not the arrival at destination, the pilot shall close that flight plan en-route with the appropriate ATC facility.
- (c) When no ATC facility exists at the arrival aerodrome, the pilot shall contact the nearest ATC facility to close the flight plan as soon as practicable after landing and by the quickest means available.
- (d) Pilots shall include the following elements of information in their arrival reports:
 - (1) Aircraft identification;
 - (2) Departure aerodrome;
 - (3) Destination aerodrome (only in the case of a diversionary landing);
 - (4) Arrival aerodrome; and
 - (5) Time of arrival.

8.6.2 FLIGHT PLANNING AND PREPARATION

8.6.2.1 AIRCRAFT AIRWORTHINESS AND SAFETY PRECAUTIONS

- (a) The PIC may not operate a civil aircraft in flight until satisfied that:
 - (1) The aircraft is airworthy and duly registered and that appropriate certificates are aboard the aircraft;
 - (2) The instruments and equipment as prescribed in Part 7, are installed in the aircraft and are appropriate, taking into account the expected flight conditions; and
 - (3) Any necessary maintenance has been performed and an approval for return to service, if applicable, has been issued with respect to the aircraft.
- (b) For commercial air transport operations, the PIC shall certify by signing the aircraft technical log that he or she is satisfied that the requirements of paragraph 8.6.2.1(a) of this subsection have been met for a particular flight.

8.6.2.2 ADEQUACY OF OPERATING FACILITIES

- (a) No person may commence a flight unless it has been determined by every reasonable means available that the ground and/or water areas and facilities available and directly required for such flight and for the safe operation of the aircraft, are adequate, including communication facilities and navigation aids.

- (b) An operator shall ensure that a flight will not commence or continue as planned unless it has been ascertained by every reasonable means available that the airspace containing the intended route from aerodrome of departure to aerodrome of arrival, including the intended take-off, destination, and en-route alternate aerodromes, can be safely used for the planned operation. When intending to operate over or near conflict zones, a risk assessment shall be conducted and appropriate risk mitigation measures taken to ensure a safe flight
- (c) An operator shall ensure that any inadequacy of facilities observed in the course of operations is reported to the Authority responsible for those facilities, without undue delay.
- (d) Subject to their published conditions of use, aerodromes and their facilities shall be kept continuously available for flight operations during their published hours of operations, irrespective of meteorological conditions.
- (e) An operator shall, as part of its safety management system, assess the level of 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.
- (f) Information related to the level of RFFS protection that is deemed acceptable by the operator shall be contained in the OM.

Note 1: "Reasonable means" denotes the use, at the point of departure or while the aircraft is in flight, of information available to the operator either through official information published by the Aeronautical Information Services or readily obtainable from other sources.

Note 2: ICAO Doc 10084, Risk Assessment Manual for Civil Aircraft Operations Over or Near Conflict Zones, contains further guidance on risk assessment for air operators when flying over or near conflict zones.

Note 3: ICAO Annex 6, Part I, Attachment I, contains guidance on assessing an acceptable level of RFFS protection at aerodromes.

Note 4: It is not intended that this guidance limit or regulate the operation of an aerodrome. The assessment performed by the operator does not in any way affect the RFFS requirements of ICAO Annex 14, Volume I, for aerodromes.

Note 5: ICAO Annex 19 includes safety management provisions for air operators. Further guidance is contained in ICAO Doc 9859, Safety Management Manual (SMM).

8.6.2.3 METEOROLOGICAL REPORTS AND FORECASTS

- (a) Before commencing a flight, the PIC shall be familiar with all available meteorological information appropriate to the intended flight.
- (b) The PIC shall include, during preparation for a flight away from the vicinity of the place of departure, and for every flight under IFR:
 - (1) A study of available current meteorological reports and forecasts; and
 - (2) The planning of an alternative course of action to provide for the eventuality that the flight cannot be completed as planned, because of meteorological conditions.

8.6.2.4 METEOROLOGICAL LIMITATIONS FOR VISUAL FLIGHT RULES FLIGHTS

- (a) No person will commence a flight to be conducted in accordance with VFR unless available current meteorological reports, or a combination of current reports and forecasts, indicate that the meteorological conditions along the route, or that part of the route to be flown under VFR, will, at the appropriate time, allow VFR operations.

8.6.2.5 INSTRUMENT FLIGHT RULES DESTINATION AERODROMES

- (a) No person may conduct an IFR flight unless:
 - (1) At the time of take-off, the meteorological conditions at the departure aerodrome are at or above the operator's established aerodrome operating minima for that operation; and
 - (2) At the time of take-off or point of in-flight re-planning, current meteorological reports or a combination of current reports and forecasts indicate that the meteorological conditions at the aerodrome of intended landing or at each alternate aerodrome will be, at the estimated time of use, at or above the operator's established aerodrome operating minima for that operation.
 - (3) The operator has been approved to specify appropriate incremental values for height of cloud base and visibility to be added to the operator's established heliport or landing location operating minima.

Note 1: A partial exception is granted for commercial air transport IFR flight planning, to the effect that the meteorological conditions at the destination do not have to be at or above the approach minima to release and commence a flight, as long as the designated alternate aerodrome meets the IFR meteorological selection criteria.

Note 2: A widely accepted time margin for "estimated time of use" is 1 hour before and after the earliest and latest time of arrival. Additional considerations can be found in ICAO Doc 9976, Flight Planning and Fuel Management Manual.

8.6.2.6 INSTRUMENT FLIGHT RULES DESTINATION ALTERNATE REQUIREMENT

- (a) [AAC] No person may commence an IFR flight in an aeroplane without at least one destination alternate aerodrome listed in the flight plan unless:
 - (1) The duration of the flight from the departure aerodrome, or from the point of in-flight re-planning, to the destination aerodrome is such that, taking into account all meteorological conditions and operational information relevant to the flight, at the estimated time of use, a reasonable certainty exists:
 - (i) That, at the ETA at the aerodrome of intended landing, and for a reasonable period before and after such time, the approach and landing may be made under VMC; and
 - (ii) Separate runways are usable at the estimated time of use of the destination aerodrome with at least one runway having an operational IAP; or
 - (2) The aerodrome of intended landing is isolated and there is no suitable destination alternate aerodrome, and:
 - (i) There is a standard IAP prescribed for the aerodrome of intended landing by the jurisdictional authorities; and
 - (ii) A point of no return has been determined; and

- (iii) A flight shall not be continued past the point of no return unless available current meteorological information indicates that the following meteorological conditions will exist at the estimated time of use:
 - (A) A cloud base of at least 600 m (2 000 ft) above the aerodrome elevation; and
 - (B) Visibility of at least 5.5 km (3 NM) or of 4 km (2 NM) more than the minimum associated with the IAP.
 - (b) [AOC] No person may commence an IFR flight in an aeroplane:
 - (1) without at least one destination alternate aerodrome listed in the flight plan unless:
 - (i) the duration of the flight from the departure aerodrome, or from the point of in-flight re-planning to the destination aerodrome is such that, taking into account all meteorological conditions and operational information relevant to the flight, at the estimated time of use there is a reasonable certainty that
 - (A) the approach and landing may be made under VMC and
 - (B) separate runways are usable at the estimated time of use of the destination aerodrome with at least one runway having an operational IAP, or
 - (ii) The aerodrome of intended landing is isolated, and
 - (A) for each flight into an isolated aerodrome a point of no return shall be determined; and
 - (B) a flight to be conducted to an isolated aerodrome shall not be continued past the point of no return unless a current assessment of meteorological conditions, traffic, and other operational conditions indicate that a safe landing can be made at the estimated time of use; and
 - (C) The fuel requirements of paragraph 8.6.2.15(b)(4)(iv) of this part are met.
 - (2) without at least two destination alternate aerodromes listed in the operational and ATC flight plan when, for the destination aerodrome:
 - (i) meteorological conditions as at the estimated time of use will be below the operator's established aerodrome operating minima for that operation; or
 - (ii) meteorological information is not available.
- Note 1: Separate runways are two or more runways at the same aerodrome configured such that if one runway is closed, operations to the other runway(s) can be conducted.*
- Note 2: ICAO Doc 9976, Flight Planning and Fuel Management (FPFM) Manual, contains guidance on planning operations to isolated aerodromes.*
- (c) [AAC] No person may commence an IFR flight in a helicopter,
 - (1) where no alternate aerodrome is required unless,
 - (i) The operation is conducted as general aviation: and
 - (ii) Available current meteorological information indicates that the following meteorological conditions will exist from 2 hours before to 2 hours after the ETA:
 - (A) A cloud base of at least 300 m (1000 ft) above the aerodrome elevation, or at least 120 m (400 ft) above the lowest applicable approach minimum, whichever is higher; and

- (B) Visibility of at least 3 km (2 SM).

Note: These may be considered as minimum values where a reliable and continuous meteorological watch is maintained. When only an “area” type forecast is available, these values may be increased accordingly.

- (2) without at least one destination alternate heliport listed in the flight plan unless the available information indicates that conditions, at the heliport of intended landing and at least one alternate heliport will, at the ETA, be at or above the heliport operating minima.
- (d) [AOC] No person may commence an IFR flight in a helicopter:
 - (1) without at least one destination alternate heliport or landing location listed in the flight plan, unless the available information indicates that conditions at the heliport of intended landing will, at the estimated time of arrival, be at or above the heliport operating minima;
 - (2) without at least two destination alternate heliports, forecast to be at or above the helicopter operating minima, listed in the operational and ATC flight plan when, at the time of flight departure, the intended heliport destination is forecast to be below the helicopter operating minima; or
 - (3) If the heliport of intended landing is isolated and no alternate heliport or landing location is available, in which case a point of no return shall be determined; or
 - (4) Unless the operator has been approved by the Authority to specify appropriate incremental values for height of cloud base and visibility to be added to the operator’s established heliport or landing location operating minima.
- (e) The ceiling and visibility requirements for operations conducted in accordance with paragraphs 8.6.2.6(a) through (d) of this subsection may be reduced upon approval of the Authority for:
 - (1) Other categories of aircraft, such as powered-lift, and airships; and
 - (2) Commercial air transport where the Authority has approved alternate minima as an equivalent level of safety based on the results of a specific safety risk assessment demonstrated by the operator, that contains the following:
 - (i) Capabilities of the operator;
 - (ii) Overall capability of the aeroplane and its systems;
 - (iii) Available aerodrome technologies, capabilities and infrastructure;
 - (iv) Quality and reliability of meteorological information;
 - (v) Identified hazards and safety risks associated with each alternate aerodrome variation; and
 - (vi) Specific mitigation measures.

Note: ICAO Doc 9859, Safety Management Manual (SMM), and ICAO Doc 9976, Flight Planning and Fuel Management (FPFM) Manual, contain guidance on performing a safety risk assessment and determining variations, including examples of variations.

8.6.2.7 INSTRUMENT FLIGHT RULES ALTERNATE AERODROME SELECTION CRITERIA

- (a) If alternate minimums are published, no PIC may designate an alternate aerodrome in an IFR flight plan unless the current available forecast indicates that the meteorological conditions at the ETA at that alternate will be at or above:

- (1) [AAC] Those published alternate minima upon take-off from the departure aerodrome; or
- (2) [AOC] The operator's established minima for that operation upon
 - (i) take-off from the departure aerodrome, or
 - (ii) the point of in-flight re-planning.
- (b) If alternate minimums are not published, and if there is no prohibition against using the aerodrome as an IFR planning alternate, each PIC shall ensure that the meteorological conditions at the ETA at that alternate will be at or above:
 - (1) For aeroplanes:
 - (i) For a PA procedure, a ceiling of at least 180 m (600 ft) and visibility of not less than 3 km (2 SM); or
 - (ii) For a NPA procedure, a ceiling of at least 240 m (800 ft) and visibility of not less than 5 km (3 SM).
 - (2) For helicopters:
 - (i) A ceiling 60 m (200 ft) above the minimum for the approach to be flown, and visibility at least 1 SM but never less than the minimum visibility for the approach to be flown: or
 - (ii) If no IAP has been published and no IAP has been issued by the Authority to the operator, for the alternate airport, the ceiling and visibility minima are those allowing descent from the MEA, approach, and landing under basic VFR.
- (c) The Planning Minima Table will be used in selecting IFR alternate aerodromes.

Planning Minima <i>(Ceiling & RVR/visibility required, if applicable)</i>		
Type of Approach	Aerodrome with	
	At least two separate approach procedures based on two separate aids serving two separate runways (see note below)	At least two separate approach procedures based on two separate aids serving one runway or at least one approach procedure based on one aid serving one runway
Precision Approach CAT I, III (ILS, MLS)	PA CAT I minima	NPA minima
Precision Approach CAT 1 (ILS, MLS)	NPA minima	Circling minima or, if not available, NPA minima plus 60 m (200 ft)/1 000 m (3 300 ft)
Non-Precision Approach	The lower of NPA minima plus 60 m (200 ft)/1 000 m (3 300 ft) or circling minima	The higher of NPA minima plus 60 m (200 ft)/1 000 m (3 300 ft) or circling minima
Circling Approach	Circling minima	Circling minima

Note: Runways on the same aerodrome are considered to be separate runways when they are separate landing surfaces that may overlay or cross, such that if one of the runways is blocked it will not prevent the

planned type of operations on the other runway, and each of the landing surfaces has a separate approach based on a separate aid.

8.6.2.8 OFFSHORE ALTERNATES FOR HELICOPTER OPERATIONS

- (a) No person may designate an offshore alternate landing site:
 - (1) when it is possible to carry enough fuel to have an on-shore alternate landing site, or
 - (2) when the environment around the offshore alternate is hostile.

Note: The selection of offshore alternates may be exceptional cases, the details of which have been approved by the Authority, and may not include payload enhancement in IMC.

- (b) Each person selecting an off-shore alternate landing site shall consider the following:
 - (1) Until the point of no return, using an on-shore alternate. The offshore alternate may be used only after a point of no return.
 - (2) Attaining one engine inoperative performance capability before arrival at the alternate.
 - (3) Guaranteeing helideck availability.
 - (4) The meteorological information at the helideck shall be available from a source approved by the Authority.
 - (5) For IFR operations, an IAP shall be prescribed and available.
 - (6) Attaining mechanical reliability of critical control systems and critical components when determining the suitability of the alternate.

Note: The landing technique specified in the flight manual following control system failure may preclude the selection of certain helidecks as alternate aerodromes. The mechanical reliability of critical control systems shall be taken into account when determining the suitability of and necessity for an offshore alternate.

8.6.2.9 TAKE-OFF ALTERNATE AERODROMES—COMMERCIAL AIR TRANSPORT OPERATIONS

- (a) No person may release or take-off an aeroplane without a suitable take-off alternate specified in the flight plan if either:
 - (1) it would not be possible to return to the aerodrome of departure, or
 - (2) meteorological conditions at the aerodrome of departure are below the operator's established aerodrome landing minima for that operation.
- (b) Each operator shall ensure that each take-off alternate specified shall be located within the following flight time from the aerodrome of departure:
 - (1) For aeroplanes with two engines, 1 hour 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; or
 - (2) For aeroplanes with three or more engines, 2 hours 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; or

- (3) For aeroplanes engaged in EDTO where an alternate aerodrome meeting the distance criteria of paragraph 8.6.2.9(b)(1) or (2) of this subsection 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.
- (c) The ceiling and visibility requirements for operations conducted in accordance with paragraphs 8.6.2.9 (a) and (b) of this subsection may be reduced upon approval of the Authority for:
 - (1) Commercial air transport where the Authority has approved alternate minima as an equivalent level of safety based on the results of a specific safety risk assessment demonstrated by the operator, that contains the following:
 - (i) Capabilities of the operator;
 - (ii) Overall capability of the aeroplane and its systems;
 - (iii) Available aerodrome technologies, capabilities and infrastructure;
 - (iv) Quality and reliability of meteorological information;
 - (v) Identified hazards and safety risks associated with each alternate aerodrome variation; and
 - (vi) Specific mitigation measures.

Note: ICAO Doc 9859, Safety Management Manual, and ICAO Doc 9976, Flight Planning and Fuel Management Manual, contain guidance on performing a safety risk assessment and on determining variations, including examples of variations.

8.6.2.10 MAXIMUM DISTANCE FROM AN ADEQUATE AERODROME FOR AEROPLANES WITHOUT AN EXTENDED DIVERSION TIME OPERATIONS –[AOC]

- (d) Unless the State of the Operator has issued a specific approval for EDTO, an AOC holder shall not operate an aeroplane with two or more engines over a route that contains a point further from an adequate aerodrome than, in the case of:
 - (1) Turbine-powered aeroplanes, the distance flown in 60 minutes at the one-engine-inoperative cruise speed determined in accordance with paragraph 8.6.2.10(b) of this subsection; or
 - (2) Piston-engined aeroplanes:
 - (i) The distance flown in 120 minutes at the one-engine-inoperative cruise speed determined in accordance with paragraph 8.6.2.10(b) of this subsection; or
 - (ii) 555 km (300 NM), whichever is less.
- (e) An AOC holder shall determine a speed for the calculation of the maximum distance to an adequate aerodrome for each aeroplane with two or more engines operating, not exceeding V_{mo} based upon the true airspeed that the aeroplane can maintain with one engine inoperative under the following conditions:
 - (1) International Standard Atmosphere;
 - (2) Level flight:
 - (i) For turbine-powered aeroplanes at:
 - (A) FL 170; or

- (B) The maximum FL to which the aeroplane, with one engine inoperative, can climb and maintain, using the gross rate of climb specified in the Aircraft Flight Manual, whichever is less.
- (ii) For reciprocating-engine aeroplanes, at:
 - (A) FL 80; or
 - (B) The maximum FL to which the aeroplane, with one engine inoperative, can climb and maintain, using the gross rate of climb specified in the Aircraft Flight Manual, whichever is less.
- (3) Maximum continuous thrust or power on the remaining operating engine;
- (4) An aeroplane mass not less than that resulting from:
 - (i) Take-off at sea level at maximum certificated take-off mass until the time elapsed since take-off is equal to the applicable threshold prescribed in paragraph 8.6.2.10(a) of this subsection;
 - (ii) All engines climb to the optimum long range cruise altitude until the time elapsed since take-off is equal to the applicable threshold prescribed in subparagraph 8.6.2.10(a) of this subsection; and
 - (iii) All engines cruise at the long range cruise speed at this altitude until the time elapsed since take-off is equal to the applicable threshold prescribed in paragraph 8.6.2.10(a) of this subsection.
- (f) An AOC holder shall ensure that the following data, specific to each type or variant, is included in the OM:
 - (1) The one-engine-inoperative cruise speed determined in accordance with paragraph 8.6.2.10(b) of this subsection; and
 - (1) The maximum distance from an adequate aerodrome determined in accordance with paragraphs 8.6.2.10(a) and (b) of this subsection.

Note: The speeds and altitudes (FLs) specified above are only intended to be used for establishing the maximum distance from an adequate aerodrome.

8.6.2.11 REQUIREMENTS FOR EXTENDED DIVERSION TIME OPERATIONS - AEROPLANES [AOC]

- (a) An AOC holder shall not conduct operations beyond the threshold distance determined in accordance with Subsection 8.6.2.10 of this part unless approved to do so by the Authority. The specific approval shall identify the applicable threshold time established for each particular aeroplane and engine combination.
- (b) In requesting EDTO approval, each AOC holder shall show to the satisfaction of the Authority that:
 - (1) FOR AEROPLANES:
 - (i) For all aeroplanes,
 - (A) the most limiting EDTO significant system time limitation, if any indicated in the Aircraft Flight Manual (directly or by reference) and relevant to that particular operation is not exceeded; and

- (B) the additional fuel required by Subsection 8.6.2.15 shall include the fuel necessary to comply with the EDTO critical fuel scenario as established by the Authority.
 - (ii) For aeroplanes with two turbine engines, the aeroplane is EDTO certified and the Authority has verified the:
 - (A) Reliability of the propulsion system;
 - (B) Airworthiness certification for EDTO of the aeroplane type; and
 - (C) EDTO maintenance programme; and
 - (D) Maintenance control manual or EDTO manual.
- (2) It has conducted a safety risk assessment which demonstrates how an equivalent level of safety will be maintained, taking into account the following:
 - (i) Capabilities of the operator;
 - (ii) Overall reliability of the aeroplane;
 - (iii) Reliability of each time-limited system;
 - (iv) Relevant information from the aeroplane manufacturer; and
 - (v) Specific mitigation measures.
- (c) Before conducting an EDTO flight, an AOC holder shall ensure that a suitable EDTO en-route alternate is available, within either the approved diversion time or a diversion time based on MEL-generated serviceability status of the aeroplane whichever is shorter.
- (d) No AOC holder shall commence a flight unless, during the possible period of arrival, the required en-route alternate aerodrome will be available and the available information indicates that conditions at the aerodrome will be at or above the aerodrome operating minima approved for the operation.
- (e) No AOC holder shall conduct operations beyond 60 minutes, from a point on a route to an en-route alternate aerodrome unless it ensures that:
 - (1) For all aeroplanes;
 - (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;
 - (2) For aeroplanes 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; and
 - (3) these requirements are incorporated into the operators:
 - (i) operational control and flight dispatch procedures;
 - (ii) operating procedures; and
 - (iii) training programmes.
- (f) No AOC Holder shall proceed beyond the threshold time approved by the Authority unless:
 - (1) the identified en-route alternate aerodromes have been re-evaluated for availability; and

- (2) 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 that operation; or.
- (3) conditions are identified that would preclude a safe approach and landing at that aerodrome during the estimated time of use and an alternative course of action has been determined.

Note 1: Guidance on the establishment of an appropriate threshold time and on specific approval of EDTOs is contained in ICAO Annex 6, Part I, Attachment C, and in ICAO Doc 10085, Extended Diversion Time Operations Manual.

Note 2: FAA AC 120-42B (as amended), Extended Operations (ETOPS and Polar Operations), provides additional guidance.

8.6.2.12 EN-ROUTE ALTERNATE AERODROMES— EXTENDED DIVERSION TIME OPERATIONS [AOC]

- (a) The PIC shall ensure that the required route alternate aerodromes for EDTO are selected and specified in ATC flight plans in accordance with the EDTO diversion time approved by the Authority.
- (b) No person shall select an aerodrome as an EDTO en-route alternate aerodrome unless the appropriate weather reports or forecasts, or any combination thereof, indicate that during a period commencing 1 hour before and ending 1 hour after the expected time of arrival at the aerodrome, the weather conditions will be at or above the planning minima prescribed in the table below, and in accordance with the operator's EDTO approval.
- (c) The ceiling and visibility requirements for operations conducted in accordance with paragraphs 8.6.2.12(a) and (b) of this subsection may be reduced upon approval of the Authority for:
 - (1) Commercial air transport where the Authority has approved alternate minima as an equivalent level of safety based on the results of a specific safety risk assessment demonstrated by the operator, that contains the following:
 - (i) Capabilities of the operator;
 - (ii) Overall capability of the aeroplane and its systems;
 - (iii) Available aerodrome technologies, capabilities and infrastructure;
 - (iv) Quality and reliability of meteorological information;
 - (v) Identified hazards and safety risks associated with each alternate aerodrome variation; and
 - (vi) Specific mitigation measures.

Note 1: ICAO Doc 9859, Safety Management Manual (SMM), and ICAO Doc 9976, Flight Planning and Fuel Management (FPFM) Manual, provide guidance on performing a safety risk assessment and on determining variations, including examples of variations.

Note 2: The forecast weather criteria used in the selection of alternate aerodromes for IFR flight will also be used for the selection of EDTO alternates.

8.6.2.13 FUEL, OIL, AND OXYGEN PLANNING AND CONTINGENCY FACTORS

- (a) No person may commence a flight unless he or she takes into account the fuel, oil, and oxygen needed to ensure the safe completion of the flight, including any reserves to be carried for contingencies.
- (b) For aeroplanes in AOC operations, the amount of usable fuel to be carried shall, as a minimum, be based on:
 - (1) The following data:
 - (i) Current aeroplane-specific data derived from a fuel consumption monitoring system, if available; or
 - (ii) If current aeroplane-specific data is not available, data provided by the aeroplane manufacturer, and
 - (2) The operating conditions for the planned flight including:
 - (i) Anticipated aeroplane mass;
 - (ii) NOTAMs;
 - (iii) Current meteorological reports or a combination of current reports and forecasts;
 - (iv) ATC procedures, restrictions and anticipated delays; and
 - (v) The effects of deferred maintenance items and/or configuration deviations; and
 - (vi) Any other conditions that may delay the landing of the aeroplane or increase fuel, oil and/or oxygen consumption.
- (c) The pre-flight calculation of usable fuel required shall include:
 - (1) 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 APU fuel consumption;
 - (2) TRIP FUEL. Which shall be the amount of fuel required to enable the aeroplane to fly from take-off until landing at the destination aerodrome, taking into account the operating conditions in paragraph 8.6.2.13(b)(2) of this subsection;
 - (3) CONTINGENCY FUEL. Which shall be the amount of fuel required to compensate for unforeseen factors. It shall not be less than 5 per cent 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 5 minutes at holding speed at 450 m (1 500 ft) above the destination aerodrome in standard conditions;

Note: Unforeseen factors are those factors that could have an influence on the fuel consumption to the destination aerodrome, such as deviations of an individual aeroplane from the expected fuel consumption data, deviations from forecast meteorological conditions, extended delays, and deviations from planned routings and/or cruising levels.

- (4) DESTINATION ALTERNATE FUEL. Which shall be:
 - (i) Where a destination alternate aerodrome is required, the amount of fuel required to enable the aeroplane to:
 - (A) Perform a missed approach at the destination aerodrome;
 - (B) Climb to the expected cruising altitude;

- (C) Fly the expected routing;
 - (D) Descend to the point where the expected approach is initiated; and
 - (E) Conduct the approach and landing at the destination alternate aerodrome; or
- (ii) Where two destination alternate aerodromes are required, the amount of fuel, as calculated in 8.6.2.13(c)(4)(i), required to enable the aeroplane to proceed to the destination alternate aerodrome which requires the greater amount of alternate fuel; or
- (iii) Where a flight is operated without a destination alternate aerodrome, the amount of fuel required to enable the aeroplane to fly for 15 minutes at holding speed at 450 m (1 500 ft) above destination aerodrome elevation in standard conditions; or
- (iv) Where the aerodrome of intended landing is an isolated aerodrome:
 - (A) For a reciprocating-engine aeroplane, 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 2 hours, whichever is less; or
 - (B) For a turbine-engined aeroplane, the amount of fuel required to fly for 2 hours at normal cruise consumption above the destination aerodrome, including final reserve fuel;
- (5) FINAL RESERVE FUEL. Which shall be the amount of fuel on arrival at the destination alternate aerodrome, or the destination aerodrome when no destination alternate aerodrome is required:
 - (i) For a reciprocating-engine aeroplane, the amount of fuel required to fly for 45 minutes; or
 - (ii) For a turbine-engined aeroplane, 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;
- (6) ADDITIONAL FUEL. Which shall be the supplementary amount of fuel required to enable the aeroplane to descend as necessary and proceed to land at an alternate aerodrome in the event of engine failure or loss of pressurization based on the assumption that such a failure occurs at the most critical point along the route; and
- (7) DISCRETIONARY FUEL. Which shall be the extra amount of fuel to be carried at the discretion of the PIC.
- (d) Operators shall determine one final reserve fuel value for each aeroplane type and variant in their fleet rounded up to an easily recalled figure.
- (e) 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, an adjustment of the planned operation.

Note: Nothing in this subsection precludes the in-flight amendment of a flight plan to re-plan that flight to another aerodrome, provided the requirements of this subsection can be complied with from the point where the flight is re-planned.

- (f) For helicopters, each person computing the required minimum fuel and oil supply shall ensure that additional fuel and oil are carried to provide for the increased consumption that would result from any additional operating conditions in paragraph 8.6.2.13(b)(2) of this subsection, as applied to helicopters, and any of the following contingencies:
 - (1) Expected winds or other meteorological conditions;

- (2) Possible variations in ATC routings
 - (3) Anticipated traffic delays;
 - (4) A complete IAP and possible missed approach at destination;
 - (5) Loss of pressurization en-route, if applicable;
 - (6) Loss of one power-unit en-route; and
 - (7) Any other conditions that may delay the landing of the helicopter or increase fuel, oil and/or oxygen (if applicable) consumption.
- (g) IN-FLIGHT FUEL MANAGEMENT. The PIC shall:
- (1) Continually ensure that the amount of usable fuel remaining on board is not less than the fuel required to proceed to an aerodrome/heliport where a safe landing can be made with the planned final reserve fuel remaining upon landing;
 - (2) Request delay information from ATC when unanticipated circumstances may result in landing at the destination aerodrome/heliport 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/heliport;
 - (3) 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/heliport may result in landing with less than the planned final reserve fuel; and
 - (4) 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/heliport where a safe landing can be made is less than the planned final reserve fuel.

Note 1: The protection of final reserve fuel is intended to ensure a safe landing at any aerodrome when unforeseen occurrences may not permit 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 ICAO Doc 9976, Flight Planning and Fuel Management (FPFM) Manual.

Note 2: 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 that any change to the existing clearance, or any 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 3: 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.

Note 4: The planned final reserve fuel refers to the value calculated in paragraph 8.6.2.13(c)(5) of this subsection 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 5: 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.

Note 6: The words “MAYDAY FUEL” describe the nature of the distress conditions as required in ICAO Annex 10, Volume II: 5.3.2.1.1(b)(3).

- (h) When conducting operations beyond 60 minutes from a point on a route to an en-route alternate aerodrome, each operator shall ensure that:
 - (1) En-route alternate aerodromes are identified; and
 - (2) The PIC has access to current information on the identified en-route alternate aerodromes, including operational status and meteorological conditions.

8.6.2.14 MINIMUM FUEL REQUIREMENTS FOR VISUAL FLIGHT RULES FLIGHTS

- (a) [AAC] AEROPLANES. No person may commence a flight in an aeroplane under VFR unless, considering the wind and forecast weather conditions, there is enough fuel to fly to the first point of intended landing and, assuming normal cruising speed:
 - (1) For flights during the day, for at least 30 minutes thereafter;
 - (2) For flights during the night, for at least 45 minutes thereafter, and
- (b) [AAC] HELICOPTERS. No person may commence a flight in a helicopter under VFR unless, considering the wind and forecast weather conditions, there is enough fuel to fly to the first point of intended landing and, assuming normal cruising speed:
 - (1) For 20 minutes thereafter; and
 - (2) Have an additional amount of fuel sufficient to provide for the increased consumption on the occurrence of any of the potential contingencies specified by the operator to the satisfaction of the Authority.

8.6.2.15 MINIMUM REQUIREMENTS FOR INSTRUMENT FLIGHT RULES FLIGHTS

- (a) [AAC] AEROPLANES. No person may commence a flight under IFR unless there is enough fuel supply, considering meteorological conditions and any delays that are expected in flight, to:
 - (1) When a destination alternate aerodrome is required, fly from the aerodrome of intended landing to an alternate aerodrome, and after that, for at least 45 minutes at normal cruising altitude;
 - (2) When a destination alternate aerodrome is not required, fly to the aerodrome of intended landing and after that for at least 45 minutes at normal cruising altitude.
- (b) [AOC] AEROPLANES. No person may commence a flight under IFR, or continue past the point of in-flight re-planning, unless there is enough fuel supply, considering meteorological conditions and any delays that are expected in flight, to include the following:
 - (1) 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 APU fuel consumption;
 - (2) TRIP FUEL – which shall be the amount of fuel required to enable the aeroplane 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 in the data provided by the manufacturer;
 - (3) CONTINGENCY FUEL – which shall be the amount of fuel required to compensate for unforeseen factors. It shall be 5 per cent 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 5 minutes at holding speed at 450 m (1500 ft) above the destination aerodrome in standard conditions;

- (4) DESTINATION ALTERNATE FUEL – which shall be:
- (i) Where a destination alternate aerodrome is required, the amount of fuel required to enable the aeroplane to:
 - (A) Perform a missed approach at the destination aerodrome;
 - (B) Climb to the expected cruising altitude;
 - (C) Fly the expecting routing;
 - (D) Descend to the point where the expected approach is initiated; and
 - (E) Conduct the approach and landing at the destination alternate aerodrome;
 - (ii) Where two destination alternate aerodromes are required, the amount of fuel, as calculated in paragraph 8.6.2.15(4)(i) of this subsection, required to enable the aeroplane to proceed to the destination alternate aerodrome that requires the greater amount of alternate fuel; or
 - (iii) Where a flight is operated without a destination alternate aerodrome, the amount of fuel required to enable the aeroplane to fly for 15 minutes at holding speed at 450 m (1500 ft) above destination aerodrome elevation in standard conditions; or
 - (iv) Where the aerodrome of intended landing is an isolated aerodrome:
 - (A) For a reciprocating-engine aeroplane, 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
 - (B) For a turbine-engined aeroplane, the amount of fuel required to fly for 2 hours at normal cruise consumption above the destination aerodrome, including final reserve fuel;
- (5) 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, or a pre-calculated value for each aeroplane type and variant in the fleet rounded up to an easily recalled figure:
- (i) For a reciprocating-engine aeroplane, the amount of fuel required to fly for 45 minutes, under speed and altitude conditions specified by the Authority; or
 - (ii) For a turbine-engined aeroplane, the amount of fuel required to fly for 30 minutes at holding speed at 450 m (1500 ft) above aerodrome elevation in standard conditions;
- (6) ADDITIONAL FUEL – which shall be the supplementary amount of fuel required if the minimum fuel calculated in accordance with trip fuel, contingency fuel, destination alternate fuel and final reserve fuel above is not sufficient to:
- (i) Allow the aeroplane to descend as necessary and proceed to an alternate aerodrome in the event of engine failure or loss or 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:
 - (A) To fly for 15 minutes at holding speed at 450 m (1500 ft) above the aerodrome elevation in standard conditions; and
 - (B) Make an approach and landing;

- (C) Allow an aeroplane engaged in EDTO to comply with the EDTO critical fuel scenario as established by the Authority; and
- (D) Meet additional requirements not covered above.

Note: Fuel planning for a failure that occurs at the most critical point along a route may place the aeroplane in a fuel emergency situation.

- (7) DISCRETIONARY FUEL – Which shall be the extra amount of fuel to be carried at the discretion of the PIC, or
- (8) Notwithstanding the provisions in paragraphs 8.6.2.15(b)(1) through (7) of this subsection the Authority may approve a variation to these requirements provided the operator can demonstrate an equivalent level of safety will be maintained through a safety risk assessment that includes at least the following:
 - (i) Flight fuel calculations;
 - (ii) Capabilities of the operator to include:
 - (A) A data-driven method that includes a fuel consumption monitoring programme; and/or
 - (B) The advanced use of alternate aerodromes; and
 - (C) Specific mitigation measures.

Note: ICAO Doc 9976, Flight Planning and Fuel Management (FPFM) Manual, contains guidance on the specific safety risk assessment, fuel consumption monitoring programmes, and the advanced use of alternate aerodromes.

- (c) [AAC] Helicopters. No person may commence a flight under IFR unless there is enough fuel supply, considering meteorological conditions and any delays that are expected in flight, to:
 - (1) When a destination alternate is required,
 - (i) Fly to and execute an approach, and a missed approach, at the heliport to which the flight is planned, and thereafter
 - (ii) fly for 30 minutes at a holding speed at 450 m (1500 ft) above the alternate under standard temperature conditions, and approach and land; and
 - (iii) have a reserve for contingencies specified by the operator and approved by the Authority.
 - (2) When a destination alternate is not required, to fly to the heliport to which the flight is planned and thereafter:
 - (i) fly for 30 minutes at a holding speed at 450 m (1500 ft) above the alternate under standard temperature conditions, and approach and land; and
 - (ii) have a reserve for contingencies specified by the operator and approved by the Authority.

8.6.2.16 FLIGHT PLANNING DOCUMENT DISTRIBUTION AND RETENTION—COMMERCIAL AIR TRANSPORT

- (a) For commercial air transport operations, the PIC shall complete and sign the following flight preparation documents before departure:
 - (1) An operational flight plan, including NOTAMs and weather pertinent to the flight planning decisions regarding minimum fuel supply, en-route performance, and destination and alternate aerodromes
 - (2) A load manifest, showing the distribution of the load, the CG, take-off and landing mass and compliance with maximum operating mass limitations, and performance analysis; and
 - (3) An applicable aircraft technical log page, if mechanical irregularities were entered after a previous flight, maintenance or inspection functions were performed or an approval for return to service was issued at the departure aerodrome.
- (b) No person may take-off an aircraft in commercial air transport unless all flight release documents, signed by the PIC, are retained and available at the point of departure.
- (c) The PIC shall carry on the aircraft, to the destination aerodrome, a copy of the documents specified in paragraph 8.6.2.16(a) of this subsection.
- (d) Completed flight preparation documents shall be kept by the AOC holder for a period of 3 months.

Note 1: The Authority may approve a different retention location where all documents can be available for subsequent review.

Note 2: The requirements for flight plans are contained in ICAO Annex 2 and ICAO Doc 4444, Procedures for Air Navigation Services – Air Traffic Management (PANS-ATM).

8.6.2.17 AIRCRAFT LOADING, MASS AND BALANCE

- (a) No person may operate an aircraft unless all loads carried are properly distributed and safely secured.
- (b) No person may operate an aircraft unless the calculations for the mass of the aeroplane the CG location indicate that the flight can be conducted safely, taking into account the flight conditions expected.

Note: When load masters, load planners or other qualified personnel are provided by the AOC holder in a commercial air transport operation, the PIC may delegate these responsibilities, but shall ascertain that proper loading procedures are followed.

- (c) For commercial air transport operations, no PIC may commence a flight unless the PIC is satisfied that the loading and mass and balance calculations contained in the load manifest are accurate and comply with the aircraft limitations.

8.6.2.18 MAXIMUM ALLOWABLE MASS TO BE CONSIDERED ON ALL LOAD MANIFESTS

- (a) The PIC shall ensure that the maximum allowable mass for a flight does not exceed the maximum allowable take-off mass:
 - (1) For the specific runway and conditions existing at the take-off time; and

- (2) Considering anticipated fuel and oil consumption that allows compliance with applicable en-route performance, landing mass, and landing distance limitations for destination and alternate aerodromes.

8.6.2.19 FLIGHT RELEASE REQUIRED—COMMERCIAL AIR TRANSPORT

- (a) No person may start a flight under a flight following system without specific authority from the person authorised by the AOC holder to exercise operational control over the flight.
- (b) No person may commence a passenger-carrying flight in commercial air transport unless a qualified person authorised by the AOC holder to perform operational control functions has issued a flight release for that specific operation or series of operations.

8.6.2.20 OPERATIONAL FLIGHT PLAN—COMMERCIAL AIR TRANSPORT

- (a) No person may commence a flight unless the operational flight plan has been signed by the PIC.
- (b) A PIC may sign the operational flight plan only when the PIC and the person authorised by the operator to exercise operational control have determined that the flight can be safely completed.

Note: The operational flight plan shall include the routing and fuel calculations, with respect to the meteorological and other factors expected, to complete the flight to the destination and all required alternates.

- (c) The PIC signing the operational flight plan shall have access to the applicable flight planning information for fuel supply, alternate aerodromes, weather reports and forecasts and NOTAMs for the route and aerodrome.
- (d) No person may continue a flight from an intermediate aerodrome without a new operational flight plan if the aircraft has been on the ground for more than 6 hours.

8.6.2.21 TIME CAPABILITY OF CARGO COMPARTMENT FIRE SUPPRESSION SYSTEM

- (a) No person may plan a flight if the diversion time to an aerodrome where a safe landing could be made exceeds the cargo compartment fire suppression time capability of the aeroplane, when one is identified in the relevant aeroplane documentation, unless the Authority specifies a reduction of the operational safety margin.

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.

Note 3: Refer to ICAO Annex 6, Part I: 4.7 and Attachment B, for considerations of time capability of cargo compartment fire suppression systems for aeroplanes engaged in EDTO.

8.7 AIRCRAFT OPERATING AND PERFORMANCE LIMITATIONS

8.7.1 ALL AIRCRAFT**8.7.1.1 APPLICABILITY**

- (a) This Section prescribes the operating and performance limitations for all civil aircraft.

8.7.1.2 GENERAL

- (a) No person may operate an aircraft that:
- (1) Exceeds its designed performance limitations for any operation, as established by the State of Registry;
 - (2) Exceeds the operating limitations contained in the Aircraft Flight Manual, or its equivalent;
 - (3) Exceeds the terms of its certificate of airworthiness; or
 - (4) Exceeds the mass limitations, if applicable, imposed by the terms of its noise certification standards, as contained in the applicable part of ICAO Annex 16, Volume I, unless otherwise approved by the Authority.

8.7.1.3 AIRCRAFT PERFORMANCE CALCULATIONS

- (a) Each operator shall ensure that the performance data contained in the Aircraft Flight Manual, Rotorcraft Flight Manual, or other authorised source is used to determine compliance with the appropriate requirements of 8.7 of this part.
- (b) When applying performance data, each person performing calculations shall account for all factors that significantly affect the performance of the aircraft configuration, including, but not limited to, the:
- (1) Mass of the aeroplane;
 - (2) Operating procedures;
 - (3) Pressure-altitude appropriate to the elevation of the aerodrome;
 - (4) Runway slope;
 - (5) Ambient temperature;
 - (6) Wind;
 - (7) Surface conditions of the runway at the expected time of use (e.g., the presence of snow, slush, water and/or ice for landplanes, water surface condition for seaplanes); and
 - (8) Operation of any system or systems that may have an adverse effect on performance.
- (c) The factors described in paragraph 8.7.1.3(b) of this subsection shall be taken into account directly as operations parameters or indirectly by means of allowances or margins, that may be provided in the design performance limits or in the terms of the AOC in accordance with which the aeroplane is being operated.

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

Note 2: Guidelines for using runway surface condition information on board aircraft are contained in ICAO Doc 9981, Procedures for Air Navigation Services – Aerodromes (PANS-Aerodromes), and ICAO Doc 10064, Aeroplane Performance Manual.

8.7.1.4 GENERAL MASS AND OBSTRUCTION CLEARANCE LIMITATIONS

- (a) No person may take-off an aircraft without ensuring that the maximum allowable mass for a flight does not exceed the maximum allowable take-off or landing mass, or any applicable en-route performance or landing distance limitations considering the:
 - (1) Condition of the take-off and landing areas to be used;
 - (2) Gradient of runway to be used (landplanes only);
 - (3) Pressure altitude;
 - (4) Ambient temperature;
 - (5) Current and forecast winds; and
 - (6) Any known conditions (e.g., atmospheric and aircraft configuration) that may adversely affect aircraft performance, or compliance with noise certification standards if required.
- (b) No person may take-off an aircraft at a mass that, assuming normal engine operation, cannot safely clear all obstacles during all phases of flight, including all points along the intended en-route path or any planned diversions.

8.7.2 AIRCRAFT USED IN COMMERCIAL AIR TRANSPORT

8.7.2.1 APPLICABILITY

- (a) This Section prescribes aircraft performance and operating limitations for aircraft used in commercial air transport operations, except for those used by air transport operators holding a special authorization or waiver granted by the Authority, that exempts the aircraft from specific operating and performance limitations.

8.7.2.2 GENERAL

- (a) Each person operating an aircraft engaged in commercial air transport shall comply with the provisions of Section 8.7.2. of this part.
- (b) Each person operating a rotorcraft identified as Class 1, 2, or 3 in international commercial air transport shall comply with the code of performance prescribed in IS: 8.7.2.2(B).
- (c) The Authority may grant exemptions in accordance with Part 1 of these regulations, from the requirements of Section 8.7.2 of this part if special circumstances make a literal observance of a requirement unnecessary for safety.
- (d) Where full compliance with the requirements of Section 8.7.2 of this part cannot be shown due to specific design characteristics (e.g., seaplanes, airships, or supersonic aircraft), the operator shall apply approved performance standards that ensure a level of safety not less restrictive than those of relevant requirements of this Section.

- (e) No person may operate in revenue passenger-carrying a single-engine aircraft or an aircraft type certificated for operation by a single pilot unless that aircraft is continually operated in daylight, VFR, excluding over-the-top, and over routes and diversions therefrom that permit a safe forced landing to be executed in the event of an engine failure.
- (1) Notwithstanding Subsection 8.7.2.2(e) of this subsection, the Authority may approve single-pilot operations in propeller driven, turbine-powered aircraft under IFR, at night, or under IMC for aircraft with a maximum certificated take-off mass of 5 700 kg (12 566 lb) or less and a maximum approved passenger seating configuration of nine or less, provided it meets the equipment requirements of Part 7 of these regulations.
 - (2) Notwithstanding paragraph 8.7.2.2(e)(1) of this subsection, the Authority may approve single-pilot operations in propeller-driven, turbine-powered aircraft under IFR, at night, or under IMC for aircraft with a maximum certificated take-off mass of 5 700 kg (12 566 lb) or less with a passenger seating configuration of more than 9 passengers if the aircraft is type certificated for operations by a single pilot, provided it meets the equipment requirements of Part 7 of these regulations and the Authority has authorised an exemption from paragraph 8.7.2.2(e)(1) of this subsection in the operator's operations specifications. If such operations are to be conducted outside Curacao, the State shall have an arrangement with the States where operations will be conducted.

Note: Subsection 8.7.2.2(e)(2) of this subsection is not currently in compliance with ICAO Annex 6, Part I: 4.9.1, but is included here at the request of States that operate aircraft with a passenger seating configuration of 14. ICAO is giving consideration to changing the passenger seating configuration requirements of nine or less in propeller-driven aircraft.

- (f) No person may operate a multi-engine aircraft in revenue passenger-carrying operations that is unable to comply with any of the performance limitations prescribed in 8.7.2.5 through 8.7.2.9 of this part unless that aircraft is continually operated:
- (1) In daylight;
 - (2) VFR, excluding over-the-top operations; and
 - (3) At a mass that will allow it to climb, with the critical engine inoperative, at least 15 m (50 ft) a minute when operating at the MEAs of the intended route or any planned diversion, or at 1500 m (5,000 ft) MSL, whichever is higher.
- (g) Multiengine aircraft that are unable to comply with paragraph 8.7.2.2(f) of this subsection are, for the purpose of this section, considered to be single-engine aircraft and shall comply with the requirements of paragraph 8.7.2.2(e) of this subsection.

Note: ICAO Doc 9388, Manual of Model Regulations for National Control of Flight Operations and Continuing Airworthiness of Aircraft, Second Edition, paragraphs 3.2.1.1 and 3.2.2.1, provides additional guidance.

8.7.2.3 SINGLE AND MULTI-ENGINE AEROPLANE OPERATIONS

- (a) No person may operate a single-engine aeroplane in revenue passenger-carrying operations unless that aeroplane is continually operated in daylight, VFR, and over such routes and diversions therefrom that permit a safe forced landing to be executed in the event of an engine failure.
- (1) Notwithstanding paragraph 8.7.2.3(a) of this subsection, the Authority may approve single-engine operations in propeller-driven, turbine-powered aeroplanes under IFR, at night, or under IMC for aeroplanes with a maximum certificated take-off mass of 5 700 kg (12 566 lb)

or less and a maximum approved passenger seating configuration of nine or less, provided it meets the equipment requirements of Part 7 of these regulations.

- (2) Notwithstanding paragraph 8.7.2.3(a)(1) of this subsection, the Authority may approve single-engine operations in propeller-driven, turbine-powered aeroplanes under IFR, at night, or under IMC for aeroplanes with a maximum certificated take-off mass of 5 700 kg (12 566 lb) or less with a passenger seating configuration of more than nine passengers if the aeroplane is type certificated for operations by a single pilot, provided it meets the equipment requirements of Part 7 of these regulations and the Authority has authorised an exemption from paragraph 8.7.2.3(a)(1) of this subsection in the operator's operations specifications. If such operations are to be conducted outside Curacao, Curacao shall have an arrangement with the States where operations will be conducted
- (b) No person shall operate a single-engine turbine-powered aeroplanes at night and/or in IMC unless the airworthiness certification of the aeroplane is appropriate and acceptable to the Authority and the overall safety of the operation is consistent with commercial air transportation operations as provided by:
 - (1) The reliability of the turbine engine;
 - (2) The operator's maintenance procedures, operating practices, and flight dispatch procedures;
 - (3) Crew training programmes; and
 - (4) Equipment and additional requirements provided in accordance with paragraph 8.7.2.3(d) of this subsection.
- (c) No person shall operate a single-engine turbine-powered aeroplane at night and/or in IMC unless the aeroplane has an engine trend monitoring system, and those aeroplanes for which the individual certificate of airworthiness is first issued on or after 01 January 2005 shall have an automatic trend monitoring system.
- (d) IS: 8.7.2.3 prescribes additional airworthiness and operational requirements applicable to the operation of single-engine turbine-powered aeroplanes at night and/or in IMC with respect to:
 - (1) Turbine engine reliability
 - (2) Systems and equipment
 - (3) MEL;
 - (4) Aircraft Flight Manual information
 - (5) Event reporting
 - (6) Operator planning
 - (7) Flight crew experience, training and checking
 - (8) Route limitations over water; and
 - (9) Operator certification or validation
- (e) No person may operate a multi-engine aeroplane in revenue passenger-carrying operations that is unable to comply with any of the performance limitations of 8.7.2.4 through 8.7.2.8 of this part unless that aeroplane is continually operated:
 - (1) In daylight;
 - (2) In VFR, excluding over the top operations; and

- (3) At a mass that will allow it to climb, with the critical engine inoperative, at least 15 m (50 ft) a minute when operating at the MEAs of the intended route or any planned diversion, or at 1500 m (5000 ft) MSL, whichever is higher.
- (f) Multi-engine aeroplanes that are unable to comply with paragraph 8.7.2.3(e)(3) of this subsection are, for the purpose of this section, considered to be a single-engine aeroplane and shall comply with the requirements of paragraph 8.7.2.3(a) of this subsection.

Note: ICAO Doc 9388, Manual of Model Regulations for National Control of Flight Operations and Continuing Airworthiness of Aircraft, Second Edition, paragraphs 3.2.1.1 and 3.2.2.1, provides additional guidance.

8.7.2.4 AIRCRAFT PERFORMANCE CALCULATIONS

- (a) No person may take off an aircraft used in commercial air transport without ensuring that the applicable operating and performance limitations required for this subsection can be accurately computed based on the Aircraft Flight Manual, Rotorcraft Flight Manual, or other data source approved by the Authority.
- (b) Each person calculating performance and operating limitations for aircraft used in commercial air transport shall ensure that performance data used to determine compliance with this section can, during any phase of flight, accurately account for:
 - (1) Any reasonably expected adverse operating conditions that may affect aircraft performance;
 - (2) One engine failure for aircraft having two engines, if applicable; and
 - (3) Two engine failure for aircraft having three or more engines, if applicable.
- (c) When calculating the performance and limitation requirements of 8.7.2.5 through 8.7.2.9 of this part, each person performing the calculation shall, for all engines operating and for inoperative engines, accurately account for:
 - (1) In all phases of flight:
 - (i) The effect of fuel and oil consumption on aircraft mass;
 - (ii) The effect of fuel consumption on fuel reserves resulting from changes in flight paths, winds, and aircraft configuration;
 - (iii) The effect of fuel jettisoning on aircraft mass and fuel reserves, if applicable and approved;
 - (iv) The effect of any ice protection system, if applicable and weather conditions require its use;
 - (v) Ambient temperatures and winds along intended route and any planned diversion; and
 - (vi) Flight paths and minimum altitudes required to remain clear of obstacles; and
 - (2) During take-off and landing:
 - (i) The condition of the take-off runway or area to be used, including any contaminants (e.g., water, slush, snow, ice);
 - (ii) The gradient of runway to be used;
 - (iii) The runway length including clearways and stopways, if applicable;

- (iv) Pressure altitudes at take-off and landing sites;
- (v) Current ambient temperatures and winds at take-off;
- (vi) Forecast ambient temperatures and winds at each destination and planned alternate landing site;
- (vii) The ground handling characteristics (e.g., braking action) of the type of aircraft; and
- (viii) Landing aids and terrain that may affect the take-off path, landing path, and landing roll.

Note 1: Where conditions are different from those on which the performance is based, compliance may be determined by interpolation or by computing the effects of changes in the specific variables, if the results of the interpolation or computations are substantially as accurate as the results of direct tests.

Note 2: To allow for wind effect, take-off and landing data based on still air may be corrected by taking into account not more than 50 per cent of any reported headwind component and not less than 150 per cent of any reported tailwind component.

8.7.2.5 TAKE-OFF LIMITATIONS

- (a) Aeroplanes. No person may take-off an aeroplane used in commercial air transport unless the following requirements are met when determining the maximum permitted take-off mass:
 - (1) The take-off run shall not be greater than the length of the runway.
 - (2) For turbine-powered aeroplanes:
 - (i) The take-off distance shall not exceed the length of the runway plus the length of any clearway, except that the length of any clearway included in the calculation shall not be greater than one-half the length of the runway; and
 - (ii) The accelerate-stop distance shall not exceed the length of the runway, plus the length of any stopway, at any time during take-off until reaching V1.
 - (3) For reciprocating-engine aeroplanes:
 - (i) The accelerate-stop distance shall not exceed the length of the runway at any time during take-off until reaching V1.
 - (4) If the critical engine fails at any time after the aeroplane reaches V1, to continue the take-off and reach a height, as indicated by the take-off path data, before passing over the end of the runway, either:
 - (i) By a height of at least 9 m (35 ft) vertically for turbine-powered aeroplanes or 15 m (50 ft) for reciprocating-engine aeroplanes; and
 - (ii) By at least 60 m (200 ft) horizontally within the aerodrome boundaries and by at least 90 m (300 ft) horizontally after passing the boundaries, without banking more than 15 degrees at any point on the take-off flight path.
- (b) Helicopters. No person may take-off a helicopter used in commercial air transport that, in the event of a critical engine failure, cannot:
 - (1) For Class 1 helicopters:
 - (i) At or before the take-off decision point, discontinue the take-off and stop within the rejected take-off area; or

- (ii) After the take-off decision point, continue the take-off and then climb, clearing all obstacles along the flight path, until a suitable landing site is found.
- (2) For Class 2 helicopters:
 - (i) Before reaching a defined point after take-off, safely execute a forced landing within the rejected take-off area, or
 - (ii) At any point after reaching a defined point after take-off, continue the take-off and then climb, clearing all obstacles along the flight path, until a suitable landing site is found.
- (3) For Class 3 helicopters:
 - (i) Clear the obstacles along its flight path by an adequate margin; or
 - (ii) Maintain minimum flight altitude; or
 - (iii) At engine failure permit a safe, forced landing.

Note: ICAO Doc 9388, Manual of Model Regulations for National Control of Flight Operations and Continuing Airworthiness of Aircraft, Second Edition, paragraphs 3.2.4.1.1, 3.2.5.1, and 3.2.5.2, and ICAO Doc 10064, Aeroplane Performance Manual, provide additional guidance.

8.7.2.6 EN-ROUTE LIMITATIONS- AEROPLANE—ALL ENGINES OPERATING

- (a) No person may take off a reciprocating-engine aeroplane used in commercial air transport at a mass that does not allow a rate of climb of at least $6.9 V_{SO}$, (that is, the number of feet per minute obtained by multiplying the aeroplane's minimum steady flight speed by 6.9) with all engines operating, at an altitude of at least 300 m (1 000 ft) above all terrain and obstructions within 10 miles of each side of the track.

8.7.2.7 EN-ROUTE LIMITATIONS—ONE ENGINE INOPERATIVE

- (a) AEROPLANES. No person may take-off an aeroplane used in commercial air transport having two engines unless that aeroplane can, in the event of a power failure at the most critical point en-route, continue the flight to a suitable aerodrome where a landing can be made while allowing:
 - (1) For reciprocating-engine aeroplanes:
 - (i) At least a rate of climb of $(0.079-0.106/N) V_{SO}^2$ (when V_{SO} is expressed in knots) at an altitude of 300 m (1 000 ft) above all terrain and obstructions within 9.3 km (5 NM) on each side of the intended track; and
 - (ii) A positive slope at an altitude of at least 450 m (1500 ft) above the aerodrome where the aeroplane is assumed to land.
 - (2) For turbine-powered transport category aeroplanes:
 - (i) A positive slope at an altitude of at least 300 m (1000 ft) above all terrain and obstructions within 9.3 km (5 NM), on each side of the intended track;
 - (ii) A net flight path from cruising altitude to the intended landing aerodrome that allows at least 600 m (2000 ft) clearance above all terrain and obstructions within 9.3 km (5 NM), on each side of the intended track; and

- (iii) A positive slope at an altitude of at least 450 m (1500 ft) above the aerodrome where the aeroplane is assumed to land;

Note 1: The climb rate specified in paragraph 8.7.2.7(a)(1)(i) of this subsection may be amended to $0.026 V_{so}^2$ for large transport category aircraft issued a type certificate before 1953.

Note 2: The 9.3 km (5 NM) clearance margin stated in paragraph 8.7.2.7(a) of this subsection shall be increased to 18.5 km (10 NM) if navigational accuracy does not meet the 95% containment level.

- (b) **HELICOPTERS.** No person shall take-off a helicopter used in commercial air transport having two engines unless that helicopter can, in the event of the critical engine failing at any point in the en-route phase, continue the flight to the destination or alternate landing site without flying below the minimum flight altitude at any point and clearing all obstacles in the approach path by a safe margin.

Note 3: ICAO Doc 9388, Manual of Model Regulations for National Control of Flight Operations and Continuing Airworthiness of Aircraft, Second Edition, paragraphs 3.2.4.2 and 3.2.5.4, provides additional guidance.

8.7.2.8 EN-ROUTE LIMITATIONS—TWO ENGINES INOPERATIVE

- (a) **AEROPLANES.** No person may take-off an aeroplane used in commercial air transport having three or more engines at such a mass where there is no suitable landing aerodrome within 90 minutes at any point along the intended route (with all engines operating at cruising power), unless that aeroplane can, in the event of simultaneous power failure of two critical engines at the most critical point along that route, continue to a suitable landing aerodrome while allowing:
 - (1) For turbine-powered aeroplanes:
 - (i) A net flight path (considering the ambient temperatures anticipated along the track) clearing vertically by at least 600 m (2000 ft) all terrain and obstructions within 9.3 km (5 NM) on each side of the intended track;
 - (ii) A positive slope at 450 m (1500 ft) above the aerodrome of intended landing; and
 - (iii) Enough fuel to continue to the aerodrome of intended landing, to arrive at an altitude of at least 450 m (1500 ft) directly over the aerodrome, and thereafter to fly for 15 minutes at cruise power.

Note: The consumption of fuel and oil after the engine failure is the same as the consumption that is allowed for in the net flight path data in the Aircraft Flight Manual.

- (2) For reciprocating-engine aeroplanes:
 - (i) A rate of climb at $0.013 (V_{so})^2$ feet per minute (that is, the number of feet per minute is obtained by multiplying the number of knots squared by 0.013) at an altitude of 300m (1000 ft) above the highest ground or obstruction within 18.6 km (10 NM) on each side of the intended track, or at an altitude of 1500 m (5000 ft), whichever is higher; and
 - (ii) Enough fuel to continue to the aerodrome of intended landing and to arrive at an altitude of at least 300 m (1000 ft) directly over that aerodrome.

Note 1: When the two engines of the reciprocating-engine aeroplane are predicted to fail at an altitude above the prescribed minimum altitude, compliance with the prescribed rate of climb need not be shown during the descent from the cruising altitude to the prescribed minimum altitude, if those requirements can

be met once the prescribed minimum altitude is reached, and assuming descent to be along a net flight path and the rate of descent to be $0.013 V_{so}^2$ greater than the rate in the approved performance data.

Note 2: If fuel jettisoning is authorised (or planned), the aeroplane's mass at the point where the two engines fail is considered to be not less than that which would include enough fuel to proceed to an aerodrome and to arrive at an altitude of at least 300 m (1000 ft) directly over that aerodrome.

- (b) Helicopters. No person shall take-off a Class 1 or Class 2 helicopter used in commercial air transport having three or more engines unless that helicopter can, in the event of two critical engines failing simultaneously at any point in the en-route phase, continue the flight to a suitable landing site.

Note: ICAO Doc 9388, Manual of Model Regulations for National Control of Flight Operations and Continuing Airworthiness of Aircraft, Second Edition, paragraphs 3.2.4.3 and 3.2.5.5, provides additional guidance.

8.7.2.9 LANDING LIMITATIONS

- (a) AEROPLANES. No person may take-off an aeroplane used in commercial operations unless its mass on arrival at either the intended destination aerodrome or any planned alternate aerodrome would allow a full stop landing from a point 15 m (50 ft) above the intersection of the obstruction clearance plane and the runway, and within:

- (1) For turbine-powered aeroplanes, 60 per cent of the effective length of each runway; and
- (2) For reciprocating-engine aeroplanes, 70 per cent of the effective length of each runway.

Note: Guidelines for using runway surface condition information on board aircraft are contained in ICAO Doc 10064, Aeroplane Performance Manual.

- (b) For the purpose of determining the allowable landing mass at the destination aerodrome, each person determining the landing limit shall ensure that:
 - (1) The aeroplane is landed on the most favourable runway and in the most favourable direction, in still air; or
 - (2) The aeroplane is landed on the most suitable runway considering the probable wind velocity and direction, runway conditions, the ground handling characteristics of the aeroplane, and other conditions such as landing aids and terrain.

Note: If the runway at the landing destination is reported or forecast to be wet or slippery, the landing distance available shall be at least 115 per cent of the required landing distance unless, based on a showing of actual operating landing techniques on wet or slippery runways, a shorter landing distance (but not less than that required paragraph 8.7.2.9(a) of this subsection has been approved for a specific type and model aeroplane and this information is included in the Aircraft Flight Manual.

- (c) A turbine-powered transport category aeroplane that would be prohibited from taking off because it could not meet the requirements of paragraph 8.7.2.9(a)(1) of this subsection may take off if an alternate aerodrome is specified that meets all the requirements of paragraph 8.7.2.9(a) of this subsection.
- (d) HELICOPTERS. No person may take-off a helicopter used in commercial air transport unless, with all engines operating on arrival at the intended destination landing site or any planned alternate landing, it can clear all obstacles on the approach path and can land and stop within the landing distance available.

- (e) HELICOPTERS. No person may take-off a helicopter used in commercial air transport unless, in the event of any engine becoming inoperative in the approach and landing phase on arrival at the intended destination landing site or any planned alternate landing, it can:
 - (1) For Class 1 helicopters:
 - (i) Before the landing decision point, clear all obstacles on the approach path and be able 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; or
 - (ii) After the landing decision point, land and stop within the landing distance available.
 - (2) For Class 2 helicopters:
 - (i) Before reaching a defined point before landing, safely execute a forced landing within the landing distance available.
 - (3) For Class 3 helicopters:
 - (i) Safely execute a forced landing within the landing distance available.

Note: ICAO Doc 9388, Manual of Model Regulations for National Control of Flight Operations and Continuing Airworthiness of Aircraft, Second Edition, paragraphs 3.2.4.4.1, 3.2.4.4.2, 3.2.4.4.3, 3.2.5.6, and 3.2.5.7, provides additional guidance.

8.7.2.10 ADDITIONAL REQUIREMENTS FOR CLASS 3 HELICOPTERS OPERATING IN INSTRUMENT METEOROLOGICAL CONDITIONS

- (a) Except for special VFR flights, no person may operate a performance Class 3 helicopter in IMC unless:
 - (1) The surface environment over which the operation is to be performed is acceptable to the Authority;
 - (2) The helicopter is certificated for flight under IFR; and
 - (3) The operation is approved by the Authority taking into consideration the overall level of safety provided by:
 - (i) The reliability of the engines; and
 - (ii) The operator's maintenance procedures, operating practices, crew training programmes; and equipment including the operator's vibration health monitoring practices for the tail-rotor drive system.
- (b) Except for special VFR flights, no person may operate a performance Class 3 helicopter in IMC unless the operator has an engine trend monitoring system and uses the instruments, systems and operational/maintenance procedures to monitor the engines that are recommended by the helicopter manufacturer.

Note: See ICAO Annex 6, Part III, Chapter 3, for additional guidance on helicopter performance operating limitations.

8.8 FLIGHT RULES

8.8.1 ALL OPERATIONS

8.8.1.1 OPERATION OF AIRCRAFT ON THE GROUND

- (a) No person may taxi an aircraft on the movement area of an aerodrome unless the person at the controls:
 - (1) Has been authorised by the owner, the lessee, or a designated agent;
 - (2) Is fully competent to taxi the aircraft;
 - (3) Is qualified to use the radio if radio communications are required; and
 - (4) Has received instruction from a competent person in respect of aerodrome layout, and where appropriate, information on routes, signs, marking, lights, ATC signals and instructions, and phraseology and procedures, and is able to conform to the operational standards required for safe aircraft movement at the aerodrome.
- (b) No person shall cause a helicopter rotor to be turned under power unless there is a qualified pilot at the controls.
- (c) No person shall taxi an aircraft under the guidance of a signalman unless:
 - (1) The standard marshalling signals to the aircraft are provided in a clear and precise manner using the signals as prescribed by the Authority in IS: 8.8.2.11.
 - (2) The signalman is wearing a distinctive fluorescent identification vest to allow the flight crew to identify that he or she is the person responsible for the marshalling operation; and
 - (3) The signalman and all participating ground personnel are using daylight-fluorescent wands, table-tennis bats or gloves for all signalling during daylight hours and illuminated wands at night or in low visibility.

8.8.1.2 TAKE-OFF CONDITIONS

- (a) Before commencing take-off, a PIC shall ensure that:
 - (1) According to the available information, the weather at the aerodrome and the condition of the runway intended to be used will allow for a safe take-off and departure; and
 - (2) The RVR or visibility in the take-off direction of the aircraft is equal to or better than the applicable minimum.

8.8.1.3 FLIGHT INTO KNOWN OR EXPECTED ICING

- (a) No person may take-off an aircraft or continue to operate an aircraft en-route when icing conditions are expected or encountered, without ensuring that the aircraft is certified for icing operations and has sufficient operational de-icing or anti-icing equipment.

- (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 which might adversely affect the performance or controllability of the aircraft.
- (c) For commercial air transport operations, no person may take-off an aircraft when conditions are such that frost, ice or snow may reasonably be expected to adhere to the aircraft, unless the aircraft has been inspected for icing, and the procedures approved for the AOC holder by the Authority are followed to ensure ground de-icing and anti-icing is accomplished.

8.8.1.4 ALTIMETER SETTINGS

- (a) Each person operating an aircraft except a balloon or a glider, shall maintain the cruising altitude or FL by reference to an altimeter setting.
- (b) The lowest usable FL is determined by the atmospheric pressure in the area of operation.
- (c) The flight crew shall use the altimeter settings provided by the ATC service of Curaçao.

Note: In areas of the world where it may not be possible to get an altimeter setting, reference the State's procedures in the AIP.

8.8.1.5 MINIMUM SAFE ALTITUDES—GENERAL

- (a) Except when necessary for take-off or landing, no person may operate an aircraft below the following altitudes:
- (b) ANYWHERE. An altitude allowing, if a power unit fails, continuation of flight or an emergency landing without undue hazard to persons or property on the surface.
- (c) OVER CONGESTED AREAS. Over any congested area of a city, town, or settlement, or over any open-air assembly of persons, an altitude of 300 m (1000 ft) above the highest obstacle within a horizontal radius of 600 m (2000 ft) of the aircraft.
- (d) OVER OTHER THAN CONGESTED AREAS. An altitude of 150 m (500 ft) above the surface, except over open water or sparsely populated areas where the aircraft may not be operated closer than 150 m (500 ft) to any person, vessel, vehicle, or structure.
- (e) HELICOPTERS. Pilots of helicopters are not subject to the proximity restrictions provided they are operated in a manner that is not hazardous to persons and property on the surface. The PIC of a helicopter shall comply with any routes or altitudes for the area that are prescribed for helicopters by the Authority.
- (f) Altitudes are prescribed by ICAO Annex 2: 3.1.2, 4.6; 5.1.2.

8.8.1.6 MINIMUM SAFE VISUAL FLIGHT RULES ALTITUDES

- (a) Except when necessary for take-off or landing, no person may operate an aircraft below the following altitudes:
 - (1) During the day, under VFR, no person may operate an aircraft at an altitude less than 300 m (1000 ft) above the surface or within 300 m (1000 ft) of any mountain, hill, or other obstruction to flight; and

- (2) At night, under VFR, no person may operate an aircraft at an altitude less than 300 m (1000 ft) above the highest obstacle within a horizontal distance of 8 km (5 SM) from the centre of the intended course, or, in designated mountainous areas, less than 600 m (2000 ft) above the highest obstacle within a horizontal distance of 8 km (5 SM) from the centre of the intended course.

8.8.1.7 INSTRUMENT APPROACH OPERATING MINIMA

- (a) No person may operate to or from an aerodrome using operating minima lower than those which may be established for that aerodrome by the State of the Aerodrome, unless that State specifically approves that operation in accordance with the provisions prescribed in IS: 8.8.1.7.
 - (1) For commercial operators, the State of the Operator, and for general aviation, the State of Registry, shall authorise 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 LVO, the State of the Operator shall issue a specific approval. Such authorisations shall not affect the classification of the IAP.
 - (2) Operational credit includes:
 - (i) For the purposes of an approach ban, a minima below the aerodrome operating minima;
 - (ii) Reducing or satisfying the visibility requirements; or
 - (iii) Requiring fewer ground facilities as compensated for by airborne capabilities.

Note 1: Guidance on operational credit for aircraft equipped with automatic landing systems, a HUD or equivalent displays, EVS, SVS, and CVS is contained in ICAO Annex 6, Part I, Attachment I, and ICAO Doc 9365, Manual of All-Weather Operations.

Note 2: Information regarding a HUD or equivalent displays, including references to RTCA and EUROCAE documents, is contained in ICAO Doc 9365, Manual of All-Weather Operations.

Note 3: Automatic landing system – helicopter is an automatic approach using airborne systems that 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) No person may conduct instrument approach operations at an aerodrome below 800 m (2600 ft) visibility unless RVR information is provided.
- (c) 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:
 - (1) Type A: an MDH or a DH at or above 75 m (250 ft); and
 - (2) Type B: a DH below 75 m (250 ft). Type B instrument approach operations are categorized as:
 - (i) CAT I: a DH not lower than 60 m (200 ft) with either a visibility not less than 800 m or an RVR not less than 550 m;
 - (ii) CAT II: a DH lower than 60 m (200 ft) but not lower than 30 m (100 ft) and an RVR not less than 300 m;
 - (iii) CAT IIIA: a DH lower than 30 m (100 ft) or no DH and an RVR less than 300 m or no RVR limitations

- (d) The operating minima for 2D instrument approach operations using IAPs shall be determined by establishing an MDA or an MDH, minimum visibility and, if necessary, cloud conditions.
- (e) The operating minima for 3D instrument approach operations using IAPs shall be determined by establishing a decision altitude or DH and the minimum visibility or RVR.
- (f) The Authority shall issue a specific approval for instrument approach operations in low visibility which shall only be conducted when RVR information is provided
- (g) For take-off in low visibility, the State of Registry shall issue a specific approval for the minimum take-off RVR.

Note 1: Where DH and 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). 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 approach area that 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, LVO and navigation systems is contained in ICAO Doc 9365, Manual of All-Weather Operations.

Note 4: For guidance on applying a continuous descent final approach (flight technique on NPA procedures (2D instrument approach operations Type A), refer to ICAO Doc 8168, Procedures for Air Navigation Services – Aircraft Operations (PANS-OPS), Volume I, Section 4, Chapter 1. Continuous descent final approach with manual calculation of the required rate of descent (see ICAO Doc 8168, Volume I, Part I, Section 4: 1.7 and 1.8) are considered 2D instrument approach operations. Continuous descent final approach with advisory VNAV guidance calculated by on-board equipment (see ICAO Doc 8168, Part II, Section 5) are considered 3D instrument approach operations.

8.8.1.8 CATEGORY II AND III OPERATIONS—GENERAL OPERATING RULES

- (a) No person may operate a civil aircraft in a CAT II or CAT III operation unless:
 - (1) The PIC and CP of the aircraft hold the appropriate authorisations and ratings prescribed in Part 2 of these regulations;
 - (2) Each flight crew member has adequate knowledge of, and familiarity with, the aircraft and the procedures to be used; and
 - (3) The instrument panel in front of the pilot who is controlling the aircraft has appropriate instrumentation for the type of flight control guidance system that is being used.
- (b) Unless otherwise authorised by the Authority, no person may operate a civil aircraft in a CAT II or CAT III operation unless each ground component required for that operation and the related airborne equipment is installed and operating.
- (c) When the approach procedure being used provides for and requires the use of a DH, the authorised DH is the highest of the following:
 - (1) The DH prescribed by the approach procedure.

- (2) The DH prescribed for the PIC; or
 - (3) The DH for which the aircraft is equipped.
- (d) Unless otherwise authorised by the Authority, no pilot operating an aircraft in a CAT II or CAT III approach that provides and requires the use of a DH may continue the approach below the authorised DH unless the following conditions are met:
- (1) The aircraft is 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 manoeuvres, and where that descent rate will allow touchdown to occur within the touchdown zone of the runway of intended landing; and
 - (2) 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 30 m (100 ft) 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 touchdown zone or touchdown zone markings; or
 - (vi) The touchdown zone lights.
- (e) Unless otherwise authorised by the Authority, each pilot operating an aircraft shall immediately execute an appropriate missed approach whenever, before touchdown, the requirements of paragraph 8.8.1.8(d) of this subsection are not met.
- (f) No person operating an aircraft using a CAT III approach without DH may land that aircraft except in accordance with the provisions of the Letter of Authorisation issued by the Authority.
- (g) The Authority shall issue a specific approval for the minimum take-off RVR for take-off in low visibility.
- (h) No person may conduct CAT II or CAT III instrument approaches and landing operations below 800 m (2600 ft) visibility unless RVR information is provided.
- (i) The State of the Operator shall issue a specific approval for instrument approach operations in low visibility which shall only be conducted when RVR information is provided.
- (j) Paragraphs 8.8.1.8(a) through (g) of this subsection do not apply to operations conducted by AOC holders issued a certificate under Part 9 of these regulations. No person may operate a civil aircraft in a CAT II or CAT III operation conducted by an AOC holder unless the operation is conducted in accordance with that AOC holder's approved training programme and operations specifications.

Note: CAT II approval is required prior to obtaining CAT III approval.

Note 2: ICAO Doc 9365, Manual of All-Weather Operations, provides additional guidance.

Note 3: In general, visibility for take-off is defined in terms of RVR. An equivalent horizontal visibility may also be used.

8.8.1.9 CATEGORY II AND CATEGORY III MANUAL

- (a) Except as provided in paragraph 8.8.1.9(c) of this subsection, no person may operate a civil aircraft in a CAT II or CAT III operation unless:
 - (1) There is available in the aircraft a current and approved CAT II or CAT III manual, as appropriate, for that aircraft;
 - (2) The operation is conducted in accordance with the procedures, instructions, and limitations in the appropriate manual; and
 - (3) The instruments and equipment listed in the manual that are required for a particular CAT II or CAT III operation have been inspected and maintained in accordance with the maintenance programme contained in the manual.
- (b) Each operator shall keep a current copy of each approved manual at its main base of operations and shall make each manual available for inspection upon request by the Authority.
- (c) Paragraphs 8.8.1.9(a) and (b) of this subsection do not apply to operations conducted by an AOC holder issued a certificate under Part 9 of these regulations, which will have approved CAT II or CAT III operations included as a part of its OM. IS: 8.8.1.9 provides specific Category II and III Manual requirements.
- (d) Specific CAT II and CAT III manual requirements are prescribed in IS 8.8.1.9.

Note 1: CAT II approval is required to prior to obtaining CAT III approval.

Note 2: ICAO Doc 9365, Manual of All-Weather Operations, provides additional guidance.

8.8.1.10 EXEMPTION FROM CERTAIN CATEGORY II OPERATIONS

- (a) The Authority may grant an exemption from the requirements of 8.8.1.8 and 8.8.1.9 of this part for the operation of small aircraft in CAT II operations if the operator can demonstrate to the Authority that the proposed operation can be safely conducted.

Note: Such authorisation does not permit operation of the aircraft carrying persons or property for compensation or hire.

8.8.1.11 DIVERSION DECISION—ENGINE INOPERATIVE

- (a) Except as provided in paragraph 8.8.1.11(b) of this subsection, the PIC shall land the aircraft at the nearest suitable aerodrome at which a safe landing can be made whenever an engine of an aircraft fails or is shut down to prevent possible damage.
- (b) If not more than one engine of an aeroplane having three or more engines fails, or its rotation is stopped, the PIC may proceed to an aerodrome if the PIC decides that proceeding to that aerodrome is as safe as landing at the nearest suitable aerodrome after considering the:
 - (1) Nature of the malfunction and the possible mechanical difficulties that may occur if flight is continued;
 - (2) Altitude, mass, and usable fuel at the time of engine stoppage;
 - (3) Weather conditions en-route and at possible landing points;
 - (4) Air traffic congestion;
 - (5) Type of terrain; and

- (6) Familiarity with the aerodrome to be used.

8.8.1.12 OPERATING NEAR OTHER AIRCRAFT—INCLUDING FORMATION FLIGHTS

- (a) No person may operate an aircraft so close to another aircraft as to create a collision hazard.
- (b) No person may operate an aircraft in formation flight except:
 - (1) By arrangement with the PIC of each aircraft in the formation, and
 - (2) If in controlled airspace, in accordance with conditions prescribed by the appropriate air traffic authority, which includes that:
 - (i) The formation operates as a single aircraft with regard to navigation and position reporting;
 - (ii) Separation between aircraft in the flight shall be the responsibility of the flight leader and the PICs of the other aircraft in flight;
 - (iii) Separation between aircraft shall include periods of transition when aircraft are manoeuvring to attain their own separation within the formation and during join-up and break-away; and
 - (iv) A distance not exceeding 1 km (0.5 NM) laterally and longitudinally and 30 m (100 ft) vertically from the flight leader shall be maintained by each aircraft.
- (c) No person may operate an aircraft, carrying passengers for hire, in formation flight.

8.8.1.13 RIGHT-OF-WAY RULES—EXCEPT WATER OPERATIONS

- (a) GENERAL.
 - (1) Each pilot shall maintain vigilance so as to see and avoid other aircraft
 - (2) When a rule of this subsection gives another aircraft the right-of-way, the pilot shall give way to that aircraft and may not pass over, under, or ahead of it unless passing well clear and taking into account the effect of aircraft wake turbulence.
 - (3) Each pilot who has the right-of-way shall maintain his or her heading and speed but is still responsible for taking such action, including collision-avoidance manoeuvres based on resolution advisories provided by ACAS equipment, as will best avert collision.
- (b) IN DISTRESS. An aircraft in distress has the right-of-way over all other air traffic.
- (c) CONVERGING.
 - (1) When aircraft of the same category are converging at approximately the same altitude (except head-on, or approximately so), the aircraft to the other's right has the right-of-way.
 - (2) If the converging aircraft are of different categories:
 - (i) A balloon has the right-of-way over any other category of aircraft;
 - (ii) A glider has the right-of-way over an airship, and power driven heavier than air aircraft; and
 - (iii) An airship has the right-of-way over a power driven heavier than air aircraft

- (d) TOWING OR REFUELLING. An aircraft towing or refuelling other aircraft has the right-of-way over all other engine-driven aircraft, except aircraft in distress.
- (e) APPROACHING HEAD-ON. When aircraft are approaching each other head-on, or nearly so, each pilot of each aircraft shall alter course to the right.
- (f) OVERTAKING. Each aircraft that is being overtaken has the right-of-way and each pilot of an overtaking aircraft, whether climbing, descending or in horizontal flight, shall alter course to the right to pass well clear.
- (g) LANDING. Aircraft, while on final approach to land or while landing, have the right-of-way over other aircraft in flight or operating on the surface.
- (h) MORE THAN ONE LANDING AIRCRAFT. When two or more aircraft are approaching an aerodrome for the purpose of landing, the aircraft at the lower altitude has the right-of-way.
- (i) The PIC shall not take advantage of the right of way landing rules in paragraphs 8.8.1.13(g) and (h) in this subsection to cut in front of another aircraft that is on final approach to land or to overtake that aircraft.
- (j) EMERGENCY LANDING. Aircraft that are compelled to land have the right-of-way over other aircraft.
- (k) TAKING OFF. Aircraft taking off have the right-of-way over aircraft taxiing on the manoeuvring area of an aerodrome.
- (l) SURFACE MOVEMENT OF AIRCRAFT.
 - (1) APPROACHING HEAD-ON. When aircraft are approaching each other head-on, or approximately so, the pilot of each aircraft shall stop, or wherever practicable alter course to the right so as to keep well clear
 - (2) CONVERGING. When two aircraft are converging on a course, the pilot who has the other aircraft on his right shall give way.
 - (3) OVERTAKING. Each aircraft that is being overtaken has the right-of-way and each pilot of an overtaking aircraft shall keep well clear.
- (m) AIRCRAFT TAXIING ON THE MANOEUVRING AREA OF AN AERODROME.
 - (1) The pilot of an aircraft taxiing on the manoeuvring area shall stop and hold at all runway-holding positions unless otherwise authorised by the aerodrome control tower.
 - (2) The pilot of an aircraft taxiing on the manoeuvring area shall stop and hold at all lighted stop bars and may proceed further when the lights are switched off.
 - (3) The pilot of an aircraft taxiing on the manoeuvring area of an aerodrome shall give way to aircraft:
 - (i) taking off or about to take-off; or
 - (ii) landing or in the final stages of an approach to landing.

8.8.1.14 RIGHT-OF-WAY RULES—WATER OPERATIONS

- (a) GENERAL. Each person operating an aircraft on the water shall, insofar as possible, keep clear of all vessels and avoid impeding their navigation, and shall give way to any vessel or other aircraft that is given the right-of-way by any rule of this subsection.

- (b) CONVERGING OR CROSSING. When aircraft, or an aircraft and a vessel, are on crossing courses, the aircraft or vessel to the other's right has the right-of-way.
- (c) APPROACHING HEAD-ON. When aircraft, or an aircraft and a vessel, are approaching head-on, or approximately so, each shall alter its course to the right to keep well clear.
- (d) OVERTAKING. Each aircraft or vessel that is being overtaken has the right-of-way, and the one overtaking shall alter course to keep well clear.
- (e) SPECIAL CIRCUMSTANCES. When aircraft, or an aircraft and a vessel, approach so as to involve risk of collision, each aircraft or vessel shall proceed with careful regard to existing circumstances, including the limitations of the respective craft
- (f) LANDING AND TAKING OFF. Aircraft landing on or taking off from the water shall keep well clear of all vessels and shall avoid impeding their navigation.

8.8.1.15 USE OF AIRCRAFT LIGHTS

- (a) If an aircraft has red rotating beacon lights, or other lights installed to show that the engine is running, the pilot shall switch those lights on before starting engines and shall display those lights at all times the engines are running.
- (b) No person may operate an aircraft between the period from sunset to sunrise unless:
 - (1) The aircraft has lighted navigation lights; and
 - (2) If anti-collision lights are installed, those lights are lighted.
- (c) No person may park or move an aircraft between the period from sunset to sunrise in, or in a dangerous proximity to, a movement area of an aerodrome, unless the aircraft:
 - (1) Is clearly illuminated;
 - (2) Has lighted navigation lights, or
 - (3) Is in an area that is marked by obstruction lights, or
 - (4) Has lights to indicate when the engine is running.
- (d) No person may anchor an aircraft unless that aircraft:
 - (1) Has lighted anchor lights; or
 - (2) Is in an area where anchor lights are not required on vessels.
- (e) No person may operate an aircraft on water during the period from sunset to sunrise unless:
 - (1) The aircraft displays lights as required by the International Regulations for Preventing Collisions at Sea (most recent edition); or
 - (2) The aircraft displays lights as similar as possible in characteristics and position to those required by the International Regulations for Preventing Collisions at Sea if it is not practical to display the lights exactly as required.
- (f) A pilot is permitted to switch off or reduce the intensity of any flashing lights fitted to meet the requirements of this subsection if they do or are likely to:
 - (1) Adversely affect the satisfactory performance of duties; or
 - (2) Subject an outside observer to harmful dazzle.

8.8.1.16 SIMULATED INSTRUMENT FLIGHT

- (a) No person may operate an aircraft in simulated instrument flight unless:
 - (1) The aircraft has fully functioning dual controls,
 - (2) The other control seat is occupied by a safety pilot who holds at least a private pilot licence with category and class ratings appropriate to the aircraft being flown, and
 - (3) The safety pilot has adequate vision forward and to each side of the aircraft, or a competent observer in the aircraft adequately supplements the vision of the safety pilot.
- (b) No person may engage in simulated instrument flight conditions during commercial air transport operations.

8.8.1.17 IN-FLIGHT SIMULATION OF ABNORMAL SITUATIONS

- (a) No person may simulate an abnormal or emergency situation during commercial air transport operations.

8.8.1.18 DROPPING, SPRAYING, TOWING

- (a) Except under conditions prescribed by the Authority, no pilot may take the following actions:
 - (1) Dropping, dusting or spraying from an aircraft;
 - (2) Towing of aircraft or other objects; or
 - (3) Allowing parachute descents.

8.8.1.19 AEROBATIC FLIGHT

- (a) No person may operate an aircraft in aerobatic flight:
 - (1) Over any city, town or settlement;
 - (2) Over an open air assembly of persons;
 - (3) Within the lateral boundaries of the surface areas of Class B, C, D or E airspace designated for an aerodrome;
 - (4) Below an altitude of 450 m (1500 ft) above the surface;
 - (5) When the flight visibility is less than 5 km (3 SM), and
 - (6) Unless in compliance with any other conditions prescribed by the Authority.
- (b) No person may operate an aircraft in manoeuvres exceeding a bank of 60 degrees or pitch of 30 degrees from level flight attitude unless all occupants of the aircraft are wearing parachutes packed by a qualified parachute rigger, licensed in accordance with Part 2 of these regulations, in the preceding 12 calendar months.

8.8.1.20 FLIGHT TEST AREAS

- (a) No person may flight-test an aircraft except over open water, or sparsely populated areas having light air traffic.

8.8.1.21 PROHIBITED AREAS AND RESTRICTED AREAS

- (a) No person may operate an aircraft in a prohibited area, or in restricted areas, the particulars of which have been duly published, except in accordance with the conditions of the restrictions or by permission of the State over whose territory the areas are established.

8.8.1.22 OPERATIONS IN MINIMUM NAVIGATION PERFORMANCE SPECIFICATIONS OR REDUCED VERTICAL SEPARATION MINIMA AIRSPACE

- (a) No person may operate a civil aircraft of Curaçao registry in the North Atlantic airspace designated as MNPS airspace or in airspace designated as RVSM without a written authorisation issued by the Authority.
- (b) No person may operate an aircraft in MNPS or RVSM airspace, except in accordance with the conditions of the procedures and restrictions required for this airspace.

Note: Part 7 contains requirements regarding navigation equipment for operations in MNPS and RVSM airspace.

- (c) No person may operate an aircraft in airspace where a Regional Air Navigation Agreement, MNPS, or RVSM airspace has been prescribed, except in accordance with:
 - (1) The conditions of the procedures and restrictions required for this airspace; and
 - (2) A written authorisation issued by the Authority.
- (d) No person may operate a civil aircraft of Curacao registry in the North Atlantic airspace designated as NAT HLA airspace or in airspace designated as RVSM without a written authorisation issued by the Authority.

Note 1: ICAO bulletin NAT Doc 007, V.2018-2, North Atlantic Airspace and Operations Manual, has re-designated the North Atlantic MNPS airspace to the NAT HLA. ICAO Regional Air Navigation Agreements may be consulted for other specific airspace areas.

Note 2: ICAO Doc 9574, Manual on a 300 m (1 000 ft) Vertical Separation Minimum between FL 290 and FL 410 Inclusive, provides additional guidance.

Note 3: Part 7 of these regulations contains requirements regarding navigation equipment for operations in MNPS and RVSM airspace.

8.8.1.23 OPERATIONS ON OR IN THE VICINITY OF A CONTROLLED OR AN UNCONTROLLED AERODROME

- (a) When approaching to land at an aerodrome, each pilot of:
 - (1) An aeroplane shall make all turns of that aeroplane to the left; or to the right, if appropriately indicated by the Authorities having jurisdiction over that aerodrome; and
 - (2) A helicopter shall avoid the flow of aeroplanes.
- (b) When departing an aerodrome, each pilot of an aircraft shall comply with any traffic patterns established by the authorities having jurisdiction over that aerodrome.
- (c) Each pilot of an aircraft shall land and take-off into the wind unless safety, the runway configurations, or traffic considerations determine that a different direction is preferable.

- (d) Each pilot operating an aircraft either on or in the vicinity of an aerodrome shall:
 - (1) Observe other aerodrome traffic for the purpose of avoiding collision; and
 - (2) Conform with or avoid the pattern of traffic formed by other aircraft in operation.
- (e) Each pilot of an aircraft when operating to, from, or through an aerodrome having an operational control tower shall also comply with the requirements at Subsection 8.8.2.8 of this part.
- (f) Aerodrome traffic management at controlled and uncontrolled aerodromes may be supplemented or directed by the use of universal aviation signals, such as the light displays and visual markings prescribed in IS 8.8.2.11.

8.8.1.24 AERODROME TRAFFIC PATTERN ALTITUDES—TURBOJET, TURBOFAN, OR LARGE AIRCRAFT

- (a) When arriving at an aerodrome, the PIC of a turbojet, turboprop, or large aircraft shall enter the traffic pattern at least 450 m (1500 ft) AGL until further descent is required for landing.
- (b) When departing an aerodrome, the PIC of a turbojet, turboprop, or large aircraft shall climb to 450 m (1500 ft) AGL as rapidly as practicable.

8.8.1.25 COMPLIANCE WITH VISUAL AND ELECTRONIC GLIDE SLOPES

- (a) The PIC of an aeroplane approaching to land on a runway served by a visual approach slope indicator shall maintain an altitude at or above the glide slope until a lower altitude is necessary for a safe landing.
- (b) The PIC of a turbojet, turboprop, or large aeroplane approaching to land on a runway served by an ILS shall fly that aeroplane at or above the glide slope from the point of interception to the middle marker.

8.8.1.26 RESTRICTION OR SUSPENSION OF OPERATIONS: COMMERCIAL AIR TRANSPORT

- (a) If a PIC or an AOC holder knows of conditions, including aerodrome and runway conditions, that are a hazard to safe operations, that person shall restrict or suspend all commercial air transport operations to such aerodromes and runways as necessary until those conditions are corrected.

8.8.1.27 CONTINUATION OF FLIGHT WHEN DESTINATION AERODROME IS TEMPORARILY RESTRICTED—COMMERCIAL AIR TRANSPORT

- (a) No PIC may allow a flight to continue toward any aerodrome of intended landing where commercial air transport operations have been restricted or suspended, unless:
 - (1) In the opinion of the PIC, the conditions that are a hazard to safe operations may reasonably be expected to be corrected by the ETA; or
 - (2) There is no safer procedure.

8.8.1.28 INTERCEPTION OF CIVIL AIRCRAFT

- (a) When intercepted by a military or government aircraft, each PIC shall comply with the International Standards when interpreting and responding to visual signals and communication, as prescribed in IS: 8.8.1.28.
- (b) No pilot may conduct an international flight unless the procedures and signals relating to interception of aircraft, as prescribed in IS: 8.8.1.28, are readily available on the flight deck.

8.8.1.29 NOISE ABATEMENT PROCEDURES

- (a) Each AOC holder shall operate its aircraft in accordance with the noise abatement procedures approved by the Authority.
- (b) Unless otherwise directed by the Authority, the noise abatement procedures specified by an AOC holder for any one aeroplane type shall be the same for all aerodromes.

Note: A single procedure may not satisfy requirements at some aerodromes.

8.8.1.30 SINGLE PILOT OPERATIONS - AEROPLANE

- (a) An aeroplane shall not be operated under IFR or at night by a single pilot unless approved by the State of the Operator.
- (b) An aeroplane shall not be operated under IFR or at night by a single pilot unless;
 - (1) The Aircraft Flight Manual does not require a flight crew of more than one;
 - (2) the aeroplane is propeller driven and turbine powered and complies with Subsection 8.7.2.2(e)(1) of this part;
 - (3) the maximum approved passenger seating configuration is not more than nine, or the aeroplane is propeller driven and turbine powered and complies with Subsection 8.7.2.2(e)(2) and the maximum approved passenger seating configuration is more than nine;
 - (4) the maximum certificated take-off mass does not exceed 5,700 kg (12,566 lb);
 - (5) the aeroplane is equipped as described in paragraphs 7.2.1.4(c), (d), and (e) of these regulations;
 - (6) the PIC has satisfied the requirements of experience, training, checking, and recency described in 8.10.1.41 of this part.
- (c) Notwithstanding paragraphs 8.8.1.30(b)(2) and (3) of this subsection, the aeroplane shall be operated in compliance with paragraph 8.7.2.2(a) of this part.
- (d) Any exemption for single pilot operations with more than nine passengers shall be authorised by the Authority in the operations specifications, as required by paragraph 8.7.2.2(e)(2) of this part
- (e) If such operations are to be conducted outside Curaçao, Curaçao shall have an arrangement with the States where the operations will be conducted.

8.8.1.31 SINGLE ENGINE AEROPLANE OPERATIONS

- (a) Except as provided in paragraphs 8.8.1.31(b) and (c) of this subsection single-engine aeroplanes, 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.
- (b) In approving operations by single-engine turbine-powered aeroplanes, at night and/or in IMC, the State of the Operator shall ensure that the airworthiness certification of the aeroplane is appropriate and that the overall level of safety intended by the provisions of Parts 5 and 8 of these regulations is provided by;
 - (1) the reliability of the turbine engine;
 - (2) the operator's maintenance procedures, operating practices, flight dispatch procedures and crew training programmes; and
 - (3) equipment, and other requirements provided in accordance with 8.7.2.3 of this part and IS: 8.7.2.3
- (c) All single-engine turbine-powered aeroplanes operated at night and /or in IMC shall have an engine trend monitoring system, and those aeroplanes for which the individual certificate of airworthiness is first issued on or after 01 January 2005 shall have an automatic trend monitoring system.

8.8.1.32 AEROPLANE OPERATING PROCEDURES FOR RATES OF CLIMB AND DESCENT

- (a) Unless otherwise specified in an ATC instruction, to avoid unnecessary ACAS II resolution advisories in aircraft at or approaching adjacent altitudes or FLs, each operator shall specify procedures by which an aeroplane climbing or descending to an assigned altitude or FL, especially with an autopilot engaged, may do so at a rate less than 8 m (26 ft)/sec or 450 m (1500 ft)/min (depending on the instrumentation available throughout the last 300 m (1000 ft) of climb or descent to the assigned level when the pilot is made aware of another aircraft at or approaching an adjacent altitude or FL.

Note: Material concerning the development of these procedures is contained in ICAO Doc 8168, Procedures for Air Navigation Services – Aircraft Operations (PANS-OPS), Volume I, Part III, Section 3, Chapter 3.

8.8.1.33 REMOTELY PILOTED AIRCRAFT

- (a) No person shall operate an RPA in a manner that would cause a hazard to persons, property or other aircraft.
- (b) OPERATING RULES. A person operating an RPA shall comply with the general operating rules as listed below.
 - (1) A person operating an RPA, registered in Curaçao or holding an operator certificate from Curaçao, and its RPAS,
 - (i) Shall not operate in Curaçao without appropriate authorisation from the Authority,
 - (ii) Shall not engage in international air navigation without appropriate authorisation from the State from which the take-off of the RPA is made.
 - (iii) Shall not operate across the territory of another State, without special authorisation issued by each State in which the flight is to operate, which shall be obtained prior to

take-off if there is reasonable expectation, when planning the operations, that the aircraft may enter the airspace concerned.

Note: This authorisation may be in the form of agreements between the States involved.

- (iv) Shall not operate over the high seas without prior coordination with the appropriate ATS authority, which shall be obtained prior to take-off if there is reasonable expectation, when planning the operations, that the aircraft may enter the airspace concerned.
 - (v) Shall operate in accordance with conditions specified by the State of Registry, the State of the Operator if different from the State of Registry, and the State(s) in which the flight is to operate; and
 - (vi) Shall ensure that the RPAS meets the performance and equipment carriage requirements for the specific airspace in which the flight is to operate.
- (2) Once authorization has been received from the Authority, the operator:
 - (i) Shall file a flight plan prior to operation of an RPA.
 - (ii) Shall notify the Authority and ATC immediately in the event of a flight cancellation, and
 - (iii) Shall, in the case of changes to the proposed flight, submit such changes to the Authority for consideration.
- (c) CERTIFICATES AND LICENCES. No person may operate an RPA, registered in Curaçao or holding an operator certificate from Curaçao unless the RPA, the RPAS and the RP have obtained the proper approvals of the Authority, as listed below.
 - (1) An RPAS shall be approved, taking into account the interdependencies of the components, in accordance with Part 5 of these regulations, including:
 - (i) A certificate of airworthiness for the RPA, and
 - (ii) The associated RPAS components specified in the type design certificate and maintained in accordance with Curacao regulations.
 - (2) An operator shall have an RPAS operator certificate issued in accordance with Curacao regulations.
 - (3) RPs shall be licensed or shall have their licences rendered valid in accordance with Part 2 of these regulations.

Note 1: ICAO Assembly Resolution A37-15 Appendix G resolves that pending the coming into force of International Standards respecting particular categories, classes, or types of aircraft, certificates issued or rendered valid, under national regulations, by the Contracting State in which the aircraft is registered shall be recognised by other Contracting States for the purposes of flight over their territories, including landings and take-offs.

Note 2: Certification and licensing Standards are not yet developed by ICAO. Thus, in the meantime, any certification and licensing need not be automatically deemed to comply with the SARPs of the related ICAO Annexes, including Annexes 1, 6, and 8, until such time as the related RPAS SARPs are developed.

Note 3: Notwithstanding ICAO Assembly Resolution A37-15, Article 8 of the Chicago Convention assures each Contracting State of the absolute sovereignty over the authorisation for RPA operations over its territory.

- (d) REQUEST FOR AUTHORISATION.

- (1) The request for authorisation referred to paragraph 8.8.1.33(b) of this subsection shall be made by providing the required information in the application contained in IS 8.8.1.33; and
- (2) A request for authorization to operate an RPA in Curaçao shall be made by following the in 10.2.1.3 of these regulations and providing the required information in the application contained in IS 10.2.1.3.

8.8.1.34 UNMANNED FREE BALLOONS

- (a) No person shall operate an unmanned free balloon in a manner that would cause a hazard to persons, property, or other aircraft.
- (b) CLASSIFICATION. Unmanned free balloons shall be classified as:
 - (1) LIGHT. An unmanned free balloon that carries a payload of one or more packages with a combined mass of less than 4 kg (9 lb), unless qualifying as a heavy balloon below;
 - (2) MEDIUM. An unmanned free balloon that carries a payload of two or more packages with a combined mass of 4 kg (9 lb) or more, but less than 6 kg (13 lb), unless qualifying as a heavy balloon; or
 - (3) HEAVY. An unmanned free balloon that carries a payload that:
 - (i) Has a combined mass of 6 kg (13 lb) or more; or
 - (ii) Includes a package of 3 kg (6 lb) or more; or
 - (iii) Includes a package of 2 kg (4 lb) or more with an area density of more than 13 g (28 lb) per square centimetre; or
 - (iv) Uses a rope or other device for suspension of the payload that requires an impact force of 230 N or more to separate the suspended payload from the balloon.

Note 1: The area density referred to in paragraph 8.8.1.34(b)(3)(iii) of this subsection is determined by dividing the total mass in grams of the payload package by the area in square centimetres of its smallest surface.

Note 2: The impact force of 230 N referred to in paragraphs 8.8.1.34(b)(3)(iv) and (d)(9) of this subsection is a unit of measure of force equivalent to a breaking strain of greater than 50 lb.

- (c) OPERATING RULES. No person shall operate an unmanned free balloon:
 - (1) Unless the balloon has received appropriate authorisation from Curacao;
 - (2) Across the territory of another State without appropriate authorisation from the other State concerned prior to the launching of the balloon;
 - (3) Except in accordance with the conditions specified by the State of Registry and the State(s) to be overflown;
 - (4) In such a manner that impact of the balloon, or any part thereof, including its payload, with the surface of the earth, creates a hazard to persons or property not associated with the operation; and
 - (5) Over the high seas without prior coordination with the appropriate ATS authority.
- (d) OPERATING LIMITATIONS AND EQUIPMENT REQUIREMENTS. No person shall operate an unmanned free balloon:
 - (1) Without authorisation from the appropriate ATS authority;

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- (2) At or through any level below 18 000 m (60 000 ft) pressure altitude at which:
 - (i) There are clouds or obscuring phenomena of more than 4 oktas coverage; or
 - (ii) The horizontal visibility is less than 8 km (5 SM);
 - (3) By releasing it in a manner that will cause it to fly lower than 300 m (1 000 ft) over the congested areas of cities, towns, or settlements or an open-air assembly of persons not associated with the operation;
 - (4) Unless it is equipped with at least two payload flight-termination devices or systems, whether automatic or operated by telecommand, that operate independently of each other;
 - (5) That is polyethylene zero-pressure, unless is it equipped with at least two methods, systems, devices, or combinations thereof, that function independently of each other for terminating the flight of the balloon envelope;
 - (6) Unless the balloon envelope is equipped with either a radar reflective device(s) or radar reflective material that will present an echo to surface radar operating in the 200 MHz to 2 700 MHz frequency range, and/or the balloon is equipped with such other devices as will permit continuous tracking by the operator beyond the range of ground-based radar;
 - (7) In an area where ground-based SSR equipment is in use, unless it is equipped with an SSR transponder, with pressure-altitude reporting capability, that is continuously operating on an assigned code or that can be turned on, when necessary, by the tracking station;
 - (8) In an area where ground-based ADS-B equipment is in use, unless it is equipped with an ADS-B transmitter, with pressure-altitude reporting capability, that is continuously operated or that can be turned on when necessary by the tracking station;
 - (9) With a trailing antenna that requires a force of more than 230 N to break it at any point, unless the antenna has coloured pennants or streamers that are attached at not more than 15 m intervals;
 - (10) Below 18 000 m (60 000 ft) pressure-altitude between sunset and sunrise or such other period between sunset and sunrise (corrected to the altitude of operations) as may be prescribed by the appropriate ATS authority, unless the balloon and its attachments and payload, whether or not they become separated during the operation, are lighted; and
 - (11) That is equipped with a suspension device (other than a highly conspicuously coloured open parachute) more than 15 m (50 ft) long between sunrise and sunset below 18 000 m (60 000 ft) pressure-altitude unless the suspension device is coloured in alternate bands of high conspicuity colours or has coloured pennants attached.
- (e) **TERMINATION.** The operator of an unmanned free balloon shall activate the appropriate termination device:
- (1) When it becomes known that weather conditions are less than those prescribed for the operation;
 - (2) If a malfunction or any other reason makes further operation hazardous to air traffic or to persons or property on the surface; or
 - (3) Prior to unauthorised entry into the airspace over another State's territory.
- (f) **PRE-FLIGHT NOTIFICATION.**
- (1) No person shall operate a medium or heavy unmanned free balloon unless that person has made the following notifications to the appropriate ATS unit:
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- (i) The pre-flight notification prescribed in paragraph 8.8.1.34(f)(2) of this subsection, which shall be made at least 7 days prior to the flight; and
 - (ii) Any changes in the pre-launch information, which shall be made no later than:
 - (A) 6 hours before the estimated time of launch; or
 - (B) In the case of solar or cosmic disturbance investigations involving a critical time element, 30 minutes before the estimated time of launch.
- (2) The pre-flight notification shall contain the following:
 - (i) Balloon flight identification or project code name;
 - (ii) Balloon classification and description;
 - (iii) SSR code, aircraft address, or NDB frequency, as applicable;
 - (iv) Operator's name and telephone number;
 - (v) Launch site;
 - (vi) Estimated time of launch (or time of commencement and completion of multiple launches);
 - (vii) Number of balloons to be launched and the scheduled interval between launches (if multiple launches);
 - (viii) Expected direction of ascent;
 - (ix) Cruising level(s) (pressure altitude);
 - (x) The estimated elapsed time to pass 18 000 m (60 000 ft) pressure altitude or to reach cruising level if at or below 18 000 m (60 000 ft), together with the estimated location; or, if the operation consists of continuous launchings, the time to be included is the estimated time at which the first and last in the series will reach the appropriate level;
 - (xi) The estimated date and time of termination of the flight and the planned location of the impact/recovery area:
 - (A) In the case of balloons carrying out flights of long duration, such that the date and time of termination of the flight and the location of impact cannot be forecast with accuracy, the term "long duration" shall be used;
 - (B) If there is to be more than one location of impact/recovery, each location is to be listed together with the appropriate estimated time of impact; or
 - (C) If there is to be a series of continuous impacts, the time to be included is the estimated time of the first and the last in the series.
- (g) NOTIFICATION OF LAUNCH. The operator of a medium or heavy unmanned free balloon shall, immediately after launch, notify the appropriate ATS unit of the following:
 - (1) Balloon flight identification;
 - (2) Launch site;
 - (3) Actual time of launch;
 - (4) Estimated time at which 18 000 m (60 000 ft) pressure altitude will be passed, or the estimated time at which the cruising level will be reached if at or below 18 000 m (60 000 ft), and the estimated location; and

- (5) Any changes to the information previously notified in the pre-flight notification information.
- (h) NOTIFICATION OF CANCELLATION. The operator shall notify the ATS unit immediately of a cancellation of the launch of a medium or heavy unmanned free balloon for which a pre-flight plan has been filed.
- (i) POSITION RECORDING AND REPORTS.
 - (1) The operator of a heavy unmanned free balloon shall monitor the flight path of the balloon and shall forward reports of the balloon's position to the ATS unit as follows:
 - (i) For operations at or below 18 000 m (60 000 ft) – every 2 hours;
 - (ii) For operations above 18 000 m (60 000 ft) – every 24 hours; or
 - (iii) Immediately, if the tracking of the balloon has been lost, providing:
 - (A) The balloon's last known position; and
 - (B) The re-establishment of tracking of the balloon.
 - (2) One hour before the beginning of the planned descent of a heavy unmanned free balloon, the operator of the balloon shall forward to the ATS unit the following information regarding the balloon:
 - (i) The current geographical position;
 - (ii) The current level (pressure altitude);
 - (iii) The forecast time of penetration of 18 000 m (60 000 ft) pressure altitude, if applicable; and
 - (iv) The forecast time and location of ground impact.
 - (3) The operator of a medium or heavy unmanned free balloon shall notify the appropriate ATS unit when the operation is completed.

8.8.2 CONTROL OF AIR TRAFFIC

8.8.2.1 AIR TRAFFIC CONTROL, CLEARANCES

- (a) Each PIC shall obtain an ATC clearance before operating a controlled flight, or a portion of a flight as a controlled flight.
- (b) Each PIC shall request an ATC clearance, including potential re-clearance in-flight, through the submission of a flight plan to an ATC facility.
- (c) Whenever a PIC has requested a clearance involving priority, that PIC shall submit a report explaining the necessity for such priority, if requested by the appropriate ATC facility.
- (d) No person operating an aircraft on a controlled aerodrome may taxi on the manoeuvring area or any runway without clearance from the aerodrome control tower.

8.8.2.2 ADHERENCE TO CURRENT AIR TRAFFIC CONTROL CLEARANCES

- (a) When an ATC clearance has been obtained, no PIC may deviate from the clearance within the tolerances defined in 8.8.2.5 of this part, except in an emergency, unless he or she obtains an amended clearance.

Note 1: A flight plan may cover only part of a flight, as necessary, to describe that portion of the flight or those manoeuvres which are subject to ATC. A clearance may cover only part of a current flight plan, as indicated in a clearance limit or by reference to specific manoeuvres such as taxiing, landing or taking off.

Note 2: § 8.8.2.2(a) of this subsection does not prohibit a pilot from cancelling an IFR clearance when operating in VMC conditions or cancelling a controlled flight clearance when operating in airspace that does not require controlled flight.

- (b) When operating in airspace requiring controlled flight, no PIC may operate contrary to ATC instructions, except in an emergency.
- (c) Each PIC who deviates from an ATC clearance or instructions in an emergency, shall notify ATC of that deviation as soon as possible.

8.8.2.3 COMMUNICATIONS

- (a) Each person operating an aircraft on a controlled flight shall maintain a continuous air-ground voice communication watch on the appropriate communication channel of, and shall establish two-way communication as required with, the appropriate ATC facility.
- (b) Each person operating an aircraft on a controlled flight shall, except when landing at a controlled aerodrome, advise the appropriate ATC facility as soon as it ceases to be subject to ATC service.

Note 1: More specific procedures may be prescribed by the appropriate ATC authority in respect of aircraft forming part of aerodrome traffic at a controlled aerodrome.

Note 2: Automatic signalling devices may be used to satisfy the requirement to maintain a continuous air-ground voice communication watch, if authorised by the Authority.

8.8.2.4 ROUTE TO BE FLOWN

- (a) Unless otherwise authorised or directed by the appropriate ATC facility, the PIC of a controlled flight shall, in so far as practicable:
 - (1) When on an established ATC route, operate along the defined centre line of that route; or
 - (2) When on any other route, operate directly between the navigation facilities and/or points defining that route.
- (b) The PIC of a controlled flight operating along an ATC route defined by reference to VORs shall change over for primary navigation guidance from the facility behind the aircraft to that ahead of it at, or as close as operationally feasible to, the change-over point, where established.

Note: These requirements do not prohibit manoeuvring the aircraft to pass well clear of other air traffic or the manoeuvring of the aircraft in VFR conditions to clear the intended flight path both before and during climb or descent.

8.8.2.5 DEVIATIONS FROM CURRENT FLIGHT PLAN

- (a) A PIC shall take the following action in the event that a controlled flight inadvertently deviates from its current flight plan:
 - (1) **DEVIATION FROM TRACK.** If the aircraft is off track, the PIC shall adjust the heading of the aircraft to regain track as soon as practicable.
 - (2) **DEVIATION FROM ATC-ASSIGNED MACH NUMBER/INDICATED AIRSPEED.** The appropriate ATS unit shall be informed immediately.
 - (3) **DEVIATION FROM MACH NUMBER/TRUE AIRSPEED.** Each PIC shall inform the appropriate ATC facility if the average Mach number/true airspeed at cruising level between reporting points varies from that given in the flight plan, or is expected to vary by plus or minus Mach 0.02 or more or plus or minus 19 km/h (10 kt) true airspeed or more from the current flight plan.
 - (4) **CHANGE IN TIME ESTIMATE.** Each PIC shall notify the appropriate ATC facility and give a revised estimated time as soon as possible if the time estimate for a reporting point, flight information region boundary, or destination aerodrome, whichever comes first, changes in excess of 2 minutes from that previously notified to ATC, or such other period of time as is prescribed by the appropriate ATC authority or on the basis of Regional Air Navigation Agreements, except where ADS-C is activated and serviceable in airspace where provided.
- (b) When ADS-C services are provided and ADS-C is activated, the ATS unit shall be informed automatically via data link whenever changes occur beyond the threshold values stipulated by the ADS event contract.

8.8.2.6 AIR TRAFFIC CONTROL CLEARANCE— CHANGE REQUESTS

- (a) Requests for current flight plan changes shall include the following information:
 - (1) **CHANGE OF CRUISING LEVEL.** Aircraft identification, requested new cruising level and cruising Mach number/true airspeed at this level; and revised time estimates, when applicable, at subsequent reporting points or flight information region boundaries
 - (2) **CHANGE OF MACH NUMBER/TRUE AIRSPEED.** Aircraft identification; requested Mach number/true airspeed.
 - (3) **CHANGE OF ROUTE.**
 - (i) **DESTINATION UNCHANGED.** Aircraft identification, flight rules; description of new route of flight including related flight plan data beginning with the position from which the requested change of route is to commence; revised time estimates, and any other pertinent information.
 - (ii) **DESTINATION CHANGE.** Aircraft identification; flight rules; description of revised route of flight to revised destination aerodrome including related flight plan data, beginning with the position from which the requested change of route is to commence; revised time estimates; alternate aerodrome(s); and any other pertinent information.

8.8.2.7 POSITION REPORTS

- (a) Each pilot of a controlled flight shall report to the appropriate ATC facility, as soon as possible, the time and level of passing each designated compulsory reporting point, together with any other required information, unless exempted from this requirement by the appropriate ATC Authority.
- (b) Each pilot of a controlled flight shall make position reports in relation to additional points or intervals when requested by the appropriate ATC facility.
- (c) When operating via data link communications providing position information to the appropriate ATS unit, each pilot of a controlled flight shall only provide voice position reports when requested by the appropriate ATC facility.

8.8.2.8 OPERATIONS ON OR IN THE VICINITY OF A CONTROLLED AERODROME

- (a) No person may operate an aircraft to, from, through, or on an aerodrome having an operational control tower unless two-way communications are maintained between that aircraft and the control tower.
- (b) On arrival, each PIC shall establish communications required by paragraph 8.8.2.8(a) of this subsection prior to 7.4 km (4 NM) from (a) prior to 18,5 km (10 nautical miles) from the Aerodrome Traffic Zone when operating from the surface up to and including 760 m (2500 ft).
- (c) On departure, each PIC shall establish communications with the control tower before taxi.
- (d) Take-off, landing, taxi clearance. No person may, at any aerodrome with an operating control tower, operate an aircraft on a runway or taxiway or take-off or land an aircraft, unless an appropriate clearance has been received by ATC.

Note: A clearance to “taxi to” the take-off runway is not a clearance to cross or taxi on to that runway. It does authorise the PIC to cross other runways during the taxi to the assigned runway. A clearance to “taxi to” any other point on the aerodrome is a clearance to cross all runways that intersect the taxi route to the assigned point.

- (e) COMMUNICATIONS FAILURE. If the radio fails or two-way communication is lost, a PIC may continue a VFR flight operation and land if:
 - (1) The weather conditions are at or above basic VFR minimums; and
 - (2) Clearance to land from the ATC tower is given in accordance with the universal light signals and acknowledged by the PIC as prescribed in IS 8.8.2.11(e) and (f) for light signals and acknowledgement.

Note: During IFR operations, the two-way communications failure procedures prescribed in 8.8.4.19 of this part will apply.

8.8.2.9 UNLAWFUL INTERFERENCE

- (a) A PIC shall, when and if possible, notify the appropriate ATC facility when an aircraft is being subjected to unlawful interference, including:
 - (1) Any significant circumstances associated with the unlawful interference, and
 - (2) Any deviation from the current flight plan necessitated by the circumstances.
- (b) When an aircraft is subjected to unlawful interference, the PIC shall attempt to land as soon as practicable at:

- (1) The nearest suitable aerodrome, or
- (2) A dedicated aerodrome assigned by the appropriate Authority unless considerations aboard the aircraft dictate otherwise.

8.8.2.10 TIME CHECKS

- (a) Each PIC shall use UTC, expressed in hours and minutes and, when required, seconds of the 24-hour day beginning at midnight, in flight operations.
- (b) Each PIC shall obtain a time check before operating a controlled flight and at such other times during the flight as may be necessary.
- (c) Whenever time is used in the application of data link communications, it shall be accurate to within 1 second of UTC.

Note: The time check in paragraph 8.8.2.10(b) of this subsection is normally obtained from an ATS unit unless other arrangements have been made by the operator or by the appropriate ATC authority.

8.8.2.11 UNIVERSAL AVIATION SIGNALS

- (a) Upon observing or receiving any of the designated universal aviation signals prescribed in IS: 8.8.2.11 and IS: 8.8.1.28, each person operating an aircraft shall take such action as may be required by the interpretation of the signal.
- (b) The universal aviation signals shall have only the meaning indicated in the IS
- (c) Each person using universal signals in the movement of aircraft shall only use them only for the purpose indicated.
- (d) No person may use signals likely to cause confusion with universal aviation signals.

8.8.2.12 SIGNALMAN

- (a) No person shall guide an aircraft unless trained, qualified and approved by the Authority to carry out the functions of a signalman.
- (b) The signalman shall wear a distinctive fluorescent identification vest to allow the flight crew to identify that he or she is the person responsible for the marshalling operation.
- (c) The signalman shall use the marshalling equipment prescribed in paragraph 8.8.1.1(c) of this part.

8.8.3 VISUAL FLIGHT RULES

8.8.3.1 VISUAL METEOROLOGICAL CONDITIONS

- (a) No person may operate an aircraft under VFR when the flight visibility is less than, or at a distance from the clouds that is less than that prescribed, or the corresponding altitude and class of airspace in the following table

Airspace and VMC Minimums*			
Airspace Class	A***B C D E	F G	
		Above 900 m (3,000 ft) AMSL or above 300 m (1,000 ft) above terrain, whichever is the higher	At and below 900 m (3,000 ft) AMSL or 300 m (1,000 ft) above terrain, whichever is the higher
Distance from cloud	1500 m (4,920 ft) horizontally 300 m (1,000 ft) vertically		Clear of cloud and in sight of the surface
Flight visibility	8 km (5 SM) at and above 3,050 m (10,000 ft) AMSL 5 km (3 SM) below 3,050 m (10,000 ft) AMSL		5 km (3 SM) **
<p>*When the height of the transition altitude is lower than 3,050 m (10,000 ft) AMSL, FL100 shall be used in lieu of 10,000 ft.</p>			
<p>** When so prescribed by the appropriate ATC authority lower flight visibilities to 1,500 m (4,920 ft) may be permitted for flights operating:</p> <p>at speeds that, in the prevailing visibility, will give adequate opportunity to observe other traffic or any obstacles in time to avoid collision; or</p> <p>in circumstances in which the probability of encounters with other traffic would normally be low, e.g. in areas of low volume traffic and for aerial work at low levels.</p> <p>Helicopters may be permitted to operate in less than 1,500 m (4,920 ft) flight visibility, if manoeuvred at a speed that will give adequate opportunity to observe other traffic or any obstacles in time to avoid collision.</p>			
<p>***The VMC minima in Class A airspace are included for guidance to pilots and do not imply acceptance of VFR flights in Class A airspace.</p> <p>ICAO Annex 2: 3.9; 4.1</p> <p>FR 91.155(a)</p>			

8.8.3.2 VISUAL FLIGHT RULES WEATHER MINIMUMS FOR TAKE-OFF AND LANDING

- (a) No person may land or take-off an aircraft under VFR from an aerodrome located within a control zone, or enter the aerodrome traffic zone or traffic pattern airspace unless the:
 - (1) Reported ceiling is at least 450 m (1,500 ft); and
 - (2) Reported ground visibility is at least 5 km (3 SM); or
 - (3) Except when a clearance is obtained from ATC.
- (b) No person may land or take-off an aircraft or enter the traffic pattern under VFR from an aerodrome located outside a control zone, unless VMC conditions are at or above those indicated in Subsection 8.8.3.1 of this part.

- (c) The only exception to the required weather minimums of this subsection is during a special VFR operation.

8.8.3.3 SPECIAL VISUAL FLIGHT RULES OPERATIONS

- (a) No person may conduct a special VFR flight operation to enter the traffic pattern, land or take-off an aircraft under special VFR from an aerodrome located in Class B, Class C, Class D or Class E airspace unless:
 - (1) Authorised by an ATC clearance;
 - (2) The aircraft remains clear of clouds; and
 - (3) The flight visibility is at least 1.5 km (1 SM).
- (b) No person may conduct a special VFR flight operation in an aircraft between sunset and sunrise unless:
 - (1) The PIC is current and qualified for IFR operations; and
 - (2) The aircraft is qualified to be operated for IFR flight.

8.8.3.4 VISUAL FLIGHT RULES CRUISING ALTITUDES

- (a) Each person operating an aircraft in level cruising flight under VFR at altitudes above 900 m (3,000 ft) from the ground or water, shall maintain an FL appropriate to the track as specified in the tables of cruising levels prescribed in IS: 8.8.3.4.
- (b) Paragraph 8.8.3.4(a) of this subsection does not apply when otherwise authorised by ATC, when operating in a holding pattern, or during manoeuvring in turns.

8.8.3.5 AIR TRAFFIC CONTROL CLEARANCES FOR VISUAL FLIGHT RULES FLIGHTS

- (a) Each pilot of a VFR flight shall obtain and comply with ATC clearances and shall maintain an air-ground voice communication watch before and during operations:
 - (1) Within Class B, Class C, and Class D airspace;
 - (2) As part of aerodrome traffic at controlled aerodromes; and
 - (3) Under special VFR.

8.8.3.6 VISUAL FLIGHT RULES FLIGHTS REQUIRING AIR TRAFFIC CONTROL AUTHORISATION

- (a) Unless authorised by the appropriate ATC Authority, no pilot may operate in VFR flight:
 - (1) Above FL 200; or
 - (2) At transonic and supersonic speeds.
- (b) ATC authorisation for VFR flights may not be granted in areas where a VSM of 300 m (1,000 ft) is applied above FL 290.
- (c) No person may operate in VFR flight between sunset and sunrise unless:

- (1) Authorised by the appropriate ATC authority, and
- (2) Operating in accordance with any conditions prescribed by the Authority.

8.8.3.7 WEATHER DETERIORATION BELOW VISUAL METEOROLOGICAL CONDITIONS

- (a) Each pilot of a VFR flight operated as a controlled flight shall, when he or she finds it is not practical or possible to maintain flight in VMC in accordance with the ATC flight plan:
 - (1) Request an amended clearance enabling the aircraft to continue in VMC to its destination or to an alternative aerodrome, or to leave the airspace within which an ATC clearance is required;
 - (2) If no clearance can be obtained, continue to operate in VMC and notify the appropriate ATC facility of the action being taken either to leave the airspace concerned or to land at the nearest suitable aerodrome;
 - (3) Operating within a control zone, request authorisation to operate as a special VFR flight; or
 - (4) Request clearance to operate in IFR, if currently rated for IFR operations.

8.8.3.8 CHANGING FROM VISUAL FLIGHT RULES TO INSTRUMENT FLIGHT RULES

- (a) Each pilot operating in VFR who wishes to change to IFR shall:
 - (1) If a flight plan was submitted, communicate the necessary changes to be effected to its current flight plan; or
 - (2) Submit a flight plan to the appropriate ATC facility and obtain a clearance before proceeding IFR when in controlled airspace.

8.8.3.9 TWO-WAY RADIO COMMUNICATION FAILURE IN VISUAL FLIGHT RULES

- (a) COMMUNICATIONS FAILURE – GENERAL.
 - (1) In the event of a communications failure, the pilot shall attempt to establish communications with the appropriate air ATC using all other available means; and
 - (2) In addition, the pilot shall, when forming part of the aerodrome traffic at a controlled aerodrome, keep a watch for such instructions as may be issued by visual signals.
- (b) If communication failure occurs in VMC while under ATC control, or if VMC conditions are encountered after the failure, each pilot shall:
 - (1) Continue the flight under VMC;
 - (2) Land at the nearest suitable aerodrome; and
 - (3) Report arrival to the appropriate ATC services unit by the most expeditious means possible.

8.8.4 INSTRUMENT FLIGHT RULES

8.8.4.1 INSTRUMENT FLIGHT PROCEDURES

- (a) All aircraft operated in accordance with instrument flight procedures shall comply with the IFR and the aerodrome IAPs approved by the State where the operation will take place.

Note: Information for pilots on flight procedure parameters and operational procedures is contained in ICAO Doc 8168, Procedures for Air Navigation Services – Aircraft Operations (PANS-OPS), Volume I. Criteria for the construction of visual and instrument flight procedures are contained in ICAO DOC 8168, PANS-OPS, 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.

8.8.4.2 INSTRUMENT FLIGHT RULES IN CONTROLLED AIRSPACE

- (a) No person may operate an aircraft in controlled airspace under IFR unless that person has:
 - (1) Filed an IFR flight plan; and
 - (2) Received an appropriate ATC clearance.

8.8.4.3 INSTRUMENT FLIGHT RULES FLIGHTS OUTSIDE CONTROLLED AIRSPACE

- (a) Each PIC of an IFR flight operating outside controlled airspace but within or into areas, or along routes, designated by the appropriate ATC authority shall maintain an air-ground voice communication watch on the appropriate communication channel and shall establish two-way communication, as necessary, with the ATC facility providing flight information service.
- (b) Each PIC of an IFR flight operating outside controlled airspace and required by the appropriate ATC authority to submit a flight plan, maintain an air-ground voice communication watch on the appropriate communication channel, and establish two-way communication, as necessary, with the ATC facility providing flight information service, shall report position as specified for controlled flights.

8.8.4.4 INSTRUMENT FLIGHT RULES TAKE-OFF MINIMUMS FOR COMMERCIAL AIR TRANSPORT

- (a) Unless otherwise authorised by the Authority, no pilot operating an aircraft in commercial air transport operations may accept a clearance to take-off from a civil aerodrome under IFR unless weather conditions are at or above:
 - (1) For aircraft, other than helicopters, having two engines or less—1,500 m (1 SM) visibility.
 - (2) For aircraft having more than two engines—800 m (1/2 SM) visibility.
 - (3) For helicopters—800 m (1/2 SM) visibility

8.8.4.5 MINIMUM ALTITUDES FOR INSTRUMENT FLIGHT RULES OPERATIONS

- (a) Operation of aircraft at minimum altitudes. Except when necessary for take-off or landing, no person may operate an aircraft under IFR below:
 - (1) The applicable minimum altitudes prescribed by the authorities having jurisdiction over the airspace being overflown; or
 - (2) If no applicable minimum altitude is prescribed by the authorities:

- (i) Over high terrain or in mountainous areas, at a level which is at least 600 m (2,000 ft) above the highest obstacle located within 8 km (5 SM) of the estimated position of the aircraft; and
 - (ii) Elsewhere than as specified in paragraph (i), at a level which is at least 300 m (1,000 ft) above the highest obstacle located within 8 km (5 SM) of the estimated position of the aircraft.
- (3) If an MEA and a MOCA are prescribed for a particular route or route segment, a person may operate an aircraft below the MEA down to, but not below, the MOCA, when within 40.7 km (22 NM) of the VOR concerned.
- (b) Climb for obstacle clearance.
 - (1) If unable to communicate with ATC, each pilot shall climb to a higher minimum IFR altitude immediately after passing the point beyond which that minimum altitude applies
 - (2) If ground obstructions intervene, each pilot shall climb to a point beyond which that higher minimum altitude applies, at or above the applicable Minimum Crossing Altitude.

8.8.4.6 MINIMUM ALTITUDES FOR USE OF AN AUTOPILOT

- (a) For en-route operations, no person may use an autopilot at an altitude above the terrain that is less than 152 m (500ft).

Note: If the maximum altitude loss specified in the Aircraft Flight Manual for a malfunction under cruise conditions when multiplied by two is more than 152 m (500 ft), then it becomes the controlling minimum altitude for use of the autopilot.

- (b) For instrument approach operations, no person may use an autopilot at an altitude above the terrain that is less than 15 m (50 ft) below the MDA or DH.

Note: If the maximum altitude loss specified in the AFM for a malfunction under approach conditions when multiplied by two is more than 15 m (50 ft), then it becomes the controlling minimum altitude for use of the autopilot.

- (c) For CAT III approaches, the Authority may approve the use of a flight control guidance system with automatic capability to touchdown.

8.8.4.7 INSTRUMENT FLIGHT RULES CRUISING ALTITUDE OR FLIGHT LEVEL IN CONTROLLED AIRSPACE

- (a) Each person operating an aircraft under IFR in level cruising flight in controlled airspace shall maintain the altitude or FL assigned to that aircraft by ATC.
- (b) Each person operating an aircraft in level cruising flight under IFR, or if authorised to employ cruise climb techniques between two levels, shall maintain a FL appropriate to the track as specified in the tables of cruising levels prescribed in IS: 8.8.3.4 or according to a modified table of cruising levels when so prescribed in accordance with IS: 8.8.3.4 for flight above FL 410.
- (c) Paragraph (c) above does not apply when otherwise authorised by ATC or specified by the appropriate ATC authority in AIPs.

Note: The requirements for VFR cruising altitudes are in Subsection 8.8.3.4.

8.8.4.8 INSTRUMENT FLIGHT RULES CRUISING ALTITUDE OR FLIGHT LEVEL IN UNCONTROLLED AIRSPACE

- (a) Each person operating an aircraft in level cruising flight under IFR, outside of controlled airspace, shall maintain an FL appropriate to the track as specified in the table of cruising levels prescribed in IS: 8.8.3.4 or according to a modified table of cruising levels when so prescribed in accordance with IS: 8.8.3.4 for flight above FL 410.
- (b) A person may deviate from the cruising altitudes specified in paragraph (a) only when:
 - (1) Authorised by ATC for flight at or below 900 m (3,000 ft) above MSL; or
 - (2) When otherwise authorised by ATC.

8.8.4.9 INSTRUMENT FLIGHT RULES RADIO COMMUNICATIONS

- (a) Each PIC of an aircraft operated under IFR in controlled airspace shall have a continuous watch maintained on the appropriate frequency and shall report by radio as soon as possible:
 - (1) The time and altitude of passing each designated reporting point, or the reporting points specified by ATC, except that while the aircraft is under radar control, only the passing of those reporting points specifically requested by ATC need be reported;
 - (2) Any unforecasted weather conditions encountered; and
 - (3) Any other information relating to the safety of flight, such as hazardous weather or abnormal radio station indications.

8.8.4.10 OPERATION UNDER INSTRUMENT FLIGHT RULES IN CONTROLLED AIRSPACE—MALFUNCTION REPORTS

- (a) The PIC of each aircraft operated in controlled airspace under IFR shall report as soon as practical to ATC any malfunctions of navigational, approach, or communication equipment occurring in flight.
- (b) In each report specified in paragraph (a), the PIC shall include the:
 - (1) Aircraft identification;
 - (2) Equipment affected;
 - (3) Degree to which the capability of the pilot to operate under IFR in the ATC system is impaired; and
 - (4) Nature and extent of assistance desired from ATC.

8.8.4.11 CONTINUATION OF INSTRUMENT FLIGHT RULES FLIGHT TOWARD A DESTINATION

- (a) No pilot may continue an IFR flight toward an aerodrome or heliport of intended landing, unless the latest available meteorological information indicates that the conditions at that aerodrome, or at least one destination alternate aerodrome will, at the expected time of arrival, be at or above the specified instrument approach minima.

8.8.4.12 INSTRUMENT APPROACH PROCEDURES AND INSTRUMENT FLIGHT RULES LANDING MINIMUMS

- (a) No person may make an instrument approach at an aerodrome except in accordance with IFR weather minimums and IAPs established for that aerodrome as set forth by the Authority.
- (b) No AOC holder may make an instrument approach at an aerodrome except as set forth in the AOC holder's operations specifications.

8.8.4.13 COMMENCING AN INSTRUMENT APPROACH—COMMERCIAL AIR TRANSPORT

- (a) No pilot may continue an approach below 300 m (1,000 ft.) above the aerodrome elevation or into the FAS unless:
 - (1) A source approved by the Authority issues a weather report for that aerodrome; and
 - (2) The latest weather report for that aerodrome reports the visibility or controlling RVR to be equal to or more than the minimums prescribed for that procedure; and
 - (3) The given available runway surface condition information and the aeroplane performance information indicates that a safe landing can be made.
- (b) If a pilot begins the FAS of an IAP and subsequently receives a weather report indicating below-minimum conditions, the pilot may continue the approach to DH or MDA.

Note 1: For the purpose of this subsection, the FAS begins at the final approach fix or facility prescribed in the IAP. When a final approach fix is not prescribed for a procedure that includes a procedure turn, the FAS begins at the point where the procedure turn is completed and the aircraft is established inbound toward the aerodrome on the final approach course within the distance prescribed in the procedure.

Note 2: Criteria for the FAS is contained in ICAO Doc 8168, PANS-OPS, Volume II.

Note 2: Controlling RVR means the reported values of one or more RVR reporting locations (touchdown, mid-point and stop-end) used to determine whether operating minima are or are not met. Where RVR is used, the controlling RVR is the touchdown RVR, unless otherwise specified by State criteria.

Note 4: The procedures used by aerodromes to assess and report runway surface conditions are contained in ICAO Doc 9981, PANS-Aerodromes, and those for using runway surface condition information on board aircraft in the Aeroplane Performance Manual ICAO Doc 10064.

Note 5: Guidance on development of aeroplane performance information is contained in ICAO Doc 10064, Aeroplane Performance Manual.

8.8.4.14 INSTRUMENT APPROACHES TO CIVIL AERODROMES

- (a) Each person operating a civil aircraft shall use a standard IAP prescribed by the authorities having jurisdiction over the aerodrome, unless otherwise authorised by the Authority.
- (b) Authorised DH or MDA. For the purpose of this section, when the approach procedure being used provides for and requires the use of a DH or MDA, the authorised DH or MDA is the highest of the following:
 - (1) The DH or MDA prescribed by the approach procedure.
 - (2) The DH or MDA prescribed for the PIC.
 - (3) The DH or MDA for which the aircraft is equipped

8.8.4.15 OPERATION BELOW DECISION HEIGHT OR MINIMUM DESCENT ALTITUDE

- (a) Where a DH or MDA is applicable, no pilot may operate a civil aircraft at any aerodrome or heliport below the authorised MDA, or continue an approach below the authorised 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 manoeuvres;
 - (2) For commercial air transport operations, a descent rate will allow touchdown to occur within the touchdown zone of the runway of intended landing;
 - (3) The reported flight visibility is not less than the visibility prescribed in the standard instrument approach being used or the controlling RVR is above the specified minimum; and
 - (4) 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 30 m (100 ft) 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) 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; or
 - (x) The runway lights.

Note 1: Controlling RVR means the reported values of one or more RVR reporting locations (touchdown, mid-point and stop-end) used to determine whether operating minima are or are not met. Where RVR is used, the controlling RVR is the touchdown RVR, unless otherwise specified by Curaçao criteria.

Note 2: The visual references above do not apply to CAT II and CAT III operations. The required visual references under CAT II and CAT III operations are stated in the AOC holder's approved operations specifications or in a special authorisation prescribed by the Authority.

8.8.4.16 LANDING DURING INSTRUMENT METEOROLOGICAL CONDITIONS

- (a) No pilot operating a civil aircraft may land that aircraft when the flight visibility is less than the visibility prescribed in the standard IAP being used.

8.8.4.17 EXECUTION OF A MISSED APPROACH PROCEDURE

- (a) Each pilot operating a civil aircraft shall immediately execute an appropriate missed approach procedure when either of the following conditions exists:
- (1) Whenever the required visual reference criteria is not met in the following situations:

- (i) When the aircraft is being operated below MDA; or
 - (ii) Upon arrival at the missed approach point, including a DH where a DH is specified and its use is required, and at any time after that until touchdown.
- (2) Whenever an identifiable part of the aerodrome is not distinctly visible to the pilot during a circling manoeuvre at or above MDA, unless the inability to see an identifiable part of the aerodrome results only from a normal bank of the aircraft during the circling approach.

8.8.4.18 CHANGE FROM INSTRUMENT FLIGHT RULES FLIGHT TO VISUAL FLIGHT RULES FLIGHT

- (a) A pilot electing to change from IFR flight to VFR flight shall notify the appropriate ATC facility specifically that the IFR flight is cancelled and then communicate the changes to be made to his or her current flight plan.
- (b) When a pilot operating under IFR encounters VMC, he or she may not cancel the IFR flight unless it is anticipated, and intended, that the flight will be continued for a reasonable period of time in uninterrupted VMC.

8.8.4.19 TWO-WAY RADIO COMMUNICATIONS FAILURE IN INSTRUMENT FLIGHT RULES

- (a) Communications Failure: General
 - (1) In the event of communications failure, the pilot shall attempt to establish communications with the appropriate ATC unit using all other available means.
 - (2) In addition, the pilot shall, when forming part of the aerodrome traffic at a controlled aerodrome, shall keep a watch for such instructions as may be issued by visual signals.
- (b) If radio failure occurs in VMC while under ATC control, or if VMC conditions are encountered after the failure, each pilot shall:
 - (1) Continue the flight under VMC;
 - (2) Land at the nearest suitable aerodrome; and
 - (3) Report arrival to the appropriate ATC services unit by the most expeditious means possible.
- (c) If two-way radio communication failure occurs in IMC, or when the pilot of an IFR flight considers it inadvisable to continue the flight in VMC, the PIC shall:
 - (1) unless otherwise prescribed on the basis of regional air navigation agreement, in airspace where radar is not used in the provision of ATC, maintain the last assigned speed and level, or minimum flight altitude if higher, for a period of 20 minutes following the aircraft's failure to report its position over a compulsory reporting point and thereafter adjust level and speed in accordance with the filed flight plan;
 - (2) in airspace where radar is used in the provision of ATC, maintain the last assigned speed and level, or minimum flight altitude if higher, for a period of 7 minutes following:
 - (i) The time the last assigned level or minimum flight altitude is reached; or
 - (ii) The time the transponder is set to Code 7600; or
 - (iii) The aircraft's failure to report its position over a compulsory reporting point; whichever is later, and thereafter adjust level and speed in accordance with the filed flight plan;

- (3) when being radar vectored or having been directed by ATC to proceed offset using RNAV without a specified limit, re-join the current flight plan route no later than the next significant point, taking into consideration the applicable minimum flight altitude;
- (4) proceed according to the current flight plan route to the appropriate designated navigation aid or fix serving the destination aerodrome and, when required to ensure compliance with (5) below, hold over this aid or fix until commencement of descent;
- (5) commence descent from the navigation aid or fix specified in (4) at, or as close as possible to, the expected approach time last received and acknowledged; or, if no expected approach time has been received and acknowledged, at, or as close as possible to the ETA resulting from the current flight plan;
- (6) Complete a normal IAP as specified for the designated navigation aid or fix; and
- (7) land, if possible, within 30 minutes after ETA specified in (5) or the last acknowledged expected approach time, whichever is later.

8.8.4.20 THRESHOLD CROSSING HEIGHT FOR 3D INSTRUMENT APPROACH OPERATIONS

- (a) An operator shall establish operational procedures designed to ensure that an aeroplane being used to conduct 3D instrument approach operations crosses the threshold by a safe margin with the aeroplane in the landing configuration and attitude.

8.9 PASSENGERS AND PASSENGER HANDLING

8.9.1 ALL PASSENGER CARRYING OPERATIONS

8.9.1.1 UNACCEPTABLE CONDUCT

- (a) No person on board may interfere with a crew member in the performance of his or her duties.
- (b) Each passenger shall fasten his or her seat belt and keep it fastened while the seat belt sign is lighted.
- (c) No person on board an aircraft shall recklessly or negligently act or omit to act in such a manner as to endanger the aircraft or persons and property therein.
- (d) No person may secrete himself or herself nor secrete cargo on board an aircraft.
- (e) No person may smoke while the no-smoking sign is lighted.
- (f) No person may smoke in any aeroplane lavatory.
- (g) No person may tamper with, disable or destroy any smoke detector installed in any aeroplane lavatory.

8.9.1.2 REFUELLING OR DEFUELLING WITH PASSENGERS ON BOARD

- (a) No PIC may allow an aeroplane to be refuelled when passengers are embarking, on board or disembarking unless:
 - (1) The aeroplane is manned by qualified personnel ready to initiate and direct an evacuation; and
 - (2) Two-way communication is maintained between the qualified personnel in the aeroplane and the ground crew supervising the refuelling.
- (b) HELICOPTERS. No PIC may allow a helicopter to be refuelled or defuelled, or to have oxygen replenished, when passengers are embarking or disembarking or when refuelling with aviation gasoline or wide-cut type fuel or a mixture of these types of fuel unless:
 - (1) The helicopter is manned by qualified personnel ready to initiate and direct an evacuation; and
 - (2) Two-way communication is maintained between the qualified personnel in the helicopter and the ground crew supervising the refuelling.
- (c) HELICOPTERS: A PIC may allow a helicopter to be refuelled with passengers on board, rotors stopped or turning, if:
 - (1) The helicopter is manned by qualified personnel who have briefed passengers on actions to take if an incident occurs, ready to initiate and direct an evacuation;
 - (2) Two-way communication is maintained between the qualified personnel in the helicopter and the ground crew supervising the refuelling; and
 - (3) During an emergency shutdown procedure, the flight crew shall ensure that any personnel or passengers outside the helicopter are clear of the rotor area.

Note 1: Caution needs to be exercised when using radios for this purpose due to the potential for stray currents and radio-induced voltages.

Note 2: Provisions concerning aircraft refuelling are contained in Annex 14, Volume I, and guidance on safe refuelling practices is contained in ICAO Doc 9137, Airport Services Manual, Parts 1 and 8.

Note 3: Additional precautions are required when refuelling with fuels other than aviation kerosene or when refuelling results in a mixture of aviation kerosene with other aviation turbine fuels, or when an open line is used.

8.9.1.3 PASSENGER SEATS, SAFETY BELTS, AND SHOULDER HARNESSSES

- (a) The PIC shall ensure that each person on-board occupies an approved seat or berth with their own individual safety belt and shoulder harness (if installed) properly secured about them during take-off and landing.
- (b) Each passenger shall have his or her seatbelt securely fastened at any other time the PIC determines it is necessary for safety.
- (c) A safety belt provided for the occupant of a seat may not be used during take-off and landing by more than one person who has reached his or her second birthday.

Note: When cabin crew members are required in a commercial air transport operation, the PIC may delegate this responsibility, but shall ascertain that the proper briefing has been conducted before take-off.

8.9.1.4 PASSENGER BRIEFING

- (a) The PIC shall ensure that crew members and passengers are made familiar, by means of an oral briefing or by other means, with the location and use of the following items, if appropriate:
 - (1) Seat belts;
 - (2) Emergency exits;
 - (3) Life jackets;
 - (4) Oxygen dispensing equipment if the use of oxygen is anticipated; and
 - (5) Other emergency equipment provided for individual use, including passenger emergency briefing cards.
- (b) The PIC shall ensure that all persons on board:
 - (1) are aware of the locations and general manner of use of the principal emergency equipment carried for collective use.
 - (2) are briefed about all subjects for the specific operations conducted by a commercial air transport operation and are included in the pertinent OM, as approved by the Authority
 - (3) For helicopter specific - are briefed on the actions to take if an incident occurs when a helicopter is refuelled or replenished with oxygen when passengers are onboard.

Note: When cabin crew members are required in a commercial air transport operation, the PIC may delegate this responsibility, but shall ascertain that the proper briefing has been conducted before take-off.

- (c) During take-off and landing, and whenever by reason of turbulence or any emergency occurring during flight the precaution is considered necessary, cabin crew members shall ensure that all passengers aboard the aircraft fasten their seat belts so as to be secured in their seats.

- (d) For helicopter off-shore operations, the PIC shall ensure that each occupant of the aircraft wear:
 - (1) A life jacket or integrated survival suit, when operating beyond autorotational distance from land;
 - (2) A survival suit, when the sea temperature is less than 10°C or when the estimated rescue time exceeds the calculated survival time.

8.9.1.5 INFLIGHT EMERGENCY INSTRUCTION

- (a) In an emergency during flight, the PIC shall ensure that all persons on board are instructed in such emergency action as may be appropriate to the circumstances.
- (b) When cabin crew members are required in a commercial air transport operation, the PIC may delegate this responsibility, but shall ascertain that the proper briefing has been conducted.

8.9.1.6 PASSENGER OXYGEN—MINIMUM SUPPLY AND USE

- (a) The PIC shall ensure that breathing oxygen and masks are available to passengers in sufficient quantities for all flights at such altitudes where a lack of oxygen might harmfully affect passengers.
- (b) The PIC shall ensure that the minimum supply of oxygen prescribed by the Authority is on board the aircraft.

Note: The requirements for oxygen storage and dispensing apparatus are prescribed in Part 7.

- (c) The PIC shall require all passengers to use oxygen continuously at cabin pressure altitudes above 4000 m (13,000 ft).

8.9.1.7 ALCOHOL OR DRUGS

- (a) No person may permit the boarding or serving of any person who appears to be intoxicated or who demonstrates, by manner or physical indications, that that person is under the influence of drugs (except a medical patient under proper care).

8.9.2 COMMERCIAL AIR TRANSPORT PASSENGER CARRYING OPERATIONS

8.9.2.1 PASSENGER COMPLIANCE WITH INSTRUCTIONS

- (a) Each passenger on a commercial air transport flight shall comply with instructions given by a crew member in compliance with this section.

8.9.2.2 DENIAL OF TRANSPORTATION

- (a) An AOC holder may deny transportation because a passenger:
 - (1) Refuses to comply with the instructions regarding exit seating restrictions prescribed by the Authority; or

- (2) Has a handicap that can be physically accommodated only by an exit row seat.

8.9.2.3 CARRIAGE OF PERSONS WITHOUT COMPLIANCE WITH THESE PASSENGER-CARRYING REQUIREMENTS

- (a) The passenger-carrying requirements of paragraph (b) do not apply when carrying:
 - (1) A crew member not required for the flight;
 - (2) A representative of the Authority on official duty;
 - (3) A person necessary to the safety or security of cargo or animals; or
 - (4) Any person authorised by the AOC holder's OM procedures, as approved by the Authority.
- (b) No person may be carried without compliance to the passenger carrying requirements unless:
 - (1) There is an approved seat with an approved seat belt for that person;
 - (2) That seat is located so that the occupant is not in any position to interfere with the flight crew members performing their duties;
 - (3) There is unobstructed access from their seat to the flight deck or a regular or emergency exit;
 - (4) There is a means for notifying that person when smoking is prohibited and when seat belts shall be fastened; and
 - (5) That person has been orally briefed by a crew member on the use of emergency equipment and exits.

8.9.2.4 CABIN CREW AT DUTY STATIONS

- (a) During taxi, cabin crew members shall remain at their duty stations with safety belts and shoulder harness fastened except to perform duties related to the safety of the aircraft and its occupants.
- (b) During take-off and landing, cabin crew members shall be located as near as practicable to required floor level exits and shall be uniformly distributed throughout the aircraft to provide the most effective egress of passengers in event of an emergency evacuation.
- (c) When passengers are on board a parked aircraft, cabin crew members (or another person qualified in emergency evacuation procedures for the aircraft) will be placed in the following manner:
 - (1) If only one qualified person is required, that person shall be located in accordance with the AOC holder's OM procedures.
 - (2) If more than one qualified person is required, those persons shall be spaced throughout the cabin to provide the most effective assistance for the evacuation in case of an emergency.

8.9.2.5 EVACUATION CAPABILITY

- (a) The PIC, SCCM and other person assigned by the AOC holder shall ensure that, when passengers are on board the aircraft before movement on the surface, at least one floor-level exit provides for egress of passengers through normal or emergency means.

8.9.2.6 ARMING OF AUTOMATIC EMERGENCY EXITS

- (a) No person may cause an aeroplane carrying passengers to be moved on the surface, take-off or land unless each automatically deployable emergency evacuation assisting means installed on the aircraft is ready for evacuation.

8.9.2.7 ACCESSIBILITY OF EMERGENCY EXITS AND EQUIPMENT

- (a) No person may allow carry-on baggage or other items to block access to the emergency exits when the aircraft is moving on the surface, during take-off or landing, or while passengers remain on board on the ground.

8.9.2.8 STOPS WHERE PASSENGERS REMAIN ON BOARD

- (a) At stops where passengers remain on board the aircraft, the PIC, the CP, or both shall ensure that:
 - (1) All engines are shut down;
 - (2) At least one floor level exit remains open to provide for the deplaning of passengers; and
 - (3) There is at least one person immediately available who is qualified in the emergency evacuation of the aircraft and who has been identified to the passengers on board as responsible for the passenger safety.
- (b) If refuelling with passengers on board, the PIC or a designated company representative shall ensure that the AOC holder's OM procedures are followed.

8.9.2.9 PASSENGER LOADING AND UNLOADING - AOC

- (a) No person shall allow passenger loading or unloading of a propeller driven aircraft unless all engines are shut down unless the aircraft is using a passenger jetway to load and unload.

8.9.2.10 CARRIAGE OF PERSONS WITH REDUCED MOBILITY

- (a) No person may allow a person of reduced mobility to occupy seats where their presence could:
 - (1) Impede the crew in their duties;
 - (2) Obstruct access to emergency equipment; or
 - (3) Impede the emergency evacuation of the aircraft.

8.9.2.11 EXIT ROW SEATING

- (a) No AOC holder shall allow a passenger to sit in an emergency exit row if the PIC or SCA determine that it is likely that the passenger would be unable to understand and perform the functions necessary to open an exit and to exit rapidly.
- (b) No cabin crew member may seat a person in a passenger exit seat if it is likely that the person would be unable to perform one or more of the applicable functions listed below:

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- (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 lift out, hold, deposit on nearby seats, or manoeuvre over the seatbacks to the next row objects the size and mass of over-wing window exit doors;
 - (v) To remove obstructions of size and mass similar to over-wing exit doors;
 - (vi) To reach the emergency exit expeditiously;
 - (vii) To maintain balance while removing obstructions;
 - (viii) To exit expeditiously;
 - (ix) To stabilise an escape slide after deployment; or
 - (x) To assist others in getting off an escape slide.
 - (2) The person is less than 15 years of age or lacks the capacity to perform one or more of the applicable functions listed above 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 AOC 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 above functions 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 crew members, without assistance beyond a hearing aid.
 - (6) The person lacks the ability to adequately impart information orally to other passengers.
 - (7) The person has a condition or responsibilities, such as caring for small children, that might prevent the person from performing one or more of the functions listed above; or a condition that might cause the person harm if he or she performs one or more of the functions listed above.
- (c) Determinations as to the suitability of each person permitted to occupy an exit seat shall be made by the cabin crew members or other persons designated in the AOC holder's OM.
 - (d) In the event a cabin crew member determines that a passenger assigned to an exit seat would be unable to perform the emergency exit functions, or if a passenger requests a non-exit seat, the cabin crew member shall expeditiously relocate the passenger to a non-exit seat.
 - (e) In the event of full booking in the non-exit seats, and if necessary to accommodate a passenger being relocated from an exit seat, the cabin crew member shall move a passenger who is willing and able to assume the evacuation functions, to an exit seat.
 - (f) Each AOC ticket agent shall, before boarding, assign seats consistent with the passenger selection criteria and the emergency exit functions, to the maximum extent feasible.
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- (g) Each AOC ticket agent shall make available for inspection by the public at all passenger loading gates and ticket counters at each aerodrome where the AOC holder conducts passenger operations, written procedures established for making determinations in regard to exit row seating.
- (h) Each cabin crew member shall include in his or her passenger briefings a request that a passenger identifies himself or herself to allow reseating if he or she:
 - (1) Cannot meet the selection criteria;
 - (2) Has a non-discernible condition that will prevent him or her from performing the evacuation functions;
 - (3) May suffer bodily harm as the result of performing one or more of those functions; or
 - (4) Does not wish to perform emergency exit functions.
- (i) Each cabin crew member shall include in his or her passenger briefings a reference to the passenger information cards and the functions to be performed in an emergency exit.
- (j) Each passenger shall comply with instructions given by a crew member or other authorised employee of the AOC holder implementing exit seating restrictions.
- (k) No PIC may allow taxi or pushback unless at least one required crew member has verified that all exit rows and escape paths are unobstructed and that no exit seat is occupied by a person the crew member determines is likely to be unable to perform the applicable evacuation functions.
- (l) The procedures required by this standard will not become effective until final approval is granted by the Authority. Approval will be based solely upon the safety aspects of the AOC holder's procedures. In order to comply with this standard AOC holders shall:
 - (1) Establish procedures that address the requirements of this standard; and
 - (2) Submit their procedures for preliminary review and approval to the Authority.

8.9.2.12 PROHIBITION AGAINST CARRIAGE OF WEAPONS

- (a) No person may, while on board an aircraft being operated in commercial air transport, carry on or about their person a deadly or dangerous weapon, either concealed or unconcealed. An AOC holder may permit a person to transport a weapon, in accordance with the AOC holder's approved security programme:
 - (1) If the weapon is unloaded; and
 - (2) Both the weapon and ammunition are securely stowed in a place inaccessible to any person during the flight.
- (b) Officials or employees of the State, or crew members who are authorised to carry weapons on board the aircraft in domestic flights, shall do so in accordance with the AOC holders approved security programme. The PIC shall be notified by the AOC as to the number of armed persons and the location of their seats.
- (c) The persons identified in item (b) above may not carry weapons aboard an international flight unless there is prior agreement between Curaçao and all States in which the operation will be either conducted or overflown.

8.9.2.13 OXYGEN FOR MEDICAL USE BY PASSENGERS

- (a) An AOC holder may allow a passenger to carry and operate equipment for the storage, generation or dispensing of medical oxygen only as prescribed by the Authority.
- (b) No person may smoke, and no crew member may allow any person to smoke within 3 m (10 ft) of oxygen storage and dispensing equipment carried for the medical use of a passenger.
- (c) No crew member may allow any person to connect or disconnect oxygen dispensing equipment to or from an oxygen cylinder while any other passenger is aboard the aircraft.

8.9.2.14 CARRY-ON BAGGAGE

- (a) No person may allow the boarding of carry-on baggage unless it can be adequately and securely stowed in accordance with the AOC holder's approved OM procedures.
- (b) No person may allow aircraft passenger entry doors to be closed in preparation for taxi or pushback unless at least one required crew member has verified that each article of baggage has been properly stowed in overhead racks with approved restraining devices or doors, or in approved locations.
- (c) No person may allow carry-on baggage to be stowed in a location that would cause that location to be loaded beyond its maximum placard mass limitation.

Note: The stowage locations shall be capable of restraining the articles in crash impacts severe enough to induce the ultimate inertia forces specified in the emergency landing conditions under which the aircraft was type certificated.

8.9.2.15 CARRIAGE OF CARGO IN PASSENGER COMPARTMENTS

- (a) No person may allow the carriage of cargo in the passenger compartment of an aircraft except as prescribed by the Authority below.
- (b) Cargo may be carried anywhere in the passenger compartment if it is carried in an approved cargo bin that meets the following requirements:
 - (1) The bin shall withstand the load factors and emergency landing conditions applicable to the passenger seats of the aeroplane in which the bin is installed, multiplied by a factor of 1.15, using the combined mass of the bin and the maximum mass of cargo that may be carried in the bin.
 - (2) The maximum mass of cargo that the bin is approved to carry and any instructions necessary to ensure proper mass distribution within the bin shall be conspicuously marked on the bin.
 - (3) The bin may not impose any load on the floor or other structure of the aeroplane that exceeds the load limitations of that structure.
 - (4) The bin shall be attached to the seat tracks or to the floor structure of the aeroplane, and its attachment shall withstand the load factors and emergency landing conditions applicable to the passenger seats of the aeroplane in which the bin is installed, multiplied by either the factor 1.15 or the seat attachment factor specified for the aeroplane, whichever is greater, using the combined mass of the bin and the maximum mass of cargo that may be carried in the bin.

- (5) The bin may not be installed in a position that restricts access to or use of any required emergency exit, or of the aisle in the passenger compartment.
 - (6) The bin shall be fully enclosed and made of material that is at least flame resistant.
 - (7) Suitable safeguards shall be provided within the bin to prevent the cargo from shifting under emergency landing conditions.
 - (8) The bin may not be installed in a position that obscures any passenger's view of the "seat belt" sign, "no smoking" sign, or any required exit sign, unless an auxiliary sign or other approved means for proper notification of the passenger is provided.
- (c) Cargo, including carry-on baggage, shall not be stowed in toilets.
- (d) Cargo, including carry-on baggage shall not be stowed against bulkheads or dividers in passenger compartments that are incapable of restraining articles against movement forwards, sideways or upwards and unless the bulkheads or dividers carry a placard specifying the greatest mass that may be placed there, provided that:
 - (1) 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.
 - (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.
- (e) Cargo, including carry-on baggage, may be carried anywhere in the passenger compartment of a small aircraft if it is carried in an approved cargo rack, bin, or compartment installed in or on the aircraft, 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 these restrictions during take-off and landing.

- (7) For cargo-only operations, if the cargo is loaded so that at least one emergency or regular exit is available to provide all occupants of the aircraft a means of unobstructed exit from the aeroplane if an emergency occurs.

8.9.2.16 PASSENGER INFORMATION SIGNS

- (a) The PIC shall turn on required passenger information signs during any movement on the surface, for each take-off and each landing, and when otherwise considered to be necessary.

8.9.2.17 REQUIRED PASSENGER BRIEFINGS

- (a) No person may commence a take-off unless the passengers are briefed before take-off in accordance with the AOC holder's OM procedures on:
 - (1) Smoking limitations and prohibitions;
 - (2) Emergency exit location and use;
 - (3) Use of safety belts;
 - (4) Emergency floatation means location and use;
 - (5) Fire extinguisher location and operation;
 - (6) Placement of seat backs;
 - (7) If flight is above 3,050 m (10,000 ft) MSL, the normal and emergency use of oxygen;
 - (8) The passenger briefing card; and
 - (9) Use of other specialised equipment as required by the Authority.
- (b) Immediately before or immediately after turning the seat belt sign off, the PIC or CP shall ensure that the passengers are briefed to keep their seat belts fastened while seated, even when the seat belt sign is off.
- (c) Before each take-off, the PIC or CP shall ensure that any persons of reduced mobility are personally briefed on:
 - (1) The route to the most appropriate exit; and
 - (2) The time to begin moving to the exit in event of an emergency.

8.9.2.18 PASSENGER BRIEFING—EXTENDED OVERWATER OPERATIONS

- (a) No person may commence extended overwater operations unless all passengers have been orally briefed on the location and operations of life preservers, life rafts and other flotation means, including a demonstration of the method of donning and inflating a life preserver.

8.9.2.19 PASSENGER SEAT BELTS

- (a) Each passenger occupying a seat or berth shall fasten his or her safety belt and keep it fastened while the "Fasten Seat Belt" sign is lighted or, in aircraft not equipped with such a sign, whenever instructed by the PIC.

- (b) No passenger safety belt may be used by more than one occupant during take-off and landing.
- (c) At each unoccupied seat, the safety belt and shoulder harness, if installed, shall be secured so as not to interfere with crew members in the performance of their duties or with the rapid egress of occupants in an emergency.

Note 1: A person who has not reached his or her second birthday may be held by an adult who is occupying a seat or berth.

Note 2: A berth, such as a multiple lounge or divan seat, may be occupied by two persons provided it is equipped with an approved safety belt for each person and is used during en-route flight only.

8.9.2.20 PASSENGER SEAT BACKS

- (a) No PIC or CP may allow the take-off or landing of an aircraft unless each passenger seat back is in the upright position.

Note: Exceptions may only be made in accordance with procedures in the AOC holder's OM provided the seat back does not obstruct any passenger's access to the aisle or to any emergency exit.

8.9.2.21 STOWAGE OF FOOD, BEVERAGE AND PASSENGER SERVICE

- (a) No PIC, CP or SCA may allow the movement of an aircraft on the surface, or the take-off or landing of an aircraft:
 - (1) When any food, beverage or tableware furnished by the AOC holder is located at any passenger seat; and
 - (2) Unless each food and beverage tray and seat back tray table is in the stowed position.

8.9.2.22 SECURING OF ITEMS OF MASS IN PASSENGER COMPARTMENT

- (a) No person may allow the take-off or landing of an aircraft unless each item of mass in the passenger cabin is properly secured to prevent it from becoming a hazard during taxi, take-off and landing and during turbulent weather conditions.
- (b) No person may allow an aircraft to move on the surface, take-off or land unless each passenger serving cart is secured in its stowed position.

8.10 CREW MEMBER AND FLIGHT OPERATIONS OFFICER QUALIFICATIONS: COMMERCIAL AIR TRANSPORT

8.10.1.1 LIMITATION OF PRIVILEGES OF PILOTS WHO HAVE ATTAINED THEIR 60TH BIRTHDAY AND CURTAILMENT OF PRIVILEGES OF PILOTS WHO HAVE ATTAINED THEIR 65TH BIRTHDAY

- (a) No person may serve nor may any AOC holder use a person as a required PIC in single pilot operations on aircraft engaged in commercial air transport operations if that person has reached his or her 60th birthday.

- (b) For aircraft engaged in commercial air transport operations requiring more than one pilot as flight crew members, the AOC holder may use one pilot up to age 65 provided that the other pilot is less than age 60.
- (c) For aircraft engaged in long-range commercial air transport operations requiring more than one pilot as flight crew members, the AOC holder may use one pilot up to age 65 provided that the other pilot is less than age 60.
- (d) Check persons who have reached their 65th birthday or who do not hold an appropriate medical certificate may continue their check persons functions, but may not serve as or occupy the position of a required pilot flight crew member on an aeroplane engaged in international commercial air transport operations unless the other pilot is less than age 60.

Note: ICAO Annex 1 change effective November 23, 2006.

8.10.1.2 USE OF FLIGHT SIMULATION TRAINING DEVICES

- (a) Each FSTD that is used for flight crew member qualification shall:
 - (1) Be specifically approved by the Authority for:
 - (i) The AOC holder;
 - (ii) The type aircraft, including type variations, for which the training or check is being conducted; and
 - (iii) The particular manoeuvre, procedure, or crew member 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 aeroplane being simulated that results in changes to performance, functional, or other characteristics required for approval.
 - (4) Be given a daily functional pre-flight check before use.
 - (5) Have a daily discrepancy log completed by the appropriate instructor or check person at the end of each training or check flight.
- (b) The simulation device shall have the same technology for the basic flight instruments (attitude indicator, airspeed, altimeter, heading reference) as those of the aircraft used by the operator.
 - (1) Operators that have electronic/glass displays shall use simulators that have electronic/glass displays.
 - (2) Operators that have standard instruments shall use simulators that have standard instruments

8.10.1.3 APPROVAL OF A FLIGHT SIMULATION TRAINING DEVICE FOR CREDIT IN TRAINING AND CHECKING

- (a) No AOC holder may use a FSTD for training or checking unless that simulator has been specifically approved for the AOC holder in writing by the Authority.
- (b) No AOC holder may use a simulator for credit in training, recency and checking other than that specified in the Authority's approval.

8.10.1.4 LICENCE REQUIREMENTS FOR PILOT-IN-COMMAND

- (a) No pilot may act as PIC of an aircraft, certificated for operation with more than one pilot, in commercial air transportation operations unless he or she holds an ATPL with applicable category, class and type rating for that aircraft.
- (b) No pilot may act as PIC of an aircraft, certificated for operation for one pilot, in commercial air transportation operations unless he or she holds a CPL or an ATPL with applicable category, class and type rating for that aircraft.
- (c) If instrument privileges are to be exercised, the PIC shall hold an Instrument rating.

8.10.1.5 LICENCE REQUIREMENTS FOR CO-PILOT AND CRUISE RELIEF PILOT

- (a) No pilot may act as CP of an aircraft in commercial air transport operations unless he or she holds either a CPL/Instrument Rating or an ATPL, each with category, class and type ratings, as applicable, for the aircraft operated.
- (b) No pilot may act as a cruise relief pilot in commercial air transport operations unless he or she holds an ATPL with category, and if applicable, class and type ratings, and has completed all training to serve as PIC with the exception of initial operating experience.

8.10.1.6 FLIGHT ENGINEER LICENCE REQUIREMENTS

- (a) No person may act as the FE of an aircraft unless he or she has an FE licence with the appropriate class rating.

8.10.1.7 ONE PILOT QUALIFIED TO PERFORM FLIGHT ENGINEER FUNCTIONS

- (a) The AOC holder shall ensure that, on all flights requiring an FE, there is assigned at least one other flight crew member qualified to perform the FE duties in the event the FE becomes incapacitated.

8.10.1.8 PERSONS QUALIFIED TO FLIGHT RELEASE

- (a) No person may act as a FOO in releasing a scheduled passenger-carrying commercial air transport operation unless that person:
 - (1) Holds an FOO operator authorization approved by the authority or an ATPL or a CPL for day-VFR operations with aircraft certificated for 9 passengers or less; and
 - (2) Is currently qualified with the AOC holder for the operation and type of aircraft used.

Note: The AOC holder shall maintain the requirements stated in CCAR Subpart 2.8 for the issuance of the FOO operator authorization approved by the Authority.

8.10.1.9 COMPANY PROCEDURES INDOCTRINATION

- (a) No person may serve nor may any AOC holder use a person as a crew member or FOO flight dispatcher unless that person has completed the company procedures indoctrination curriculum approved by the Authority, which shall include a complete review of the applicable regulations and OM procedures pertinent to the crew member or flight operation officer's duties and responsibilities.

- (b) The AOC holder shall provide a minimum of 40 programmed hours of instruction for company procedures indoctrination training unless a reduction is determined appropriate by the Authority.
- (c) The knowledge area topics to be covered are prescribed in IS 8.10.1.9.

8.10.1.10 INITIAL OR RECURRENT DANGEROUS GOODS GROUND TRAINING REQUIREMENTS

- (a) Operators that are not approved for the shipping of dangerous goods, shall establish, maintain, and have approved by the Authority, initial and recurrent personnel training programmes, as required by the Technical Instructions, on the subjects prescribed in IS 8.10.1.10.
- (b) The following entities involved in the shipping of dangerous goods, shall establish, maintain, and have approved by the Authority, initial and recurrent personnel training programmes, as required by the Technical Instructions, on the subjects prescribed in IS 8.10.1.10.
 - (1) shippers of dangerous goods, including packers and persons or organisations undertaking the responsibilities of the shipper;
 - (2) operators;
 - (3) ground handling agencies which perform, on behalf of the operator, the act of accepting, handling, loading, unloading, transferring or other processing of cargo or mail;
 - (4) ground handling agencies located at an aerodrome which perform, on behalf of the operator, the act of processing passengers;
 - (5) agencies, not located at an aerodrome, which perform, on behalf of the operator, the act of checking in passengers;
 - (6) freight forwarders;
 - (7) agencies engaged in the security screening of passengers and crew and their baggage and/or cargo or mail; and
 - (8) designated postal operators.
- (c) Recurrent training shall be satisfactorily completed every 24 months.
- (d) Dangerous goods training programmes required for the operator in (b)(2) above shall be approved by the Authority.

Note: Dangerous goods training programmes required for other than the operator in (b)(2) shall be subjected to review and approval by the appropriate national authority.

8.10.1.11 INITIAL OR RECURRENT SECURITY TRAINING REQUIREMENTS

- (a) No person may serve nor may any AOC holder use operational personnel unless they have completed the initial security curriculum approved by the Authority.
- (b) No person may serve nor may any AOC holder use operational personnel unless they have completed the recurrent training security curriculum approved by the Authority within 12 calendar months.
- (c) The operator shall establish and maintain an approved security training programme which ensures crew members act in the most appropriate manner to minimise the consequences of acts of unlawful interference. As a minimum, this programme shall include the following elements:
 - (1) determination of the seriousness of any occurrence;

- (2) crew communication and coordination;
 - (3) appropriate self-defence responses;
 - (4) use of non-lethal protective devices assigned to crew members whose use is authorised by the State of the Operator;
 - (5) understanding of behaviour of terrorists so as to facilitate the ability of crew members to cope with hijacker behaviour and passenger responses;
 - (6) live situational training exercises regarding various threat conditions;
 - (7) flight crew compartment procedures to protect the aeroplane; and
 - (8) aeroplane search procedures and guidance on least-risk bomb locations where practicable.
- (d) The operator shall also establish and maintain a training programme to acquaint appropriate employees with preventive measures and techniques in relation to passengers, baggage, cargo, mail, equipment, stores and supplies intended for carriage on an aeroplane so that they contribute to the prevention of acts of sabotage or other forms of unlawful interference.

8.10.1.12 INITIAL CREW RESOURCE MANAGEMENT TRAINING

- (a) No person may serve nor may any AOC holder use a person as a FOO or crew member unless that person has completed the initial CRM curriculum approved by the Authority.
- (b) Course curriculum topics are prescribed in IS 8.10.1.12.

8.10.1.13 INITIAL EMERGENCY EQUIPMENT DRILLS

- (a) No person may serve nor may any AOC holder use a person as a crew member unless that person has completed the appropriate initial emergency equipment curriculum and drills for the crew member position approved by the Authority for the emergency equipment available on the aircraft to be operated.
- (b) Course curriculum requirements are prescribed in IS 8.10.1.13.

8.10.1.14 INITIAL AIRCRAFT GROUND TRAINING

- (a) No person may serve nor may any AOC holder use a person as a crew member or FOO unless he or she has completed the initial ground training approved by the Authority for the aircraft type.
- (b) Initial aircraft ground training for flight crew members shall include the pertinent portions of the OM relating to aircraft-specific performance, mass and balance, operational policies, systems, limitations, normal, abnormal and emergency procedures on the aircraft type to be used. Specific course curriculum requirements for flight crew members are prescribed in IS 8.10.1.14(B).

Note: The AOC holder may have separate initial aircraft ground training curricula of varying lengths and subject emphasis, which recognise the experience levels of flight crew members, approved by the Authority.

- (c) For cabin crew members, initial aircraft ground training shall include the pertinent portions of the OM relating to aircraft-specific configuration, equipment, normal and emergency procedures for the aircraft types within the fleet. Specific course curriculum requirements for cabin crew members are prescribed in IS 8.10.1.14(C).

- (d) For FOOs, aircraft initial ground training shall include the pertinent portions of the OM relating to aircraft-specific flight preparation procedures, performance, mass and balance, systems, limitations for the aircraft types within the fleet. Specific course curriculum requirements for FOOs are prescribed in IS 8.10.1.14(D).

8.10.1.15 INITIAL AIRCRAFT FLIGHT TRAINING

- (a) No person may serve nor may any AOC holder use a person as a flight crew member unless he or she has completed the initial flight training approved by the Authority for the aircraft type.
- (b) Initial flight training shall focus on the manoeuvring and safe operation of the aircraft in accordance with AOC holder's normal, abnormal and emergency procedures.
- (c) An AOC holder may have separate initial flight training curricula, which recognise the experience levels of flight crew members, approved by the Authority.
- (d) Specific flight training curriculum requirements are prescribed in IS 8.10.1.15(a)(d) for pilots, IS 8.10.1.15(b)(d) for FEs, and IS 8.10.1.15(c) for navigators.

8.10.1.16 INITIAL SPECIALISED OPERATIONS TRAINING

- (a) No person may serve nor may any AOC holder use a person as a flight crew member unless he or she has completed the appropriate initial specialised operations training curriculum approved by the Authority.
- (b) Specialised operations for which initial training curricula shall be developed include:
 - (1) Low minimums operations, including LVTOs and CAT II and CAT III operations;
 - (2) Extended range operations;
 - (3) Specialised navigation;
 - (4) PIC right seat qualification;
 - (5) RVSM; and
 - (6) RNP.
- (c) Specific initial specialised operations training curriculum requirements are prescribed in IS 8.10.1.16.

8.10.1.17 AIRCRAFT DIFFERENCES

- (a) No person may serve nor may any AOC holder use a person as a FOO or crew member on an aircraft of a type for which a differences curriculum is included in the AOC holder's approved training programme, unless that person has satisfactorily completed that curriculum, with respect to both the crew member position and the particular variant of that aircraft.
- (b) A general listing of subjects to be covered in aircraft differences training is prescribed in IS: 8.10.1.17.

Note 1: ICAO Doc 9376, Preparation of an Operations Manual, contains guidance material to design flight crew training programmes.

Note 2: ICAO Doc 9379, Manual of Procedures for the Establishment of a State's Personnel Licensing System, contains guidance of a general nature on cross-crew qualification, mixed-fleet flying and cross-credit.

8.10.1.18 RESERVED

8.10.1.19 INTRODUCTION OF NEW EQUIPMENT OR PROCEDURES

- (a) No person may serve nor may any AOC holder use a person as a flight crew member when that service would require expertise in the use of new equipment or procedures for which a curriculum is included in the AOC holder's approved training programme, unless that person has satisfactorily completed that curriculum, with respect to both the crew member position and the particular variant of that aircraft.

Note 1: ICAO Doc 9376, Preparation of an Operations Manual, contains guidance material to design flight crew training programmes.

Note 2: ICAO Doc 9379, Manual of Procedures for the Establishment of a State's Personnel Licensing System, contains guidance of a general nature on cross-crew qualification, mixed-fleet flying and cross-credit.

8.10.1.20 PILOT PROFICIENCY – AIRCRAFT AND INSTRUMENT PROFICIENCY CHECKS

- (a) No person may serve nor may any AOC holder use a person as a pilot flight crew member unless, since the beginning of the 12th calendar month before that service, that person has passed the aircraft pilot proficiency check prescribed by Authority in the make, and model aircraft on which their services are required.
- (b) No person may serve nor may any AOC holder use a person as a pilot in IFR operations unless, since the beginning of the 6th calendar month before that service, that pilot has passed the instrument proficiency check prescribed by the Authority.
- (c) A pilot may complete the requirements of paragraphs (a) and (b) simultaneously in a specific aircraft type.
- (d) The manoeuvres for aircraft pilot proficiency and instrument proficiency checks conducted under this part are prescribed in IS 8.10.1.20 and in Part 2 of these regulations under the appropriate skill test.

Note 1: FSTDs approved by the State of the Operator may be used for those parts of the checks for which they are specifically approved.

Note 2: See ICAO Doc 9625, Manual of Criteria for the Qualification of Flight Simulation Training Devices.

8.10.1.21 RE-ESTABLISHING REGENCY OF EXPERIENCE - FLIGHT CREW

- (a) PILOTS:
 - (1) In addition to meeting all applicable training and checking requirements, a required pilot flight crew member who, in the preceding 90 days has not made at least three take-offs and landings in the aircraft in which that person is to serve, shall, under the supervision of a check person, re-establish recency of experience as follows:

- (i) Make at least three take-offs and landings in the aircraft in which that person is to serve or in a qualified simulator.
 - (ii) Make at least one take-off with a simulated failure of the most critical powerplant, one landing from the minimum ILS authorised for the AOC holder, and one landing to a full stop.
- (2) When using a simulator to accomplish any of the take-off and landing training requirements necessary to re-establish recency of experience, each required flight crew member position shall be occupied by an appropriately qualified person and the simulator shall be operated as if in a normal in-flight environment without use of the repositioning features of the simulator.
- (3) A check person who observes the take-offs and landings of a pilot flight crew member shall certify that the person being observed is proficient and qualified to perform flight duty in operations and may require any additional manoeuvres that are determined necessary to make this certifying statement.
- (b) FLIGHT ENGINEER. An FE who in the preceding 6 months has not flown 50 hours flight time with an AOC holder as FE in the appropriate class of aeroplane shall re-establish recency by taking the proficiency check specified in Subsection 8.10.1.23 of this part.
- (c) FLIGHT NAVIGATOR. An FN who in the preceding 6 months has not flown 50 hours flight time with an AOC holder as FN in the appropriate class of aircraft shall re-establish recency by taking the proficiency check specified in Subsection 8.10.1.23 of this part.

8.10.1.22 PAIRING OF LOW EXPERIENCE PILOTS

- (a) If a CP has fewer than 100 hours of flight time in the type aircraft being flown in commercial air transport, and the PIC is not an appropriately qualified check person, the PIC shall make all take-offs and landings in situations designated as critical by the Authority in IS: 8.10.1.22.
- (b) No PIC or CP may conduct operations for a type aircraft in commercial air transport unless either pilot has at least 75 hours of line operating flight time, either as PIC or CP.
- (c) The Authority may, upon application by the AOC holder, authorise an exemption for the reduction of the number of hours from paragraph (b) by an appropriate amendment to the operations specifications in any of the circumstances identified in IS 8.10.1.22.

8.10.1.23 FLIGHT ENGINEER AND FLIGHT NAVIGATOR PROFICIENCY CHECKS

- (a) No person may serve nor may any AOC holder use a person as an FE or an FN on an aeroplane unless within the preceding 12 calendar months he or she has a proficiency check in accordance with the requirements prescribed by the Authority for the skill test in Part 2 of these regulations.

8.10.1.24 COMPETENCY CHECKS—CABIN CREW MEMBERS

- (a) No person may serve nor may any AOC holder use a person as a cabin crew member unless, since the beginning of the 12th calendar month before that service, that person has passed the competency check prescribed by the Authority in IS: 8.10.1.24 performing the emergency and other duties appropriate to that person's assignment.

8.10.1.25 COMPETENCY CHECKS—FLIGHT OPERATIONS OFFICERS

- (a) No person may serve nor may any AOC holder use a person as a FOO unless, since the beginning of the 12th calendar month before that service, that person has passed the competency check, prescribed by the Authority in IS: 8.10.1.25, performing the flight preparation and subsequent duties appropriate to that person's assignment.

8.10.1.26 SUPERVISED LINE FLYING—PILOTS

- (a) Each pilot initially qualifying as PIC shall complete a minimum of 10 flights performing the duties of a PIC under the supervision of a check person.
- (b) Each PIC transitioning to a new aircraft type shall complete a minimum of 5 flights performing the duties of a PIC under the supervision of a check person.
- (c) Each pilot qualifying for duties other than PIC shall complete a minimum of 5 flights performing those duties under the supervision of a check person.
- (d) During the time that a qualifying PIC is acquiring operating experience, a check person who is also serving as the PIC shall occupy a person station.
- (e) In the case of a transitioning PIC, the check person serving as PIC may occupy the observer's seat if the transitioning pilot has made at least two take-offs and landings in the type aircraft used, and has satisfactorily demonstrated to the check person that he or she is qualified to perform the duties of a PIC for that type of aircraft.

8.10.1.27 SUPERVISED LINE FLYING—FLIGHT ENGINEERS

- (a) Each person qualifying as a FE for each aircraft class – reciprocating engine, turbopropeller powered, or turbojet powered -- shall perform those functions for a minimum of 5 flights under the supervision of a check person approved by the Authority.

8.10.1.28 SUPERVISED LINE EXPERIENCE—CABIN CREW MEMBERS

- (a) Each person qualifying as a cabin crew member shall perform those functions on the following aircraft under the supervision of a check person before qualifying as a required crew member:
 - (1) Reciprocating-engine or turbopropeller powered aircraft – for a minimum of two flights that shall include at least 5 hours flown; or
 - (2) Turbojet powered aircraft—for a minimum of two flights.

8.10.1.29 LINE OBSERVATIONS—FLIGHT OPERATIONS OFFICERS

- (a) No person may serve nor may any AOC holder use a person as a FOO unless, since the beginning of the 12th calendar month before that service, that person has observed, on the flight deck, the conduct of two complete flights, comprising at least 5 total hours, over routes representative of those for which that person is assigned duties.

8.10.1.30 LINE (ROUTE AND AREA) CHECKS—PILOT QUALIFICATION

Note: The terms “line check” and “route and area check” are synonymous.

- (a) No person may serve nor may any AOC holder use a person as a pilot unless, within the preceding 12 calendar-months, that person has passed a line check in which he or she satisfactorily performed his or her assigned duties in one of the types of aircraft he or she is to fly.
- (b) No person may perform PIC duties over a designated special operational area that requires a special navigation system or procedures or in EDTO operations unless his or her competency with the system and procedures has been demonstrated to the AOC holder within the preceding 12 calendar-months.
- (c) Each PIC shall demonstrate operational competency by navigation over the route and area to be flown and the aerodromes to be used as PIC under the supervision of a check person and, on a continuing basis, by flights performing PIC duties. This, at a minimum, shall include a PIC demonstration of knowledge in the following:
 - (1) The terrain and minimum safe altitudes.
 - (2) The seasonal meteorological conditions.
 - (3) The search and rescue procedures.
 - (4) The navigational facilities and procedures, including any LORAN procedures, associated with the route along which the flight is to take place.
 - (5) Procedures applicable to:
 - (i) Flight paths over heavily populated areas or high air traffic density;
 - (ii) Obstructions;
 - (iii) Physical layout;
 - (iv) Lighting, approach aids;
 - (v) Arrival, departure, holding and IAPs; and
 - (vi) Applicable operating minima.
- (d) NOTAMs.

8.10.1.31 RESERVED**8.10.1.32 PILOT-IN-COMMAND LOW MINIMA AUTHORISATION**

- (a) Until a PIC has 15 flights performing PIC duties in the aircraft type (which included 5 approaches to landing using CAT I or CAT II procedures), he or she may not plan for or initiate an instrument approach when the DH or MDA is less than 100 m (300 ft) and the visibility less than 1.5km (1 SM).
- (b) Until a PIC has 20 flights performing PIC duties in the aircraft type (which included 5 approach and landing using CAT III procedures), he or she may not plan for or initiate an approach when the DH or MDA is less than 30 m (100 ft) or the visibility is less than 350 m RVR (1,200 ft).

8.10.1.33 DESIGNATED SPECIAL AERODROMES AND HELIPORTS - PILOT-IN-COMMAND QUALIFICATION

- (a) The Authority may determine that certain airports, due to items such as surrounding terrain, obstructions, or complex approach or departure procedures, are special aerodromes requiring special aerodrome qualifications and that certain areas or routes, or both, require a special type of navigation qualifications.
- (b) No person may serve nor may any AOC holder use a person as PIC for operations at designated special aerodromes and heliports unless within the preceding 12 calendar-months:
 - (1) The PIC has been qualified by the AOC holder through a pictorial means acceptable to the Authority for that aerodrome; or
 - (2) The PIC or the assigned CP has made a take-off and landing at that aerodrome while serving as a flight crew member for the AOC holder.
 - (3) If the 12 months qualification period required in item (b) has expired, the PIC shall re-qualify in accordance with the requirements in item (b).
- (c) Designated special aerodrome and heliport limitations are not applicable if the operation will occur:
 - (1) During daylight hours;
 - (2) When the visibility is at least 5 km (3 miles); and
 - (3) When the ceiling at that aerodrome is at least 300 m (1,000 ft) above the lowest initial approach altitude prescribed for an IAP.

8.10.1.34 RECURRENT TRAINING—FLIGHT CREW MEMBERS

- (a) No person may serve nor may any AOC holder use a person as a flight crew member unless within the preceding 12 calendar-months that person has completed the recurrent ground and flight training curricula approved by the Authority.
- (b) The recurrent ground training shall include training on:
 - (1) Aircraft systems and limitations and normal, abnormal and emergency procedures;
 - (2) Emergency equipment and drills;
 - (3) CRM;
 - (4) Recognition or transportation of dangerous goods; and
 - (5) Security training.
- (c) The recurrent flight training curriculum shall include:
 - (1) Manoeuvring and safe operation of the aircraft in accordance with AOC holder's normal, abnormal and emergency procedures;
 - (2) Manoeuvres and procedures necessary for avoidance of in-flight hazards; and
 - (3) For authorised pilots, at least one LVTO to the lowest applicable minimum LVTO and two approaches to the lowest approved minimums for the AOC holder, one of which is to be a missed approach.
- (d) Satisfactory completion of a proficiency check with the AOC holder for the type aircraft and operation to be conducted may be used in lieu of recurrent flight training.
- (e) Detailed recurrent training requirements for pilots, FEs, and FNs are prescribed in IS 8.10.1.33.

8.10.1.35 RECURRENT TRAINING AND RE-ESTABLISHMENT OF QUALIFICATIONS—CABIN CREW MEMBERS

- (a) No person may serve nor may any AOC holder use a person as a cabin crew member unless within the preceding 12 calendar-months that person has completed the recurrent ground curricula approved by the Authority relevant to the type(s) and/or variant(s) of aircraft and operations to which he or she is assigned.
- (b) The recurrent ground training shall include training on:
 - (1) Aircraft-specific configuration, equipment and procedures;
 - (2) Emergency and first aid equipment and drills;
 - (3) CRM;
 - (4) Recognition or transportation of dangerous goods; and
 - (5) Security training.
- (c) Specific normal and emergency programme training requirements for cabin crew members are prescribed in IS: 8.10.1.34.
- (d) A required cabin crew member who, due to a period of inactivity, has not met the recurrent training requirements in paragraphs (a) through (c) shall complete the initial AOC training programme and competency check specified in 8.10.1.24 of this part.

8.10.1.36 RECURRENT TRAINING AND RE-ESTABLISHMENT OF QUALIFICATIONS—FLIGHT OPERATIONS OFFICERS

- (a) No person may serve nor may any AOC holder use a person as a FOO unless within the preceding 12 calendar-months that person has completed the recurrent ground curricula approved by the Authority relevant to the type(s) and/or variant(s) of aircraft and positions to which he or she is assigned.
- (b) Specific requirements for FOO recurrent training are prescribed in IS: 8.10.1.35. A required FOO who, due to a period of inactivity, has not met the recurrent training requirements in paragraphs (a) through (b) shall complete the initial AOC training programme and competency check specified in 8.10.1.25 of this part.

8.10.1.37 INSTRUCTOR QUALIFICATIONS –FLIGHT CREW, CABIN CREW, FLIGHT OPERATIONS OFFICER, DANGEROUS GOODS

- (a) **FLIGHT CREW.** No AOC holder may use a person nor may any person serve as a flight instructor in an established flight training programme unless, with respect to the aircraft type involved, that person:
 - (1) Holds the personnel licences and ratings required to serve as a PIC, an FE, or an FN, as applicable;
 - (2) Has satisfactorily completed the appropriate training phases for the aircraft, including recurrent training and differences training, that are required to serve as a PIC, an FE, or an FN, as applicable;

- (3) Has satisfactorily completed the appropriate proficiency, competency and recency of experience checks that are required to serve as a PIC, an FE, or an FN, as applicable;
 - (4) Has satisfactorily completed the applicable initial or transitional training requirements and the Authority-observed in-flight competency check; and
 - (5) Holds the appropriate medical certificate for service as a required crew member.
- (b) FLIGHT INSTRUCTOR – FLIGHT SIMULATION TRAINING. No person may serve nor may any AOC holder use a person as a Flight Instructor in an FSTD, unless, since the beginning of the 12th calendar month before that service, that person has:
 - (1) Flown at least five flights as a required crew member for the type of aircraft involved; or
 - (2) Observed, on the flight deck, the conduct of 2 complete flights in the aircraft type to which the person is assigned.
- (c) CABIN CREW. No AOC holder may use a person nor may any person serve as an instructor in an established cabin crew training programme unless, with respect to the aircraft type or position involved, that person:
 - (1) Holds the qualification required to serve as a cabin crew member;
 - (2) Has satisfactorily completed the appropriate training phases for the aircraft and position involved, including recurrent training and differences training, that are required to serve as a cabin crew member;
 - (3) Has satisfactorily completed the appropriate competency and recency of experience checks that are required to service as a cabin crew member;
 - (4) Has satisfactorily completed the applicable initial or transitional training requirements and the Authority-observed competency check.
- (d) FLIGHT OPERATIONS OFFICER. No AOC holder may use a person nor may any person serve as an instructor in an established FOO training programme unless, with respect to the aircraft type and position involved, that person:
 - (1) Holds the operator authorization required to serve as a FOO;
 - (2) Has satisfactorily completed the appropriate training phases for the aircraft or position involved, including recurrent training and differences training, that are required to serve as a FOO;
 - (3) Has satisfactorily completed the appropriate competency and recency of experience checks that are required to serve as a FOO; and
 - (4) Has satisfactorily completed the applicable initial or transitional training requirements and the Authority-observed competency check.
- (e) DANGEROUS GOODS. No AOC holder may use a person nor may any person serve as an instructor in an established dangerous goods training programme unless:
 - (1) they have adequate instructional skills and
 - (2) have successfully completed a dangerous goods training programme and in an applicable category to be taught.

8.10.1.38 INSTRUCTOR TRAINING

- (a) No person may serve nor may any AOC holder use a person as an instructor for flight crew, cabin crew, FOOs, or dangerous goods, unless he or she has completed the curricula approved by the Authority for those functions for which they are to serve.
- (b) Specific training programme requirements for flight crew instructors are prescribed in IS 8.10.1.37.

8.10.1.39 PERSONNEL APPROVED TO CONDUCT CHECKS

- (a) The Authority may approve the following AOC holder personnel to conduct checks when such personnel meet the requirements for the authorised responsibilities, and may be approved for either aircraft or simulator, or both, as applicable, for checking of flight crew.
 - (1) Check pilot;
 - (2) Check flight engineer;
 - (3) Check flight navigator;
 - (4) Check cabin crew member; and
 - (5) Check FOO.
- (b) The authorized duties of check personnel are to:
 - (1) Conduct initial and recurrent proficiency checks for flight crew and competency checks for cabin crew and FOO,
 - (2) Certify as satisfactory, the knowledge and proficiency of the flight crew, and the knowledge and competency of the cabin crew and FOOs; and
 - (3) For all check personnel, supervise operating experience (OE).
- (c) No person may serve nor may any AOC holder use a person as a check personnel under the AOC holder's crew member checking and standardisation programme in Part 9 of these regulations unless that person has:
 - (1) been identified by name and function and approved in writing by the Authority; and
 - (2) successfully completed the AOC holder's curricula approved by the Authority for those functions for which he or she is to serve.
- (d) Once approved, no person may serve nor may any AOC holder use a person as a check personnel for any flight crew, cabin crew or FOO checks unless that person has demonstrated, initially and at least biennially to an Authority inspector, the ability to conduct a check for which he or she is approved.

8.10.1.40 CHECK PERSONNEL QUALIFICATIONS

- (a) CHECK PERSONNEL FOR FLIGHT CREW (Check Pilot / Check Flight Engineer / Check Flight Navigator).
 - (1) No AOC holder may use a person, nor may any person serve as a check personnel in an established flight crew training programme unless, with respect to the aircraft type involved, that person:

- (i) Holds the personnel licences and ratings required to serve as a PIC, an FE, or an FN, as applicable;
 - (ii) Has satisfactorily completed the appropriate training phases for the aircraft, including recurrent training and differences training, that are required to serve as a PIC, an FE, or an FN, as applicable;
 - (iii) Has satisfactorily completed the appropriate proficiency, competency and recency of experience checks that are required to serve as a PIC, an FE, or an FN, as applicable;
 - (iv) Has satisfactorily completed the applicable initial or transitional training requirements and the Civil Aviation Authority-observed in-flight competency check for check personnel duties;
 - (v) Holds the appropriate medical certificate if serving as a required flight crew member; and
 - (vi) Has been approved by the Authority for the check airman duties involved.
- (2) CHECK PERSONNEL (Check Pilot / Check Flight Engineer / Check Flight Navigator) – SIMULATOR: ADDITIONAL REQUIREMENTS. No person may serve nor may any AOC holder use a person as a check personnel in an FSTD, unless, since the beginning of the 12th calendar month before that service, that person has:
 - (i) Flown at least 5 flights as a required crew member for the type of aircraft involved; or
 - (ii) Observed, on the flight deck, the conduct of 2 complete flights in the aircraft type to which the person is assigned.
- (b) CHECK PERSONNEL FOR CABIN CREW (Check Cabin Crew Member).
 - (1) No AOC holder may use a person, nor may any person serve as a check cabin crew member in an established cabin crew training programme unless, with respect to the aircraft type or position involved, that person:
 - (i) Holds the qualifications required to serve as a cabin crew member;
 - (ii) Has satisfactorily completed the appropriate training phases for the aircraft and or position, including recurrent training and differences training, that are required to serve as a cabin crew member;
 - (iii) Has satisfactorily completed the appropriate competency and recency of experience checks that are required to serve as a cabin crew member;
 - (iv) Has satisfactorily completed the applicable initial or transitional training requirements and the Authority-observed competency check for the check personnel duties; and
 - (v) Has been approved by the Authority for the check cabin crew member duties involved.
- (c) CHECK PERSONNEL FOR FLIGHT OPERATIONS OFFICERS (Check FOO).
 - (1) No AOC holder may use a person, nor may any person serve as a check flight operations officer in an established FOO training programme unless, with respect to the aircraft type or position involved, that person:
 - (i) Holds the licence required to serve as a FOO;

- (ii) Has satisfactorily completed the appropriate training phases for the aircraft and or position, including recurrent training and differences training, that are required to serve as a FOO;
- (iii) Has satisfactorily completed the appropriate competency and recency of experience checks that are required to serve as a FOO;
- (iv) Has satisfactorily completed the applicable initial or transitional training requirements and the Authority-observed competency check for the check FOO duties involved.
- (v) Has been approved by the Authority for the check FOO duties involved.

8.10.1.41 CHECK PERSONNEL TRAINING

- (a) No person may serve nor may any AOC holder use a person for checks unless he or she has completed the curricula approved by the Authority for those functions for which they are to serve.
- (b) Specific training programme requirements for check personnel are prescribed in IS 8.10.1.40.

8.10.1.42 SINGLE-PILOT OPERATIONS UNDER INSTRUMENT FLIGHT RULES OR AT NIGHT – QUALIFICATIONS, TRAINING, CHECKING

- (a) No person may conduct single-pilot-operations under IFR or at night in commercial air transportation, in accordance with 8.8.1.30 of this part, unless the operation is approved by the Authority and the pilot has at least 50 hours flight time in the aircraft class in which he or she is to serve and of those 50 hours, not less than 10 hours shall be as PIC.
- (b) For single-pilot-operations conducted under IFR:
 - (1) The pilot shall have at least 25 hours flight time under IFR in the type and class of aircraft in which he or she is to serve.
 - (2) The 25 hours flight time under IFR referenced in (b)(1) may form part of the required 50 hours flight time in aircraft class.
 - (3) The pilot shall have performed in single-pilot-operations, at least 5 IFR flights including 3 instrument approaches in the class of aircraft in which he or she is to serve within 90 days preceding the flight, or
 - (4) Within 90 days preceding the flight, the pilot has satisfactorily completed the single-pilot-operation instrument competency check, as prescribed by the Authority, in the class of aircraft in which he or she is to serve.
- (c) For single-pilot-operations conducted at night:
 - (1) The pilot shall have performed in single-pilot-operations at least 3 take-offs and landings at night in the type and class of aircraft in which he or she is to serve within 90 days preceding the flight, and
 - (2) Have successfully completed the approved single-pilot-operation training programme prescribed by the Authority.
- (d) No pilot may serve nor may any AOC holder assign a person to operate an aircraft in single-pilot-operations in commercial air transport unless the pilot has:
 - (1) Successfully completed the relevant training requirements of 8.10 of this part applicable to flight crew members engaged in commercial air transport;

- (2) Successfully completed the approved single-pilot operations training programme prescribed by the Authority, and
- (3) Satisfactorily completed the single-pilot operations checking requirements, as prescribed by the Authority, in the type and class of aircraft in which he or she is to serve.

Note: In addition to successfully completing the relevant training requirements of 8.10 of this part that are applicable to flight crew members engaged in commercial air transport, additional training for pilots conducting single-pilot-operations at night shall include passenger briefings with respect to emergency evacuation, autopilot management and the use of simplified in-flight documentation.

8.10.1.43 RESERVED

8.10.1.44 MONITORING OF TRAINING AND CHECKING ACTIVITIES

- (a) To enable adequate supervision of its training and checking activities, the AOC holder shall forward to the Authority at least 24 hours before the scheduled activity the dates, report times and report location of all:
 - (1) Training for which a curriculum is approved in the AOC holder's training programme; and
 - (2) Proficiency, competency and line checks.
- (b) Failure to provide the information required by paragraph (a) may invalidate the training or check and the Authority may require that it be repeated for observation purposes.

8.10.1.45 TERMINATION OF A PROFICIENCY, COMPETENCY OR LINE CHECK

- (a) If it is necessary to terminate a check for any reason, the AOC holder may not use the crew member or FOO in commercial air transport operations until the completion of a satisfactory recheck.

8.10.1.46 RECORDING OF CREW MEMBER AND FLIGHT OPERATIONS OFFICER QUALIFICATIONS

- (a) The AOC holder shall record in its records maintained for each crew member and FOO, the completion of each of the qualifications required by this Part.
- (b) A crew member or FOO may complete the curricula required by this Part concurrently or intermixed with other required curricula, but completion of each of these curricula shall be recorded separately.

8.10.1.47 RESERVED

8.10.1.48 ELIGIBILITY PERIOD

- (a) Crew members required to take a proficiency check, test or competency check, or recurrent training to maintain qualification for commercial air transport operations may complete those requirements at any time during the eligibility period.

- (b) The eligibility period is defined as the three calendar month period including the month-prior, the month-due, and the month-after any due date specified by this subsection.
- (c) Completion of the requirement at any time during the period shall be considered as completed in the month-due for calculation of the next due date.

8.10.1.49 REDUCTIONS IN REQUIREMENTS

- (a) The Authority may authorise reductions in, or waive, certain portions of the training requirements of this subpart, taking into account the previous experience of the crew members.
- (b) Any AOC holder request for reduction or waiver shall be made in writing and outline the basis under which the request is made.
- (c) If the request was for a specific crew member, the correspondence from the Authority authorising the reduction and the basis for it shall be filed in the record the AOC holder maintains for that crew member.
- (d) If approved by the Authority, a person need not complete the programmed hours of flight training for the particular aircraft if he or she:
 - (1) progresses successfully through flight training,
 - (2) is recommended by their instructor, and
 - (3) successfully completes the appropriate flight check with a check person.
- (e) If approved by the Authority, a person need not complete the programmed hours of cabin crew or flight operations officer training if he or she:
 - (1) progresses successfully through cabin crew or flight operations officer training,
 - (2) is recommended by their instructor, and
 - (3) successfully completes the appropriate competency check with a check person.
- (f) Whenever the Authority finds that 20 per cent of the checks given at a particular training base during the previous 6 months are unsuccessful, this method of approval will not be used by the AOC holder at that base until the Authority finds that the effectiveness of the training programme has improved.

8.11 FATIGUE MANAGEMENT

8.11.1.1 APPLICABILITY

- (a) This section is applicable to the management of fatigue-related safety risks of crew members and FOOs/flight dispatchers engaged in commercial air transport flight operations.

8.11.1.2 MANAGING FATIGUE-RELATED SAFETY RISKS

- (a) For the purpose of managing fatigue-related safety risks, an AOC holder shall establish either:
 - (1) flight time, flight duty period, duty period limitations and rest period requirements that are within the prescriptive fatigue management regulations in 8.12 of this part; or
 - (2) An FRMS in compliance with paragraph 8.11.1.2(e) of this subsection; or
 - (3) a FRMS in compliance with paragraph 8.11.1.2(e) of this subsection for part of its operations and the requirements of 8.12 of this part for the remainder of its operations.
- (b) Where the operator adopts prescriptive fatigue management regulations for part or all of its operations, the Authority may approve, in exceptional circumstances, variations to these regulations on the basis of a risk assessment provided by the operator. Approved variations shall provide a level of safety equivalent to, or better than that achieved through the prescriptive fatigue management regulations.
- (c) The Authority shall approve an operator's FRMS before it may take the place of any or all of the prescriptive fatigue management regulations. An approved FRMS shall provide a level of safety equivalent to, or better than, the prescriptive fatigue management regulations.
- (d) Operators using an FRMS shall adhere to the following provisions of the FRMS approval process that allows the Authority to ensure that the approved FRMS meets the requirements of paragraph 8.11.1.2(c) of this subsection:
 - (1) Establish maximum values for flight times and/or flight duty period(s) and duty period(s), and minimum values for rest periods that shall be based upon scientific principles and knowledge, subject to safety assurance processes.

Note: Guidance on the development and implementation of fatigue management regulations is contained in ICAO Doc 9966, Manual for the Oversight of Fatigue Management Approaches.

- (2) Adhere to Authority mandates to decrease maximum values and increase in minimum values in the event that the operator's data indicates these values are too high to too low, respectively; and
 - (3) Provide justification to the Authority for any increase in maximum values or decrease in minimum values based on accumulated FRMS experience and fatigue-related data before such changes will be approved by the Authority.
- (e) Operators implementing an FRMS to manage fatigue-related safety risks shall, as a minimum:
 - (1) Incorporate scientific principles and knowledge within the FRMS;
 - (2) Identify fatigue-related safety hazards and the resulting risks on an ongoing basis;
 - (3) Ensure that the remedial actions, necessary to effectively mitigate the risks associated with the hazards, are implemented promptly;

- (4) Provide for continuous monitoring and regular assessment of the mitigation of fatigue risks achieved by such actions; and
- (5) Provide for continuous improvement to the overall performance of the FRMS.

Note: Provisions on the protection of safety data, safety information and related sources are contained in ICAO Annex 19, Appendix 3.

8.11.1.3 DUTY AND REST PERIODS

- (a) Duty and rest periods for flight crew and cabin crew are prescribed in Subpart 8.12.

8.12 FLIGHT TIME, FLIGHT DUTY PERIODS, DUTY PERIODS, AND REST PERIODS FOR FATIGUE MANAGEMENT

8.12.1 GENERAL

8.12.1.1 APPLICABILITY

- (a) This section is applicable to the rest, duty and flight time limitations of crew members and FOOs (flight dispatchers) engaged in commercial air transport flight operations.

8.12.1.2 NUTRITION

- (a) Crew members and operators should be aware that a lack of sustenance could prove detrimental to an individual's performance and level of vigilance. Meal opportunities should occur sufficiently frequently in order to avoid any detriment to a crew member's performance. Where the FDP exceeds 6 hours, a meal opportunity shall be built into the schedule.

8.12.1.3 FLIGHT DUTY, DUTY AND REST PERIOD RECORDS

- (a) The operator shall ensure that crew member's records include:
 - (1) block times;
 - (2) start, duration and end of each duty or flight duty periods;
 - (3) rest periods and days free of all duties; and are maintained to ensure compliance with the requirements of this Subpart; copies of these records will be made available to the crew member upon request.
- (b) All crew members shall maintain an individual record as appropriate of his/her:
 - (1) block times;
 - (2) start, duration and end of each duty or flight duty periods; and
 - (3) rest periods and days free of all duties.

- (c) A crew member shall present his/her records on request to any operator who employs his/her services before he/she commences a flight duty period.
- (d) Records shall be preserved for at least 15 calendar months from the date of the last relevant entry.
- (e) Additionally, operators shall separately retain all commander's discretion reports of extended flight duty periods, extended flight hours and reduced rest periods for at least six months after the event.

8.12.2 OBJECTIVE AND SCOPE

8.12.2.1 AIR OPERATOR RESPONSIBILITIES

- (a) The operator shall establish a flight and duty time limitations and rest scheme (FTL) for crew members.
- (b) The operator shall ensure that for all its flights:
 - (1) the flight and duty time limitations and rest scheme is in accordance with both:
 - (i) the provisions of this Subpart; and
 - (ii) any additional provisions that are applied by the Authority in accordance with the provisions of this Subpart for the purpose of maintaining safety.
 - (2) Flights are planned to be completed within the allowable flight duty period taking into account the time necessary for pre-flight duties, the flight and turn-around times and the nature of operation.
 - (3) Duty rosters will be prepared and published sufficiently in advance to provide the opportunity for crew members to plan adequate rest.
- (c) The operator shall nominate a home base for each crew member.
- (d) Operators shall be expected to appreciate the relationship between the frequencies and pattern of flight duty periods and rest periods and give due consideration to the cumulative effects of undertaking long duty hours interspersed with minimum rest.
- (e) Operators shall allocate duty patterns which avoid such undesirable practices as alternating day/night duties or the positioning of crew members so that a serious disruption of established sleep/work pattern occurs.
- (f) Operators shall plan local days free of duty and notify crew members in advance.
- (g) Operators shall ensure that rest periods provide sufficient time to enable crew to overcome the effects of the previous duties and to be well rested by the start of the following flight duty period.
- (h) Operators shall ensure flight duty periods are planned to enable crew members to remain sufficiently free from fatigue so they can operate to a satisfactory level of safety under all circumstances.

8.12.2.2 CREW MEMBER RESPONSIBILITIES

- (a) A crew member shall not operate an aeroplane if he/she knows that he/she is suffering from or is likely to suffer from fatigue or feels unfit, to the extent that the flight may be endangered.
- (b) Crew members should make optimum use of the opportunities and facilities for rest provided and plan and use their rest periods properly.

8.12.2.3 RESPONSIBILITIES OF AUTHORITY

- (a) The Authority has established the following regulations for the purpose of managing fatigue. These regulations are based upon scientific principles and knowledge, with the aim of ensuring that flight and cabin crew members are performing at an adequate level of alertness.

8.12.2.4 VARIATIONS

- (a) The Authority may grant variations to the requirements in this Subpart in accordance with applicable laws and procedures and in consultation with interested parties.
- (b) Each operator will have to demonstrate to the Authority, using operational experience and taking into account other relevant factors such as current scientific knowledge, that its request for a variation produces an equivalent level of safety. Such variations will be accompanied with suitable mitigation measures where appropriate.
- (c) In deciding to grant a variation the Authority shall take into account all the requirements of this subpart. Such variations should be granted only in isolation or in limited combinations.

8.12.3 FLIGHT PERIODS AND DUTY PERIODS LIMITATIONS**8.12.3.1 CUMULATIVE DUTY HOURS**

- (a) The operator shall ensure that the total duty periods to which a crew member is assigned do not exceed:
 - (1) 190 duty hours in any 28 consecutive days, spread as evenly as practicable throughout this period; and
 - (2) 60 duty hours in any seven (7) consecutive days.

8.12.3.2 CUMULATIVE TOTAL BLOCK HOURS

- (a) The operator shall ensure that the total block times of the flights on which an individual crew member is assigned as an operating crew member does not exceed;
- (b) 1000 block hours in a calendar year, spread as evenly as practicable throughout the year;
- (c) 100 block hours in any 28 consecutive days.

8.12.3.3 MAXIMUM DAILY FLIGHT DUTY PERIOD (FDP)

- (a) Except for single-pilot operations and to emergency medical service operations:
 - (1) the operator shall specify reporting times that realistically reflect the time for safety-related ground duties as approved by the Authority;
 - (2) The maximum basic daily FDP is 13 hours;

- (3) These 13 hours will be reduced by 30 minutes for each sector from the third sector onwards with a maximum total reduction of two hours;
- (4) When the FDP starts in the WOCL, the maximum stated in point (2) and point (3) will be reduced by 100 % of its encroachment up to a maximum of two hours. When the FDP ends in or fully encompasses the WOCL, the maximum FDP stated in point (2) and point (3) will be reduced by 50 % of its encroachment. (see IS: 8.12.3.3)

8.12.3.4 EXTENSIONS

- (a) The maximum daily FDP can be extended by up to one hour.
- (b) Extensions are not allowed for a basic FDP of six sectors or more.
- (c) Where an FDP encroaches on the WOCL by up to two hours extensions are limited to up to four sectors.
- (d) Where an FDP encroaches on the WOCL by more than two hours extensions are limited to up to two sectors.
- (e) The maximum number of extensions is two in any seven consecutive days.
- (f) Where an FDP is planned to use an extension pre and post flight minimum rest is increased by two hours or post flight rest only is increased by four hours. Where the extensions are used for consecutive FDPs the pre and post rest between the two operations shall run consecutively.
- (g) When an FDP with extension starts in the period 22:00 to 04:59 the operator will limit the FDP to 11:45.

8.12.3.5 CABIN CREW

- (a) For cabin crew being assigned to a flight or series of flights, the FDP of the cabin crew may be extended by the difference in reporting time between cabin crew and flight crew, as long as the difference does not exceed one hour.

8.12.3.6 OPERATIONAL ROBUSTNESS

- (a) Planned schedules must allow for flights to be completed within the maximum permitted flight duty period. To assist in achieving this, operators will take action to change a schedule or crewing arrangements at the latest where the actual operation exceeds the maximum FDP on more than 33 % of the flights in that schedule during a scheduled seasonal period.

8.12.3.7 NIGHT DUTIES

- (a) A crew member may be scheduled for no more than 3 consecutive duties that encroach on the period 01:00 to 06:59 local time within any 7 consecutive days.

8.12.3.8 POSITIONING & TRAVELLING;

- (a) All the time spent on positioning is counted as duty.

- (b) Positioning after reporting but prior to operating shall be included as part of the FDP but shall not count as a sector.
- (c) A positioning sector immediately following operating sector will be taken into account for the calculation of minimum rest as defined in Paragraph 8.12.1.5 (a)(1) and (a)(2).

8.12.3.9 DELAYED REPORTING TIME IN A SINGLE FDP;

- (a) When a crew member is informed of a delay to the reporting time due to a changed schedule, before leaving the place of rest and within a maximum of ninety minutes before start of the rostered FDP, the FDP shall be calculated as follows. When the delay is less than 4 hours, the maximum FDP allowed shall be based on the original reporting time and the FDP shall start at the actual report time. Where the delay is 4 hours or more, the maximum FDP shall be based on the more limiting time band of the planned and the actual report time and the FDP starts 4 hours after the original report time.
- (b) When an operator informs a crew member before leaving the place of rest of a delay in reporting time of 10 hours or more ahead, and that crew member is not further disturbed by the operator until a mutually agreed hour, then that elapsed time is classed as a rest period. If, upon the resumption of duty, further delays occur, then the appropriate criteria in this paragraph and paragraph (1) above shall be applied to the re-arranged reporting time.

8.12.3.10 EXTENDED FDP (SPLIT DUTY);

- (a) The Authority may grant approval to an operation based on an extended FDP which includes a break.
- (b) Each operator will have to demonstrate to the Authority, using operational experience and taking into account other relevant factors, such as current scientific knowledge, that its request for an extended FDP produces an equivalent level of safety.
- (c) Maximum extended FDP with split duty is 21 hours.

8.12.4 DUTY REST PERIODS

8.12.4.1 MINIMUM REST

- (a) The minimum rest which must be provided before undertaking a flight duty period starting at home base shall be at least as long as the preceding duty period or 12 hours whichever is the greater;
- (b) The minimum rest which must be provided before undertaking a flight duty period starting away from home base shall be at least as long as the preceding duty period or 10 hours whichever is the greater; when on minimum rest away from home base, the operator must allow for an eight hour sleep opportunity taking due account of travelling and other physiological needs;
- (c) The operator will ensure that effects on crew members of time zone differences will be compensated by additional rest, as regulated by the Authority.
- (d) Notwithstanding 8.12.4.1(a) and 8.12.4.1(b), the Authority may grant reduced rest arrangements. Each operator will have to demonstrate to the Authority, using operational experience and taking

into account other relevant factors, such as current scientific knowledge, that its request for reduced rest arrangements produces an equivalent level of safety.

8.12.4.2 REST PERIODS

- (a) The operator shall ensure that the minimum rest provided as outlined above is increased periodically to a weekly rest period, being a 36-hour period including two local nights, such that there shall never be more than 168 hours between the end of one weekly rest period and the start of the next. As an exception, the Authority may decide that the second of those local nights may start from 20:00 hours if the weekly rest period has a duration of at least 40 hours.

8.12.4.3 EXTENSION OF FLIGHT DUTY PERIOD DUE TO IN-FLIGHT REST

- (a) Flight Duty Period Extension - Flight Crew Augmentation:
 - (1) Augmentation 1
 - (i) On aircraft where the standard crew is only two pilots and is augmented with an additional single qualified flight crew member (see Paragraph 8.10.1.5(b)):
 - (A) The operator must provide a comfortable reclining seat separated and screened from the flight deck and the passenger.
 - (B) The maximum FDP is 16 hours irrespective of encroachment of the WOCL.
 - (2) Augmentation 2
 - (i) On aircraft where the standard crew is only two pilots and is augmented with an additional single qualified flight crew member (see Paragraph 8.10.1.5(b)):
 - (A) The operator provides a bunk screened from the flight deck and passengers.
 - (B) The maximum FDP is 18 hours irrespective of encroachment of the WOCL.
 - (3) Augmentation 3
 - (i) On aircraft where the standard crew is only two pilots and is augmented with two additional qualified flight crew member (see Paragraph 8.10.1.5(b)):
 - (A) The operators must provide bunks separated and screened from the flight deck and passengers.
 - (B) The maximum FDP is 20 hours irrespective of encroachment of the WOCL.
- (b) In all cases where the flight crew are augmented the sharing of time away from task by crew members leaving their posts should be kept in balance. With reference to the provisions of dedicated crew rest facilities, as de-fined in 8.12.4.3 (1), 8.12.4.3 (2) and 8.12.4.3 (3) above, these will be progressively introduced in conjunction with the acquisition of new aircraft types.
- (c) Flight Duty Period Extension - Cabin Crew:
 - (1) An Operator will agree with the authority the legal minimum in-flight rest required by cabin crew member(s) when the FDP goes beyond the limitations of Paragraph 8.12.1.4. The authority must take into account the crew rest facilities provided on board the aircraft in reaching their decision.
 - (2) Cabin Crew carried in excess of the minimum necessary to meet safety requirements may be counted as augmented crew for the purposes of calculating the maximum permitted FDP and inflight rest requirements. In the case where Cabin Crew are augmented crew members leaving their posts should be kept in balance.

8.12.5 STANDBY, EXTENSION OF FLIGHT DUTY AND UNFORESEEN CIRCUMSTANCES**8.12.5.1 AIRPORT STANDBY**

- (a) A crew member is on airport standby from reporting at the normal report point until the end of the notified standby period.
- (b) Airport standby will count in full for the purposes of cumulative duty hours.
- (c) Where airport standby is immediately followed by a flight duty, airport standby shall count for 50% towards the total cumulative duty hours and flight duty period. In such a case, airport standby shall be added to the duty period referred to in Paragraph 8.12.1.5(a)(1) and (a)(2) for the purposes of calculating minimum rest.
- (d) Where the airport standby does not lead to assignment on a flight duty, it shall be followed by at least a rest period.
- (e) While on airport standby the operator will provide to the crew member a quiet and comfortable place not open to the public.

8.12.5.2 OTHER FORMS OF STANDBY (INCLUDING STANDBY AT HOTEL)

- (a) All activity shall be rostered and/or notified at least 12 hours in advance.
- (b) Standby duty commences at start of standby period and ends at report time.
- (c) The maximum duration of Standby duty will not exceed 12 hours.
- (d) Rest period after standby duty is at least equal to period from start of standby to end of Duty Period.
- (e) Standby is duty and counts in full towards total cumulative duty hours if not called for duty.
- (f) Reserve (Contactable/On-Call): A scheduled period of time during a day, other than a day off, of between 2 and 4 hours between 08:00 and 20:00 local time during which an operator may expect to be able to contact a crew member solely for notification of duty the next day (more than 12 hours in advance). Such periods do not count in cumulative duty totals and are not standby. There are no constraints on crew activity whilst on reserve.
- (g) A crew member is on standby from the beginning to the end of the notified standby period or until actual report time for duty having been called during the standby period.
- (h) A crew member shall not be contacted to report for a duty which starts more than 2 hours after the end of the standby period.
- (i) Airport Standby duty will count in full for the purposes of cumulative duty hours totals.

8.12.5.3 UNFORESEEN CIRCUMSTANCES IN ACTUAL FLIGHT OPERATIONS - PIC DISCRETION

- (a) Taking into account the need for careful control of these instances implied underneath, during the actual flight operation, which starts at the reporting time, the limits on flight duty, duty and rest periods prescribed in this Subpart may be modified in the event of unforeseen circumstances. Any such modifications must be acceptable to the commander after consultation with all other crew members and must, in all circumstances, comply with the following:
 - (1) The maximum FDP referred to in Paragraph 8.12.1.4(a) above may not be increased by more than two hours unless the flight crew has been augmented, in which case the maximum flight duty period may be increased by not more than three hours;
 - (2) If on the final sector within a FDP unforeseen circumstances occur after take-off that will result in the permitted increase being exceeded, the flight may continue to the planned destination or alternate;
 - (3) In the event of such circumstances, the rest period following the FDP may be reduced but never below the minimum rest defined in Paragraph 8.12.1.5(a)(2);
- (b) The commander shall, in case of special circumstances, which could lead to severe fatigue, and after consultation with the crew members affected, reduce the actual flight duty time and/or increase the rest time in order to eliminate any detrimental effect on flight safety.
- (c) The operator shall ensure that:
 - (1) The commander submits a report to the operator whenever a FDP is increased by his/her discretion or when a rest period is reduced in actual operation; and
 - (2) Where the increase of a FDP or reduction of a rest period exceeds one hour, a copy of the report, to which the operator must add his comments, is sent to the Authority no later than 28 days after the event.

8.13 FLIGHT RELEASE—COMMERCIAL AIR TRANSPORT

8.13.1.1 APPLICABILITY

- (a) This Subpart is applicable to an AOC holder and the person designated by the AOC holder to issue a flight release.

8.13.1.2 QUALIFIED PERSONS REQUIRED FOR OPERATIONAL CONTROL FUNCTIONS

- (a) A qualified person shall be designated by the AOC holder to exercise the functions and responsibilities for operational control of each flight in commercial air transport.
- (b) For passenger-carrying flights on aircraft types with more than nineteen (19) seats, a licensed and qualified flight operation officer /flight dispatcher shall be on-duty at an operations base to perform the operational control functions;
- (c) Operators required to make use of a flight operations officer/flight dispatcher, shall issue an operator dispatcher authorization, as part of the approved method of control and supervision of flight operations. The operator shall require that, as a minimum, such persons meet the

requirements specified in CCAR 2.8.3 for the flight operations officer/flight dispatcher company license.

- (d) For all other flights, the Director of Operations and the PIC are the qualified persons exercising operational control responsibilities, and shall be available for consultation before, during and immediately following the flight operation.
 - (1) The Director of Operations may delegate the functions for initiating, continuation, diversion and termination of a flight to other employees. However, the Direction of Operations shall retain full responsibility for these functions.
- (e) For all flights, the PIC shares in the responsibility for operational control of the aircraft and has the situational authority to make decisions regarding operational control issues in-flight.
 - (1) Where a decision of the PIC differs from that recommended, the person making the recommendation shall make a record of the associated facts.

8.13.1.3 FUNCTIONS ASSOCIATED WITH OPERATIONAL CONTROL

- (a) The person exercising responsibility for operational control for an AOC holder shall:
 - (1) Authorise the specific flight operation;
 - (2) Ensure that only those operations authorised by the AOC operations specifications are conducted;
 - (3) Ensure that an airworthy aircraft properly equipped for the flight is available;
 - (4) Specify the conditions under which a flight may be dispatched or released (weather minimums, flight planning, aircraft loading, and fuel requirements);
 - (5) Ensure that qualified personnel and adequate facilities are available to support and conduct the flight;
 - (6) Ensure that crew members are in compliance with the flight and duty time requirements when departing on a flight;
 - (7) Provide the PIC and other personnel who perform operational control functions with access to the necessary information for the safe conduct of a flight (such as weather, NOTAMS and aerodrome analysis);
 - (8) Ensure that proper flight planning and preparation is made;
 - (9) Ensure that flight locating and flight following procedures are followed;
 - (10) Ensure that each flight has complied with the conditions specified for release before it is allowed to depart;
 - (11) Ensure that when the conditions specified for a release cannot be met, the flight is either cancelled, delayed, re-routed, or diverted, and
 - (12) For all flights, ensure the monitoring of the progress of the flight and the provision of information that may be necessary to safety.

Note: See also ICAO Doc 9376, Preparation of an Operations Manual, Chapters 7 and 8.

8.13.1.4 OPERATIONAL CONTROL DUTIES

- (a) For all flights, the qualified person performing the duties of a FOO shall be to:
 - (1) Assist the PIC in flight preparation and provide the relevant information required;
 - (2) Assist the PIC in preparing the operational and ATC flight plans;
 - (3) Sign the dispatch copy of the flight release;
 - (4) Furnish the PIC while in flight, by appropriate means, with information which may be necessary for the safe conduct of the flight; and
 - (5) In the event of an emergency situation which endangers the safety of the aeroplane or persons becomes known first to the FOO/flight dispatcher, action by that persons shall be in accordance with such procedures as outlined in the AOC holder's OM.. Where necessary, immediately notify the appropriate authorities on the nature of the situation, and if required, a request for assistance.
 - (6) Notify the appropriate ATS unit when the position of the aeroplane cannot be determined by an aircraft tracking capability and attempts to establish communication are unsuccessful
- (b) A qualified person performing the operational control duties shall avoid taking any action that would conflict with the procedures established by:
 - (1) ATC;
 - (2) The meteorological service;
 - (3) The communications service; or
 - (4) AOC holder.

Note: See also ICAO Doc 9376, Preparation of an Operations Manual, Chapters 7 and 8.

8.13.1.5 CONTENTS OF A FLIGHT RELEASE/OPERATIONAL FLIGHT PLAN

- (a) The dispatch or flight release/operational flight plan shall contain or have attached at least the following information concerning each flight:
 - (1) Company or organisation 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 flight crew member, cabin crew member, and PIC.
 - (5) Departure aerodrome, destination aerodromes, alternate aerodromes, and route.
 - (6) Minimum fuel supply (in gallons or pounds).
 - (7) A statement of the type of operation (e.g., IFR, VFR).
 - (8) The latest available weather reports and forecasts for the destination aerodrome and alternate aerodromes.
 - (9) Any additional available weather information that the PIC considers necessary.
- (b) The dispatch or flight release/operational flight plan shall be signed by the PIC and, when applicable, the FOO, and a copy shall be filed with operator or a designated agent. If these

procedures are not possible, it shall be left with the aerodrome authority or on record at a suitable place at the point of departure.

Note: See also ICAO Doc 9376, Preparation of an Operations Manual, Chapters 7.

8.13.1.6 FLIGHT RELEASE—AIRCRAFT REQUIREMENTS

- (a) No person may issue a flight release for a commercial air transport operation unless the aircraft is airworthy and properly equipped for the intended flight operation.
- (b) No person may issue a flight release for a commercial air transport operation using an aircraft with inoperative instruments and equipment installed, except as specified in the MEL approved for the AOC holder for that type aircraft.
- (c) No person may issue a flight release for a commercial air transport operation using an aircraft unless a maintenance release has been issued for that aircraft.
- (d) No person may issue a flight release for a commercial air transport operation unless the requirements of 8.13.1.5 of this part for operational flight planning have been met.
- (e) Completed flight preparation forms shall be kept by an operator for a period of 3 months.

8.13.1.7 FLIGHT RELEASE—FACILITIES AND NOTICES TO AIRMEN

- (a) No person may release an aircraft over any route or route segment unless there are adequate communications and navigational facilities in satisfactory operating condition as necessary to conduct the flight safely.
- (b) The FOO shall ensure that the PIC is provided all available current reports or information on aerodrome conditions and irregularities of navigation facilities that may affect the safety of the flight.
- (c) No person may issue a flight release for a commercial air transport operation unless the requirements of 8.13.1.5 of this part for operational flight planning have been complied with.
- (d) Completed flight preparation forms shall be kept by an operator for a period of 3 months.

Note: For his or her review of the operational flight plan, the PIC will be provided with all available NOTAMs with respect to the routing, facilities and aerodromes.

8.13.1.8 FLIGHT RELEASE—WEATHER REPORTS AND FORECASTS

- (a) No person may release a flight unless he or she is thoroughly familiar with reported and forecast weather conditions on the route to be flown.
- (b) No person may release a flight unless he or she has communicated all information and reservations they may have regarding weather reports and forecasts to the PIC.
- (c) No person may issue a flight release for a commercial air transport operation unless the requirements of 8.13.1.5 of this part for operational flight planning have been complied with.
- (d) Completed flight preparation forms shall be kept by an operator for a period of 3 months.

8.13.1.9 FLIGHT RELEASE – IN ICING CONDITIONS

- (a) No person may release an aircraft, when in their opinion or that of the PIC, the icing conditions that may be expected or are met exceed that for which the aircraft is certified and has sufficient operational de-icing or anti-icing equipment.
- (b) No person may release an aircraft any time conditions are such that frost, ice or snow may reasonably be expected to adhere to the aircraft, unless there is available to the PIC at the aerodrome of departure adequate facilities and equipment to accomplish the procedures approved for the AOC holder by the Authority for ground de-icing and anti-icing.
- (c) No person may issue a flight release for a commercial air transport operation unless the of 8.13.1.5 of this part for operational flight planning have been complied with.
- (d) Completed flight preparation forms shall be kept by an operator for a period of 3 months.

Note: ICAO Doc 9640, Manual of Aircraft Ground De-Icing/Anti-Icing, provides additional guidance.

8.13.1.10 FLIGHT RELEASE — UNDER VISUAL FLIGHT RULES OR INSTRUMENT FLIGHT RULES

- (a) No person may release a flight under VFR or IFR unless the weather reports and forecasts indicated that the flight can reasonably be expected to be completed as specified in the release.

8.13.1.11 FLIGHT RELEASE—MINIMUM FUEL SUPPLY

- (a) No person may issue a flight release for a commercial air transport operation unless the fuel supply specified in the release is equivalent to or greater than the minimum flight planning requirements of this Part, including anticipated contingencies.
- (b) No person may issue a flight release for a commercial air transport operation unless the requirements of 8.13.1.5 of this part for operational flight planning have been met.
- (c) Completed flight preparation forms shall be kept by an operator for a period of 3 months.

8.13.1.12 FLIGHT RELEASE—AIRCRAFT LOADING AND PERFORMANCE

- (a) No person may issue a flight release unless he or she is familiar with the anticipated loading of the aircraft and is reasonably certain that the proposed operation will not exceed the:
 - (1) CG limits;
 - (2) Aircraft operating limitations; and
 - (3) Minimum performance requirements.
- (b) No person may issue a flight release for a commercial air transport operation unless any load carried is properly distributed and safely secured.
- (c) No person may issue a flight release for a commercial air transport operation unless the requirements of 8.13.1.5 of this part for operational flight planning have been met.
- (d) Completed flight preparation forms shall be kept by an operator for a period of 3 months.

8.13.1.13 FLIGHT RELEASE—AMENDMENT OR RE-RELEASE EN-ROUTE

- (a) Each person who amends a flight release while the flight is en-route shall record that amendment.
- (b) No person may amend the original flight release to change the destination or alternate aerodrome while the aircraft is en-route unless the flight preparation requirements for routing, aerodrome selection and minimum fuel supply are met at the time of amendment or re-release.
- (c) No person may allow a flight to continue to an aerodrome to which it has been released if the weather reports and forecasts indicate changes that would render that aerodrome unsuitable for the original flight release.
- (d) No person may issue a flight release for a commercial air transport operation unless the requirements of 8.13.1.5 of this part for operational flight planning have been met.
- (e) Completed flight preparation forms shall be kept by an operator for a period of 3 months.

8.13.1.14 FLIGHT RELEASE—WITH AIRBORNE WEATHER RADAR EQUIPMENT

- (a) No person may release a large aircraft carrying passengers 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.
- (b) No person may issue a flight release for a commercial air transport operation unless the requirements of 8.13.1.5 of this part for operational flight planning have been met.
- (c) Completed flight preparation forms shall be kept by an operator for a period of 3 months.

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CURAÇAO CIVIL AVIATION REGULATIONS

PART 8—IMPLEMENTING STANDARDS

For ease of reference, the number assigned to each implementing standard corresponds to its associated regulation. For example, IS: 8.2.1.5 would reflect a standard required in Subsection 8.2.1.5.

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PART 8 IMPLEMENTING STANDARDS

IS 8.2.1.8(A) DOCUMENTS TO BE CARRIED ON BOARD AIRCRAFT – ALL OPERATIONS

The agreement summary of an Article 83 bis agreement shall be accessible to a civil aviation safety inspector to determine which functions and duties are transferred under the agreement by the State of Registry to the State of the Operator, when conducting surveillance activities such as ramp checks.

The ARTICLE 83 bis agreement summary form is obtainable at the Authority.

IS 8.5.1.1 GENERAL AVIATION SPECIFIC APPROVALS

Specific approvals shall have a standardised format that contains the minimum information required in the specific approval template.

The General Aviation Specific Approvals agreement summary form is obtainable at the Authority

Note: When the operations to be conducted require a specific approval, a copy of the document(s) shall be carried on board.

IS: 8.7.2.2(B) GENERAL – ROTORCRAFT CLASS 1, 2, AND 3 CODE OF PERFORMANCE

- (a) The following guidance material is the basis of the code of helicopter performance referenced in 8.7.2.2 of this part.
- (b) DEFINITIONS:
 - (1) CATEGORY A. With respect to helicopters, means a multi-engine helicopter designed with engine and system isolation features and capable of operations using take-off and landing data scheduled under a critical engine failure concept that assures adequate designated surface area and adequate performance capability for continued safe flight or safe rejected take-off.
 - (2) CATEGORY B. With respect to helicopters, means a single engine or multi-engine helicopter that does not meet Category A standards. Category B helicopters have no guaranteed capability to continue safe flight in the event of an engine failure, and a forced landing is assumed.
- (c) GENERAL GUIDANCE:

- (1) Helicopters operating in performance Classes 1 and 2 shall be certificated in Category A.
- (2) Helicopters operating in performance Class 3 shall be certificated in either Category A or Category B (or equivalent).
- (3) Except as permitted by the appropriate Authority:
 - (i) Take-off or landing from/to heliports in a congested hostile environment shall only be conducted in performance Class 1.
 - (ii) Operations in performance Class 2 shall only be conducted with a safe forced landing capability during take-off and landing.
 - (iii) Operations in performance Class 3 shall only be conducted in a non-hostile environment.
- (4) The Authority may grant a waiver from the provisions of paragraphs (3)(i), (ii), and (iii) of this IS upon receiving a commercial air transport operator's application for waiver and undertaking a risk assessment of the operational conditions proposed, including:
 - (i) The type of operation and the circumstances of the flight;
 - (ii) The area/terrain over which the flight is being conducted;
 - (iii) The probability of a critical engine failure and the consequence of such an event;
 - (iv) The procedures to maintain the reliability of the engine (s);
 - (v) The training and operational procedures to mitigate the consequences of the critical engine failure;
 - (vi) Helicopter equipment; and
 - (vii) Installation and utilisation of a usage monitoring system.

IS: 8.7.2.3 SINGLE-ENGINE AND MULTI-ENGINE AEROPLANE OPERATIONS

- (a) In addition to the requirements in outlined under Subsection 8.7.2.3, an AOC holder seeking approval from the Authority to operate single-engine turbine-powered aeroplanes at night and/or in IMC shall comply with the additional requirements of this implementing standard.
- (b) An AOC holder shall not operate single-engine, turbine-powered aeroplanes at night and/or in IMC unless the following airworthiness and operational requirements have been satisfied by the operator and approved by the Authority:
 - (1) Turbine engine reliability shall be shown to have a power loss rate of less than 1 per 100,000 engine hours.

Note: Power loss in this context is defined as any loss of power, the cause of which may be traced to faulty engine or engine component design or installation, including design or installation of the fuel ancillary or engine control systems.

- (c) To minimise the probability of in-flight engine failure, the engine shall be equipped with:
 - (1) An ignition system that activates automatically, or is capable of being operated manually for take-off and landing, and during flight, in visible moisture;

- (2) A magnetic particle detection or equivalent system that monitors the engine, accessories gearbox, and reduction gearbox, and which includes a flight deck caution indication; and
 - (3) An emergency engine power control device that permits continuing operation of the engine through a sufficient power range to safely complete the flight in the event of any reasonably probable failure of the fuel control unit.
- (d) SYSTEMS AND EQUIPMENT. Single-engine turbine-powered aeroplanes approved to operate at night and/or in IMC shall be equipped with the following systems and equipment intended to ensure continued safe flight and to assist in achieving a safe forced landing after an engine failure, under all allowable operating conditions:
- (1) Two separate electrical generating systems, each one capable of supplying all probable combinations of continuous in-flight electrical loads for instruments, equipment and systems required at night and/or in IMC;
 - (2) A radio altimeter;
 - (3) An emergency electrical supply system of sufficient capacity and endurance, following loss of all generated power, to as a minimum:
 - (i) Maintain the operation of all essential flight instruments, communication and
 - (ii) navigation systems during a descent from the maximum certificated altitude in a glide configuration to the completion of a landing;
 - (iii) Lower the flaps and landing gear, if applicable;
 - (iv) Provide power to one pitot heater, which shall serve an air speed indicator clearly visible to the pilot;
 - (v) Provide for operation of the landing light specified in paragraph (d)(10) of this IS;
 - (vi) Provide for one engine restart, if applicable; and
 - (vii) Provide for the operation of the radio altimeter;
 - (4) Two attitude indicators, powered from independent sources;
 - (5) A means to provide for at least one attempt at engine re-start;
 - (6) Airborne weather radar;
 - (7) A certified RNAV system capable of being programmed with the positions of aerodromes and safe forced landing areas, and providing instantly available track and distance information to those locations;
 - (8) For passenger operations, passenger seats and mounts that meet dynamically-tested performance standards and which are fitted with a shoulder harness or a safety belt with a diagonal shoulder strap for each passenger seat;
 - (9) In pressurised aeroplanes, sufficient supplemental oxygen for all occupants for descent following engine failure at the maximum glide performance from the maximum certificated altitude to an altitude at which supplemental oxygen is no longer required;
 - (10) A landing light that is independent of the landing gear and is capable of adequately illuminating the touchdown area in a night forced landing; and
 - (11) An engine fire warning system.

- (e) MINIMUM EQUIPMENT LIST. An AOC holder shall develop an MEL approved by the Authority that is appropriate to the type of single-engine turbine-powered aeroplane operated specifying the operating equipment required for night and/or IMC operations, and for day/VMC operations.
- (f) AIRCRAFT FLIGHT MANUAL INFORMATION. The Aircraft Flight Manual shall include limitations, procedures, approval status and other information relevant to operations by single-engine turbine-powered aeroplanes at night and/or in IMC.
- (g) EVENT REPORTING. An AOC holder operating turbine-powered aeroplanes at night and/or in IMC shall report all significant failures, malfunctions or defects to the Authority who in turn will notify the State of Design.
- (h) OPERATOR PLANNING. Each AOC holder operating single-engine turbine-powered aeroplanes at night and/or in IMC shall take account of all relevant information in the assessment of intended routes or areas of operations, including the following:
 - (1) The nature of the terrain to be overflown, including the potential for carrying out a safe forced landing in the event of an engine failure or major malfunction;
 - (2) Weather information, including seasonal and other adverse meteorological influences that may affect the flight; and
 - (3) Other criteria and limitations as specified by the Authority.
- (i) Each AOC holder shall identify aerodromes or safe forced landing areas available for use in the event of engine failure and the position of these shall be programmed into the RNAV system.

Note 1: A 'safe' forced landing in this context means a landing in an area in which it can reasonably be expected that it will not lead to serious injury or loss of life, even though the aeroplane may incur extensive damage.

Note 2: Operation over routes and in weather conditions that permit a safe forced landing in the event of an engine failure, as specified in paragraph 8.8.1.31(a) of this part is not required for aeroplanes approved in accordance with paragraph 8.8.1.31(b)(1) of this part. The availability of forced landing areas at all points along a route is not specified for these aeroplanes because of the very high engine reliability, additional systems and operational equipment, procedures, and training requirements specified in IS 8.7.2.3.

- (j) FLIGHT CREW EXPERIENCE, TRAINING AND CHECKING.
 - (1) No person may serve as, and no AOC holder shall use a flight crew member in single-engine turbine-powered aeroplanes engaged in commercial air transport unless he or she has completed the appropriate flight crew member training as specified in this Part and approved by the Authority.
 - (2) The AOC holder's approved flight crew training and checking shall be appropriate to night and/or IMC operations by single engine turbine-powered aeroplanes, covering normal, abnormal and emergency procedures and, in particular, engine failure, including descent to a forced landing in night and/or in IMC conditions.
- (k) ROUTE LIMITATIONS OVER WATER.
 - (1) An AOC holder shall not conduct over water operations using single-engine turbine-powered aeroplanes operating at night and/or in IMC except in areas of operation or over specific routes identified in the AOC holder's operations specifications.
 - (2) No AOC holder may conduct over water operations using single-engine turbine-powered aeroplanes operating at night and/or in IMC except in accordance with procedures approved by the Authority in the AOC holder's OM for over water operations covering flight beyond

gliding distance from an area suitable for a safe forced landing/ditching having regard to the characteristics of the aeroplane, seasonal weather influences, including likely sea state and temperature, and the availability of search and rescue services.

- (I) OPERATOR CERTIFICATION OR VALIDATION.
 - (1) An AOC holder applying for operations specifications granting authorisation to conduct single-engine turbine-powered aeroplane operations at night and/or in IMC shall demonstrate to the Authority, consistent with Part 9 of these regulations, the ability to conduct operations by single-engine turbine-powered aeroplanes at night and/or in IMC through a certification and approval process specified by the Authority.

IS: 8.8.1.7 INSTRUMENT APPROACH OPERATING MINIMA

- (a) Each operator establishing aerodrome-operating minima shall have its method for determining such minima approved by the Authority.
- (b) Each operator's method for determining aerodrome-operating minima shall accurately account for:
 - (1) The type, performance and handling characteristics of the aircraft;
 - (2) Any conditions or limitations stated in the flight manual;
 - (3) The composition, competence, and experience of the flight crew;
 - (4) The dimensions and characteristics of the runways selected for use;
 - (5) The adequacy and performance of the available visual and non-visual ground aids;
 - (6) Aircraft equipment used for navigation, acquisition of visual references, and/or aircraft control during the approach, landing, and missed approach;
 - (7) Obstacles in the approach and missed approach areas and the obstacle clearance altitude/height for the intended IAPs;
 - (8) The means used to determine and report meteorological conditions; and
 - (9) The obstacles in the climb out areas and the necessary clearance margins;
 - (10) The conditions prescribed in the operations specifications;
 - (11) Any minima that may be promulgated by the State of the Aerodrome; and
 - (12) The declared distances, for helicopters.

IS: 8.8.1.9 CATEGORY II AND CATEGORY III MANUAL

- (a) APPLICATION FOR APPROVAL. An applicant for approval of a CAT II or CAT III manual or an amendment to an approved CAT II or CAT III manual shall submit the proposed manual or amendment to the Authority. If the application requests an evaluation programme, it shall include the following:
 - (1) The location of the aircraft and the place where the demonstrations are to be conducted; and
 - (2) The date the demonstrations are to commence (at least 10 days after filing the application).
- (b) CONTENTS. Each CAT II or CAT III manual shall contain:

- (1) The registration mark, make and model of the aircraft to which it applies.
- (2) A maintenance programme; and
- (3) The procedures and instructions related to the recognition of DH, the use of RVR information, approach monitoring, the decision region (the region between the middle marker and the DH), the maximum permissible deviations of the basic ILS indicator within the decision region, a missed approach, the use of airborne low approach equipment, minimum altitude for the use of the autopilot, instrument and equipment failure warning systems, instrument failure, and other procedures, instructions, and limitations that may be found necessary by the Authority.

Note 1: CAT II approval is required prior to obtaining CAT III approval.

Note 2: ICAO Doc 9365, Manual of All-Weather Operations, provides additional guidance.

IS: 8.8.1.28 INTERCEPTION OF CIVIL AIRCRAFT

- (a) Curaçao shall observe the following principles regarding the interception of civil aircraft.
 - (1) Interception of civil aircraft will be undertaken only as a last resort.
 - (2) If undertaken, an interception will be limited to determining the identity of the aircraft, unless it is necessary to return the aircraft to its planned track, direct it beyond the boundaries of national airspace, guide it away from a prohibited, restricted or danger area or instruct it to effect a landing at a designated aerodrome.
 - (3) Practice interception of civil aircraft will not be undertaken.
 - (4) Navigational guidance and related information will be given to an intercepted aircraft by radiotelephony, whenever radio contact can be established.
 - (5) In the case where an intercepted civil aircraft is required to land in the territory overflown, the aerodrome designated for the landing is to be suitable for the safe landing of the aircraft type concerned.

Note: In the unanimous adoption by the 25th Session (Extraordinary) of the ICAO Assembly on 10 May 1984 of Article 3 bis to the Chicago Convention, the Contracting States have recognised that “every State must refrain from resorting to the use of weapons against civil aircraft in flight.”

- (b) Curaçao shall ensure that:
 - (1) A standard method has been established and made available to the public for the manoeuvring of aircraft intercepting a civil aircraft that is designed to avoid any hazard for the intercepted aircraft.
 - (2) Provision is made for the use of SSR or ADS-B, where available, to identify civil aircraft in areas where they may be subject to interception.
- (c) The PIC of an aircraft that is intercepted by another aircraft shall immediately:
 - (1) Follow the instructions given by the intercepting aircraft, interpreting and responding to visual signals in accordance with the specifications in paragraph (e) of this IS
 - (2) Notify, if possible, the appropriate ATS unit.
 - (3) Attempt to establish radio communication with the intercepting aircraft or with the appropriate intercept control unit, by making a general call on the emergency frequency 121.5 MHz, giving the identity of the intercepted aircraft and the nature of the flight; and if no

contact has been established and if practicable, repeating this call on the emergency frequency 243 MHz.

- (4) If equipped with an SSR transponder, select Mode A, Code 7700, unless otherwise instructed by the appropriate ATS unit.
- (5) If equipped with ADS-B or ADS-C, select the appropriate emergency functionality, if available, unless otherwise instructed by the appropriate air traffic services unit.
- (d) If any instructions received by radio from any sources conflict with those given by the intercepting aircraft by visual signals, the PIC of the intercepted aircraft shall request immediate clarification while continuing to comply with the visual instructions given by the intercepting aircraft.
- (e) If any instructions received by radio from any sources conflict with those given by the intercepting aircraft by radio, the PIC of the intercepted aircraft shall request immediate clarification while continuing to comply with the radio instructions given by the intercepting aircraft.
- (f) RADIO COMMUNICATION DURING INTERCEPTION. If radio contact is established during interception but communication in a common language is not possible, the PIC of each involved aircraft shall attempt to convey instructions, acknowledgement of instructions and essential information by using the phrases and pronunciations in Table 1 of this IS and transmitting each phrase twice:

Table 1. Phrases and Pronunciations

Phrases for use by INTERCEPTING Aircraft			Phrases for use by INTERCEPTED Aircraft		
Phrase	Pronunciation ¹	Meaning	Phrase	Pronunciation ¹	Meaning
CALL SIGN	<u>KOL</u> SA-IN	What is your call sign?	CALL SIGN (call sign) ²	<u>KOL</u> SA-IN (call sign)	My call sign is (call sign)
FOLLOW	<u>FOL</u> -LO	Follow me	WILCO	<u>VILL</u> -KO	Understood Will comply
DESCEND	DEE- <u>SEND</u>	Descend for landing	CAN NOT	<u>KANN</u> NOTT	Unable to comply
YOU LAND	<u>YOU</u> <u>LAAND</u>	Land at this aerodrome	REPEAT	REE- <u>PEET</u>	Repeat your instruction
PROCEED	PRO- <u>SEED</u>	You may proceed	AM LOST	<u>AM</u> <u>LOSST</u>	Position unknown
			MAYDAY	MAYDAY	I am in distress
			HIJACK ³	<u>HI</u> - <u>JACK</u>	I have been hijacked
			LAND (place name)	<u>LAAND</u> (place name)	I request to land at (place name)
			DESCEND	DEE- <u>SEND</u>	I require descent

Notes:

1. In the second column, syllables to be emphasised are underlined.
2. The call sign required to be given is that used in radiotelephone communications with ATS units and corresponding to the aircraft identification in the flight plan.
3. Circumstances may not always permit, nor make desirable, the use of the phrase "HIJACK."

The signals in Table 2 of this IS shall be used by the pilots of each involved aircraft in the event of interception. Signals initiated by intercepting aircraft and responses by intercepted aircraft.

Table 2. Signals Initiated by Intercepting Aircraft and Responses by Intercepted Aircraft

Series	INTERCEPTING Aircraft Signals	Meaning	INTERCEPTED Aircraft Responds	Meaning
1	<p>DAY or NIGHT – Rocking aircraft and flashing navigational lights at irregular intervals (and landing lights in the case of a helicopter) from a position slightly above and ahead of, and normally to the left of, the intercepted aircraft (or to the right if the intercepted aircraft is a helicopter) and, after acknowledgement, a slow level turn, normally to the left, (or to the right in the case of a helicopter) on the desired heading.</p> <p><i>Note 1: Meteorological conditions or terrain may require the intercepting aircraft to reverse the positions and direction of turn given above in Series 1.</i></p> <p><i>Note 2: If the intercepting aircraft is not able to keep pace with the intercepted aircraft, the latter is expected to fly a series of racetrack patterns and to rock the aircraft each time it passes the intercepted aircraft.</i></p>	You have been intercepted. Follow me.	DAY or NIGHT – Rocking aircraft, flashing navigational lights at irregular intervals, and following.	Understood, will comply.
2	DAY or NIGHT – An abrupt breakaway manoeuvre from the intercepted aircraft consisting of a climbing turn of 90 degrees or more without crossing the line of flight of the intercepted aircraft.	You may proceed.	DAY or NIGHT – Rocking the aircraft.	Understood, will comply.
3	DAY or NIGHT – Lowering landing gear (if fitted), showing steady landing lights, and overflying runway in use or, if the intercepted aircraft is a helicopter, overflying the helicopter landing area. In the case of helicopters, the intercepting helicopter makes a landing approach, coming to hover near the landing area.	Land at this aerodrome.	DAY or NIGHT – Lowering landing gear (if fitted), showing steady landing lights, and following the intercepting aircraft and, if, after overflying the runway in use or the helicopter landing area, landing is considered safe, proceeding to land.	Understood, will comply.

Table 3. Signals Initiated by Intercepted Aircraft and Responses by Intercepting Aircraft

Series	INTERCEPTED Aircraft Signales	Meaning	INTERCEPTING Aircraft Response	Meaning
4	DAY or NIGHT – Raising landing gear (if fitted) and flashing landing lights while passing over runway in use or helicopter landing area at a height exceeding 300 m (1 000 ft) but not exceeding 600 m (2 000 ft) (in the case of a helicopter, at a height exceeding 50 m (170 ft) but not exceeding 100 m (330 ft) above the aerodrome level, and continuing to circle runway in use or helicopter landing area. If unable to flash landing lights, flash any other lights available.	Aerodrome you have designated is inadequate.	DAY or NIGHT – If it is desired that the intercepted aircraft follow the intercepting aircraft to an alternate aerodrome, the intercepting aircraft raises its landing gear (if fitted) and uses the Series 1 signals prescribed for intercepting aircraft. If it is decided to release the intercepted aircraft, the intercepting aircraft uses the Series 2 signals prescribed for intercepting aircraft.	Understood, follow me. Understood, you may proceed.
5	DAY or NIGHT – Regular switching on and off of all available lights, but in such a manner as to be distinct from flashing lights.	Cannot comply.	DAY or NIGHT – Use Series 2 signals prescribed for intercepting aircraft.	Understood.
6	DAY or NIGHT – Irregular flashing of all available lights.	In distress.	DAY or NIGHT – Use Series 2 signals prescribed for intercepting aircraft.	Understood.

IS 8.8.1.33 REMOTELY PILOTED AIRCRAFT

The form for approval to operate an RPA within Curacao is obtainable at the Authority

IS: 8.8.2.11 UNIVERSAL AVIATION SIGNALS

- (a) Distress signals. The following signals, used either together or separately, mean that grave and imminent danger threatens, and immediate assistance is requested:

Note: None of the provisions in this section shall prevent the use, by an aircraft in distress, of any means at its disposal to attract attention, make known its position and obtain help.

Note 2: For full details of telecommunication transmission procedures for the distress and urgency signals, see ICAO Annex 10, Volume II, Chapter 5.

Note 3: For details of the search and rescue visual signals, see ICAO Annex 12.

- (1) A signal made by radiotelegraphy or by any other signalling method consisting of the group SOS (••• — — •••) in the Morse Code.
- (2) A signal sent by radiotelephony consisting of the spoken word MAYDAY.
- (3) Rockets or shells throwing red lights, fired one at a time at short intervals; and
- (4) A parachute flare showing a red light.

Note: Article 41 of the ITU Radio Regulations (Nos. 3268, 3270, and 3271 refer) provides information on the alarm signals for actuating radiotelegraph and radiotelephone auto-alarm systems:

- 3268 The radiotelegraph alarm signal consists of a series of 12 dashes sent in 1 minute, the duration of each dash being 4 seconds and the duration of the interval between consecutive dashes 1 second. It may be transmitted by hand, but its transmission by means of an automatic instrument is recommended.
 - 3270 The radiotelephone alarm signal consists of two substantially sinusoidal audio frequency tones transmitted alternately. One tone shall have a frequency of 2 200 Hz and the other a frequency of 1 300 Hz, the duration of each tone being 250 milliseconds.
 - 3271 The radiotelephone alarm signal, when generated by automatic means, shall be sent continuously for a period of at least 30 seconds but not exceeding 1 minute; when generated by other means, the signal shall be sent as continuously as practicable over a period of approximately 1 minute.
- (b) The following signals, used either together or separately, mean that an aircraft wishes to give notice of difficulties which compel it to land without requiring immediate assistance:
- (1) The repeated switching on and off of the landing lights; or
 - (2) The repeated switching on and off of the navigation lights in such manner as to be distinct from flashing navigation lights.
- (c) The following signals, used either together or separately, mean that an aircraft has a very urgent message to transmit concerning the safety of a ship, aircraft or other vehicle, or of some person on board or within sight:

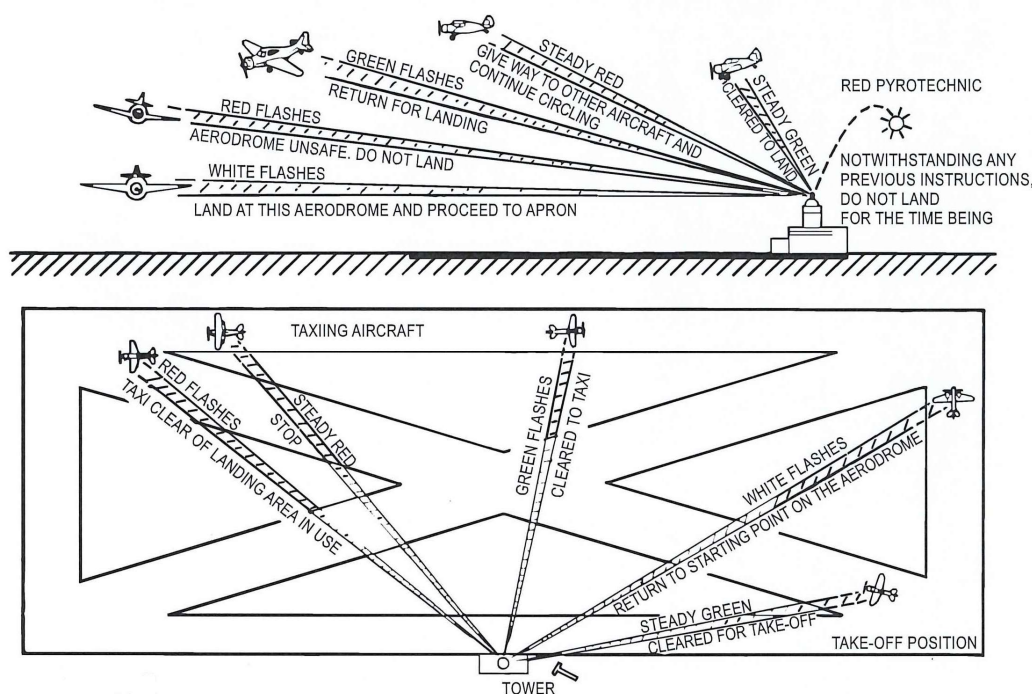
- (1) A signal made by radiotelegraphy or by any other signalling method consisting of the group XXX;
- (2) A signal sent by radiotelephony consisting of the spoken words PAN, PAN; or
- (3) An urgency message sent via data link which transmits the intent of the words PAN, PAN.
- (d) VISUAL SIGNALS USED TO WARN AN UNAUTHORISED AIRCRAFT. By day and by night, a series of projectiles discharged from the ground at intervals of 10 seconds, each showing, on bursting, red and green lights or stars will indicate to an unauthorised aircraft that it is flying in or about to enter a restricted, prohibited, or danger area, and that the aircraft is to take such remedial action as may be necessary.
- (e) SIGNALS FOR AERODROME TRAFFIC. Aerodrome controllers shall use and pilots shall obey the following light and pyrotechnic signals:

Table 4. Light and Pyrotechnic Signals

Light		From Aerodrome Control to:	
		Aircraft in Flight	Aircraft on the Ground
Directed towards aircraft concerned (See Figure 1)	Steady green	Cleared to land	Cleared for take-off
	Steady red	Give way to other aircraft and continue circling	Stop
	Series of green flashes	Return for landing*	Cleared to taxi
	Series of red flashes	Aerodrome unsafe, do not land	Taxi clear of landing area in use
	Series of white flashes	Land at this aerodrome and proceed to ramp*	Return to starting point on the aerodrome
	Red pyrotechnic	Notwithstanding any previous instructions, do not land for the time being	

* Clearances to land and to taxi will be given in due course.

Figure 1.



(f) Pilots shall acknowledge aerodrome controller signals as follows:

(1) When in flight:

(i) During the hours of daylight by rocking the aircraft's wings; and

Note: This signal should not be expected on the base and final legs of the approach.

(ii) During the hours of darkness by flashing on and off twice the aircraft's landing lights or, if not so equipped, by switching on and off twice its navigation lights.

(g) When on the ground:

(1) During the hours of daylight by moving the aircraft's ailerons or rudder; and

(2) During the hours of darkness by flashing on and off twice the aircraft's landing lights or, if not so equipped, by switching on and off twice its navigation lights.

(h) Aerodrome authorities shall use the following visual ground signals during the following situations:

(1) PROHIBITION OF LANDING. A horizontal red square panel with yellow diagonals (Figure 2) when displayed in a signal area indicates that landings are prohibited and that the prohibition is liable to be prolonged.

Figure 2.



- (2) NEED FOR SPECIAL PRECAUTIONS WHILE APPROACHING OR LANDING. A horizontal red square panel with one yellow diagonal (Figure 3) when displayed in a signal area indicates that owing to the bad state of the manoeuvring area, or for any other reason, special precautions shall be observed in approaching to land or in landing.

Figure 3.



- (3) USE OF RUNWAYS AND TAXIWAYS.

A horizontal white dumb-bell (Figure 4) when displayed in a signal area indicates that aircraft are required to land, take-off and taxi on runways and taxiways only.

Figure 4.



- (4) The same horizontal white dumb-bell as in Figure 4, but with a black bar placed perpendicular to the shaft across each circular portion of the dumb-bell (Figure 5) when displayed in a signal area indicates that aircraft are required to land and take-off on runways only, but other manoeuvres need not be confined to runways and taxiways.

Figure 5.



- (5) CLOSED RUNWAYS AND TAXIWAYS. Crosses of a single contrasting colour, yellow or white (Figure 6), displayed horizontally on runways and taxiways or parts thereof indicate an area unfit for movement of aircraft.

Figure 6.



(6) DIRECTIONS FOR LANDING OR TAKE-OFF.

A horizontal white or orange landing T (Figure 7) indicates the direction to be used by aircraft for landing and take-off, which shall be in a direction parallel to the shaft of the T towards the cross arm.

Note: When used at night, the landing T is either illuminated or outlined in white lights.

Figure 7.



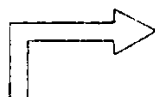
(7) A set of two digits (Figure 8) displayed vertically at or near the aerodrome control tower indicates to aircraft on the manoeuvring area the direction for take-off, expressed in units of 10 degrees to the nearest 10 degrees of the magnetic compass.

Figure 8.



(8) RIGHT-HAND TRAFFIC. When displayed in a signal area, or horizontally at the end of the runway or strip in use, a right-hand arrow of conspicuous colour (Figure 9) indicates that turns are to be made to the right before landing and after take-off.

Figure 9.



(9) AIR TRAFFIC SERVICES REPORTING OFFICE. The letter C displayed vertically in black against a yellow background (Figure 10) indicates the location of the ATS services reporting office.

Figure 10.



(10) GLIDER FLIGHTS IN OPERATION. A double white cross displayed horizontally (Figure 8.11) in the signal area indicates that the aerodrome is being used by gliders and that glider flights are being performed.

Figure 11.



- (i) The following marshalling signals shall be used from a signalman to an aircraft.

- (1) For heavier-than-air aircraft, the signalman shall be positioned forward of the left-wing tip within view of the pilot and, for helicopters, where the signalman can best be seen by the pilot.

Note 1: Note: These signals are designed for use by the signalman, with hands illuminated as necessary to facilitate observation by the pilot, and facing the aircraft in a position.

Note 2: The meaning of the relevant signals remains the same if bats, illuminated wands or torchlights are held.

Note 3: The aircraft engines are numbered, for the signalman facing the aircraft, from right to left (i.e. No. 1 engine being the port outer engine).

Note 4: Signals marked with an asterisk are designed for use to hovering helicopters.

Note 5: References to wands may also be read to refer to daylight-fluorescent table-tennis bats or gloves (daytime only).

Note 6: References to the signalman may also be read to refer to marshaller.

- (2) Prior to using the following signals, the signalman shall ascertain that the area within which an aircraft is to be guided is clear of objects which the aircraft might otherwise strike.

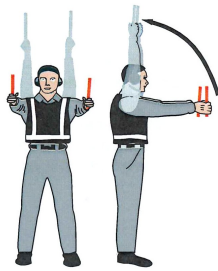
Note: The design of many aircraft is such that the path of the wing tips, engines and other extremities cannot always be monitored visually from the flight deck while the aircraft is being manoeuvred on the ground.



1. Wingwalker/guide.

Raise right hand above head level with wand pointing up; move left-hand wand pointing down toward body.

Note: This signal provides an indication by a person positioned at the aircraft wing tip to the pilot/ marshaller/ push-back operator that the aircraft movement on/off a parking position would be unobstructed.

**2. Identify gate**

Raise fully extended arms straight above head with wands pointing up.

**3. Proceed to next signalman or as directed by tower/ground control**

Point both arms upward; move and extend arms outward to sides of body and point with wands to direction of next signalman or taxi area.

**4. Straight ahead**

Bend extended arms at elbows and move wands up and down from chest height to head.

**5 a). Turn left (from pilot's point of view)**

With right arm and wand extended at a 90-degree angle to body, make "come ahead" signal with left hand. The rate of signal motion indicates to pilot the rate of aircraft turn.

**5 b). Turn right (from pilot's point of view)**

With left arm and wand extended at a 90-degree angle to body, make "come ahead" signal with right hand. The rate of signal motion indicates to pilot the rate of aircraft turn.

**6 a). Normal stop**

Fully extend arms and wands at a 90-degree angle to sides and slowly move to above head until wands cross.

**6 b). Emergency stop**

Abruptly extend arms and wands to top of head, crossing wands.

**7 a). Set brakes**

Raise hand just above shoulder height with open palm. Ensuring eye contact with flight crew, close hand into a fist. Do not move until receipt of “thumbs up” acknowledgement from flight crew.

**7 b). Release brakes**

Raise hand just above shoulder height with hand closed in a fist. Ensuring eye contact with flight crew, open palm. Do not move until receipt of “thumbs up” acknowledgement from flight crew

**8 a). Chocks inserted**

With arms and wands fully extended above head, move wands inward in a “jabbing” motion until wands touch. Ensure acknowledgement is received from flight crew.

**8 b). Chocks removed**

With arms and wands fully extended above head, move wands outward in a “jabbing” motion. Do not remove chocks until authorised by flight crew.

**9. Start engine(s)**

Raise right arm to head level with wand pointing up and start a circular motion with hand; at the same time, with left arm raised above head level, point to engine to be started.

**10. Cut engines**

Extend arm with wand forward of body at shoulder level; move hand and wand to top of left shoulder and draw wand to top of right shoulder in a slicing motion across throat.

**11. Slow down**

Move extended arms downwards in a “patting” gesture, moving wands up and down from waist to knees.

**12. Slow down engine(s) on indicated side**

With arms down and wands toward ground, wave either right or left wand up and down indicating engine(s) on left or right side respectively should be slowed down.

**13. Move back**

With arms in front of body at waist height, rotate arms in a forward motion. To stop rearward movement, use signal 6 a) or 6 b).

**14 a). Turns while backing (for tail to starboard)**

Point left arm with wand down and bring right arm from overhead vertical position to horizontal forward position, repeating right-arm movement.

**14 b). Turns while backing (for tail to port)**

Point right arm with wand down and bring left arm from overhead vertical position to horizontal forward position, repeating left-arm movement.

**15. Affirmative/all clear**

Raise right arm to head level with wand pointing up or display hand with “thumbs up”; left arm remains at side by knee.

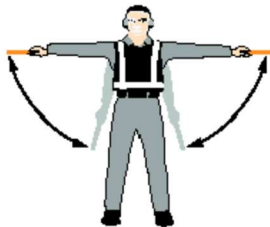
Note: This signal is also used as a technical/servicing communication signal.

***16. Hover**

Fully extend arms and wands at a 90-degree angle to sides.

***17. Move upward**

Fully extend arms and wands at a 90-degree angle to sides and, with palms turned up, move hands upward. Speed of movement indicates rate of ascent.

***18. Move downward**

Fully extend arms and wands at a 90-degree angle to sides and, with palms turned down, move hands downward. Speed of movement indicates rate of descent.

***19 a). Move horizontally left (from pilot's point of view)**

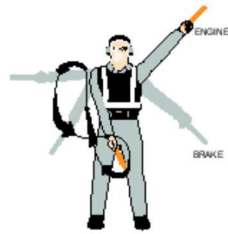
Extend arm horizontally at a 90-degree angle to right side of body. Move other arm in same direction in a sweeping motion.

***19 b). Move horizontally right (from pilot's point of view)**

Extend arm horizontally at a 90-degree angle to left side of body. Move other arm in same direction in a sweeping motion.

***20. Land**

Cross arms with wands downwards and in front of body.

**21. Fire**

Move right-hand wand in a “fanning” motion from shoulder to knee, while at the same time pointing with left-hand wand to area of fire.

**22. Hold position/stand by**

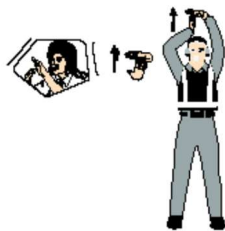
Fully extend arms and wands downwards at a 45-degree angle to sides. Hold position until aircraft is clear for next manoeuvre.

**23. Dispatch aircraft**

Perform a standard salute with right hand and/or wand to dispatch the aircraft. Maintain eye contact with flight crew until aircraft has begun to taxi.

**24. Do not touch controls (technical/servicing communication signal)**

Extend right arm fully above head and close fist or hold wand in horizontal position; left arm remains at side by knee.

**25. Connect ground power (technical/servicing communication signal)**

Hold arms fully extended above head; open left hand horizontally and move finger tips of right hand into and touch open palm of left hand (forming a “T”). At night, illuminated wands can also be used to form the “T” above head.



26. Disconnect power (technical/servicing communication signal)

Hold arms fully extended above head with finger tips of right hand touching open horizontal palm of left hand (forming a “T”); then move right hand away from the left. Do not disconnect power until authorised by flight crew. At night, illuminated wands can also be used to form the “T” above head.



27. Negative (technical/servicing communication signal)

Hold right arm straight out at 90 degrees from shoulder and point wand down to ground or display hand with “thumbs down”; left hand remains at side by knee.



28. Establish communication via interphone (technical/servicing communication signal)

Extend both arms at 90 degrees from body and move hands to cup both ears.



29. Open/close stairs (technical/servicing communication signal)

With right arm at side and left arm raised above head at a 45-degree angle, move right arm in a sweeping motion towards top of left shoulder.

Note: This signal is intended mainly for aircraft with the set of integral stairs at the front.

(j) SIGNALS FROM THE PILOT OF AN AIRCRAFT TO A SIGNALMAN.

(1) The PIC or CP shall use the following signals when communicating with a signalman:

Note 1: These signals are designed for use by a pilot on the flight deck with hands plainly visible to the signalman, and illuminated as necessary to facilitate observation by the signalman.

Note 2: The aircraft engines are numbered in relation to the signalman facing the aircraft, from right to (e.g., No. 1 engine being the port outer engine).

- (i) **BRAKES ENGAGED:** Raise arm and hand, with fingers extended, horizontally in front of face, then clench fist.
- (ii) **BRAKES RELEASED.** Raise arm, with fist clenched, horizontally in front of face, then extend fingers.

Note: The moment the fist is clenched or the fingers are extended indicates, respectively, the moment of brake engagement or release.

- (iii) INSERT CHOCKS: Arms extended, palms outward, move hands inward to cross in front of face.
- (iv) REMOVE CHOCKS: Hands crossed in front of face, palms outward, move arms outward.
- (v) READY TO START ENGINE(S). Raise the appropriate number of fingers on one hand indicating the number of the engine to be started.

IS 8.8.3.4 TABLES OF CRUISING LEVELS

- (a) The cruising levels at which a flight or a portion of a flight is to be conducted shall be in terms of:
 - (1) FLs, for flights at or above the lowest usable FL or, where applicable, above the transition altitude; and
 - (2) Altitude, for flights below the lowest usable FL or, where applicable, at or below the transition altitude.
- (b) The PIC shall observe the following cruising levels in areas where, on the basis of Regional Air Navigation Agreements and in accordance with conditions specified therein, a VSM of 300 m (1,000 ft) is applied between FL 290 and FL 410 inclusive:*

TRACK**											
From 000 Degrees to 179 Degrees***						From 180 Degrees to 359 Degrees***					
IFR Flights			VFR Flights			IFR Flights			VFR Flights		
FL	Level Metres	Feet	FL	Level Metres	Feet	FL	Level Metres	Feet	FL	Level Metres	Feet
010	300	1000	—	—	—	020	600	2000	—	—	—
030	900	3000	035	1050	3500	040	1200	4000	045	1350	4500
050	1500	5000	055	1700	5500	060	1850	6000	065	2000	6500
070	2150	7000	075	2300	7500	080	2450	8000	085	2600	8500
090	2750	9000	095	2900	9500	100	3050	10000	105	3200	10500
110	3350	11000	115	3500	11500	120	3650	12000	125	3800	12500
130	3950	13000	135	4100	13500	140	4250	14000	145	4400	14500
150	4550	15000	155	4700	15500	160	4900	16000	165	5050	16500
170	5200	17000	175	5350	17500	180	5500	18000	185	5650	18500
190	5800	19000	195	5950	19500	200	6100	20000	205	6250	20500
210	6400	21000	215	6550	21500	220	6700	22000	225	6850	22500
230	7000	23000	235	7150	23500	240	7300	24000	245	7450	24500
250	7600	25000	255	7750	25500	260	7900	26000	265	8100	26500
270	8250	27000	275	8400	27500	280	8550	28000	285	8700	28500
290	8850	29000				300	9150	30000			
310	9450	31000				320	9750	32000			
330	10050	33000				340	10350	34000			
350	10650	35000				360	10950	36000			
370	11300	37000				380	11600	38000			
390	11 900	39 000				400	12200	40000			
410	12500	41000				430	13100	43000			
450	13700	45000				470	14350	47000			

490	14950	49000		510	15550	51000
etc.	etc.	etc.		etc.	etc.	etc.
<p>* Except when, on the basis of Regional Air Navigation Agreements, a modified table of cruising levels based on a nominal VSM of 300 m (1,000 ft) is prescribed for use, under specified conditions, by aircraft operating above FL 410 within designated portions of the airspace.</p> <p>** Magnetic track, or in polar areas at latitudes higher than 70 degrees and within such extensions to those areas as may be prescribed by the appropriate ATS authorities, grid tracks as determined by a network of lines parallel to the Greenwich Meridian superimposed on a polar stereographic chart in which the direction towards the North Pole is employed as the Grid North.</p> <p>*** Except where, on the basis of Regional Air Navigation Agreements, from 090 to 269 degrees and from 270 to 089 degrees is prescribed to accommodate predominant traffic directions and appropriate transition procedures to be associated therewith are specified.</p>						

The PIC shall observe the following cruising levels in other areas not specified in paragraph (a) of this IS.

TRACK*											
From 000 Degrees to 179 Degrees***						From 180 Degrees to 359 Degrees***					
IFR Flights			VFR Flights			IFR Flights			VFR Flights		
FL	Level Metres	Feet	FL	Level Metres	Feet	FL	Level Metres	Feet	FL	Level Metres	Feet
010	300	1000	—	—	—	020	600	2000	—	—	—
030	900	3000	035	1050	3500	040	1200	4000	045	1350	4500
050	1500	5000	055	1700	5500	060	1850	6000	065	2000	6500
070	2150	7000	075	2300	7500	050	2450	8000	085	2600	8500
090	2750	9000	095	2900	9500	100	3050	10000	105	3200	10500
110	3350	11000	115	3500	11500	120	3650	12000	125	3800	12500
130	3950	13000	135	4100	13500	140	4250	14000	145	4400	14500
150	4550	15000	155	4700	15500	160	4900	16000	165	5050	16500
170	5200	17000	175	5300	17500	180	5500	18000	185	5650	18500
190	5800	19000	195	950	19500	200	6100	20000	205	6250	20500
210	6400	21000	215	6550	21500	220	6700	22000	225	6850	22500
230	7000	23000	235	7150	23500	240	7300	24000	245	7450	24500
250	7600	25000	255	7750	25500	260	7900	26000	265	8100	26500
270	8250	27000	275	8100	27500	280	8550	28000	285	8700	28500
290	8850	29000	300	9150	30000	310	9450	31000	320	9750	32000
330	10050	33000	340	10350	34000	350	10650	35000	360	10950	36000
370	11300	37000	380	11600	38000	390	11900	39000	400	12200	40000
410	12500	41000	420	12500	42000	430	13100	43000	440	13400	44000
450	13700	45000	460	14000	46000	470	14350	47000	480	14650	48000
490	14950	49000	500	15250	50000	510	15550	51000	520	15850	52000
etc.	etc.	etc.	etc.	etc.	etc.	etc.	etc.	etc.	etc.	etc.	etc.
<p>*Magnetic track, or in polar areas at latitudes higher than 70 degrees and within such extensions to those areas as may be prescribed by the appropriate ATS authorities, grid tracks as determined by a network of lines parallel to the Greenwich Meridian superimposed on a polar stereographic chart in which the direction towards the North Pole is employed as the Grid North.</p> <p>**Except where, on the basis of Regional Air Navigation Agreements, from 090 to 269 degrees and from 270 to 089 degrees is prescribed to accommodate predominant traffic directions and appropriate transition procedures to be associated therewith are specified.</p>											

Note 1: ICAO Doc 9574, Manual on the Implementation of a 300 m (1 000 ft) Vertical Separation Minimum Between FL 290 and FL 410 Inclusive, contains guidance material relating to vertical separation.

Note 2: ICAO Doc 8168, Procedures for Air Navigation Services – Aircraft Operations (PANS-OPS), contains guidance for the system of FLs.

IS 8.10.1.9 COMPANY PROCEDURES INDOCTRINATION

- (a) Each AOC holder shall ensure that all operations personnel are provided company indoctrination training that covers the following areas:
- (1) AOC holder's organisation, scope of operation, and administrative practices as applicable to their assignments and duties.
 - (2) Appropriate provisions of these regulations and other applicable regulations and guidance materials.

- (3) Contents of the AOC holder's certificate and operations specifications (not required for cabin crew).
- (4) AOC holder policies and procedures.
- (5) Crew member and FOO duties and responsibilities.
- (6) AOC holder testing programme for alcohol and narcotic psychoactive substances.
- (7) Applicable crew member manuals.
- (8) Appropriate portions of the AOC holder's OM

IS 8.10.1.10 INITIAL OR RECURRENT DANGEROUS GOODS GROUND TRAINING REQUIREMENTS

The following categories of individuals shall be trained in dangerous goods.

Category Number	Employee description
1	Shippers and persons understanding the responsibilities of shippers
2	Packers
3	Personnel of freight forwarders involved in processing dangerous goods
4	Personnel of freight forwarders involved in processing cargo or mail (other than dangerous goods)
5	Personnel of freight forwarders involved in the handling, storage and loading of cargo or mail
6	Operator's and ground handling agent's personnel accepting dangerous goods
7	Operator's and ground handling agent's personnel accepting cargo or mail (other than dangerous goods)
8	Operator's and ground handling agent's personnel involved in the handling, storage and loading of cargo or mail and baggage
9	Passenger handling personnel
10	Flight crew members, loadmasters, load planners and FOOs/flight dispatchers
11	Crew members (other than flight crew members)
12	Security personnel who are involved with the screening of passengers and crew and their baggage and cargo or mail, e.g. security screeners, their supervisors and personnel involved in implementing security procedures
13	Operator's and ground handling agent's personnel accepting cargo or mail (other than dangerous goods)
14	Operator's and ground handling agent's personnel involved in the handling, storage and loading of cargo or mail (other than dangerous goods) and baggage
15	Passenger handling personnel
16	Flight crew members, loadmasters, load planners and FOOs/flight dispatchers
17	Crew members (other than flight crew members)

Training courses for entities shipping dangerous goods shall contain the following:

	Shippers and Packers		Freight Forwarders			Operators and Ground Handling Agents						Security Personnel
	Categories of Personnel											
Aspects of transport of dangerous goods by air with which they shall be familiar, as a minimum	1	2	3	4	5	6	7	8	9	10	11	12
General philosophy	X	X	X	X	X	X	X	X	X	X	X	X
Limitations	X		X	X	X	X	X	X	X	X	X	X
General requirements for shippers	X		X			X						
Classification	X	X	X			X						X
List of dangerous goods	X	X	X			X				X		
Packing requirements	X	X	X			X						
Labelling and marking	X	X	X	X	X	X	X	X	X	X	X	X
Dangerous goods transport document and other relevant documentation	X		X	X		X	X					
Acceptance procedures						X						
Recognition of undeclared dangerous goods	X	X	X	X	X	X	X	X	X	X	X	X
Storage and loading procedure					X	X		X		X		
Pilots' notification						X		X		X		
Provisions for passengers and crew	X	X	X	X	X	X	X	X	X	X	X	X
Emergency procedures	X	X	X	X	X	X	X	X	X	X	X	X

Training courses for operators not carrying dangerous goods as cargo or mail shall contain the following:

Contents	Categories of Personnel				
	13	14	15	16	17
General philosophy	X	X	X	X	X
Limitations	X	X	X	X	X
Labelling and marking					
Dangerous goods transport document and other relevant documentation	X				
Recognition of undeclared dangerous goods	X	X	X	X	X
Provisions for passengers and crew	X	X	X	X	X
Emergency procedures	X	X	X	X	X

Note 1: Depending on the responsibilities of the person, the aspects of training to be covered may vary from those shown in the tables above. For example, with respect to classification, personnel involved in implementing security procedures (e.g. screeners and their supervisors) need only be trained in the general properties of dangerous goods.

Note 2: The categories of personnel identified in the tables above are not all encompassing. Personnel employed by or interacting with the aviation industry in areas such as passenger and cargo reservation centres, and engineering and maintenance, except when acting in a capacity identified in the tables above, shall be provided with dangerous goods training in accordance with 8.10.1.10 of this part.

Note 3: The requirements for training the postal worker can be found in the Technical Instructions.

IS 8.10.1.12 INITIAL CREW RESOURCE MANAGEMENT TRAINING

- (a) Each AOC holder shall ensure that the FOOs and all aircraft crew members have CRM training (inclusive of human factors) as part of their initial and recurrent training requirements.
 - (1) A CRM training programme shall include:
 - (i) An initial indoctrination/awareness segment;
 - (ii) A method to provide recurrent practice and feedback; and
 - (iii) A method of providing continuing reinforcement.
 - (2) Curriculum topics to be contained in an initial CRM training course include:
 - (i) Communications processes and decision behaviour
 - (ii) Internal and external influences on interpersonal communications.
 - (iii) Barriers to communication.
 - (iv) Listening skills.
 - (v) Decision-making skills.
 - (vi) Effective briefings.
 - (vii) Developing open communications.
 - (viii) Inquiry, advocacy, and assertion training.
 - (ix) Crew self-critique.
 - (x) Conflict resolution.
 - (xi) Team building and maintenance.
 - (xii) Leadership and fellowship training.
 - (xiii) Interpersonal relationships.
 - (xiv) Workload management.
 - (xv) Situational awareness.
 - (xvi) How to prepare, plan and monitor task completions.
 - (xvii) Workload distribution.
 - (xviii) Distraction avoidance.
 - (xix) Individual factors.
 - (xx) Stress reduction

IS 8.10.1.13 INITIAL EMERGENCY EQUIPMENT DRILLS

- (a) Each aircraft crew member shall accomplish emergency training during the specified training periods, using those items of installed emergency equipment for each type of aircraft in which he or she is to serve.
- (b) During initial training, each aircraft crew member shall perform the following one-time emergency drills:

- (1) PROTECTIVE BREATHING EQUIPMENT/FIREFIGHTING DRILL.
 - (i) Locate source of fire or smoke (actual or simulated fire).
 - (ii) Implement procedures for effective crew co-ordination and communication, including notification of flight crew members about fire situation.
 - (iii) Don and activate installed PBE or approved PBE simulation device.
 - (iv) Manoeuvre in limited space with reduced visibility.
 - (v) Effectively use the aircraft's communication system.
 - (vi) Identify class of fire.
 - (vii) Select the appropriate extinguisher.
 - (viii) Properly remove extinguisher from securing device.
 - (ix) Prepare, operate and discharge extinguisher properly.
 - (x) Utilise correct firefighting techniques for type of fire.
- (2) EMERGENCY EVACUATION DRILL.
 - (i) Recognise and evaluate an emergency.
 - (ii) Assume appropriate protective position.
 - (iii) Command passengers to assume protective position.
 - (iv) Implement crew co-ordination procedures.
 - (v) Ensure activation of emergency lights.
 - (vi) Assess aircraft conditions.
 - (vii) Initiate evacuation (dependent on signal or decision).
 - (viii) Command passengers to release seatbelts and evacuate.
 - (ix) Assess exit and redirect, if necessary; to open exit, including deploying slides and commanding helpers to assist.
 - (x) Command passengers to evacuate at exit and run away from aircraft.
 - (xi) Assist special need passengers, such as handicapped, elderly, and persons in a state of panic.
 - (xii) Actually exit aircraft or training device using at least one of the installed emergency evacuation slides.

Note: The crew member may either observe the aeroplane 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.

- (c) Each aircraft crew member shall accomplish additional emergency drills during initial and recurrent training, including actual performance of the following emergency drills:
 - (1) EMERGENCY EXIT DRILL.
 - (i) Correctly pre-flight each type of emergency exit and evacuation slide or slide raft (if part of cabin crew member's assigned duties).
 - (ii) Disarm and open each type of door exit in normal mode.

- (iii) Close each type of door exit in normal mode.
 - (iv) Arm each type of door exit in emergency mode.
 - (v) Open each type of door exit in emergency mode.
 - (vi) Use manual slide inflation system to accomplish or ensure slide or slide raft inflation.
 - (vii) Open each type of window exit.
 - (viii) Remove escape rope and position for use.
- (2) HAND FIRE EXTINGUISHER DRILL.
- (i) Pre-flight each type of hand fire extinguisher.
 - (ii) Locate source of fire or smoke and identify class of fire.
 - (iii) Select appropriate extinguisher and remove from securing device.
 - (iv) Prepare extinguisher for use.
 - (v) Actually operate and discharge each type of installed hand fire extinguisher.

Note 1: Fighting an actual or a simulated fire is not necessary during this drill.

Note 2: The discharge of Halon extinguishing agents during firefighting drills is not appropriate, unless a training facility is used that is specifically designed to prevent harm to the environment from the discharged Halon. When such facilities are not used, other fire extinguishing agents that are not damaging to the environment may be used during the drills.

- (vi) Utilise correct firefighting techniques for type of fire.
 - (vii) Implement procedures for effective crew co-ordination and communication, including notification of flight crew members about the type of fire situation.
- (3) EMERGENCY OXYGEN SYSTEM DRILL.
- (i) Pre-flight and operation of portable oxygen devices.
 - (ii) Actually operate portable oxygen bottles, including masks and tubing.
 - (iii) Verbally demonstrate operation of chemical oxygen generators or installed oxygen supply system.
 - (iv) Prepare for use and operate oxygen device properly, including donning and activation.
 - (v) Administer oxygen to self, passengers, and to those persons with special oxygen needs.
 - (vi) Utilise proper procedures for effective crew co-ordination and communication.
 - (vii) Manually open each type of oxygen mask compartment and deploy oxygen masks.
 - (viii) Identify compartments with extra oxygen masks.
 - (ix) Implement immediate action decompression procedures.
 - (x) Reset oxygen system, if applicable.
 - (xi) Pre-flight and operation of PBE.
 - (xii) Activate PBE.

Note: Several operators equip their aircraft with approved PBE units that have approved storage pouches fastened with two metal staples at one end. However, considerations of practicality and cost compel operators to use a less durable storage pouch that lacks the staple fasteners for training purposes. As a result, pilots and cabin crew members have been surprised that opening the pouch furnished on board requires more force than opening the training pouch. The Authority may require crew member training that includes the appropriate procedures for operating PBE. In those cases where pouches with staples are used for storage of the PBE unit, special emphasis in training may highlight the difference between the training pouch and the on-board pouch. The training pouch may be easy to open, but the approved, on-board pouch may require as much as 28 pounds of force to overcome the 2 staple fasteners.

(4) FLOTATION DEVICE DRILL.

- (i) Pre-flight flotation device, if appropriate.
- (ii) Don and inflate life vests.
- (iii) Remove and use flotation seat cushions, as installed.
- (iv) Demonstrate swimming techniques using a seat cushion, as installed.

(5) DITCHING DRILL IF APPLICABLE.

Note: During a ditching drill students shall perform the "prior to impact" and "after impact" procedures for a ditching, as appropriate to the specific operator's type of operation.

- (i) Implement crew co-ordination procedures, including briefing with the PIC to obtain pertinent ditching information and briefing cabin crew members.
- (ii) Co-ordinate time frame for cabin and passenger preparation.
- (iii) Adequately brief passengers on ditching procedures.
- (iv) Ensure cabin is prepared, including the securing of carry-on baggage, lavatories, and galleys.
- (v) Demonstrate how to properly deploy and inflate slide raft.
- (vi) Demonstrate how to properly deploy and inflate life rafts, if applicable.
- (vii) Remove, position and attach slide rafts to aircraft.
- (viii) Inflate rafts.
- (ix) Use escape ropes at overwing exits.
- (x) Command helpers to assist.
- (xi) Use slides and life vests or seat cushions as flotation devices.
- (xii) Remove appropriate emergency equipment from aircraft.
- (xiii) Board rafts properly.
- (xiv) Initiate raft management procedures (i.e., disconnecting rafts from aircraft, applying immediate first aid, rescuing persons in water, salvaging floating rations and equipment, deploying sea anchor, tying rafts together, activating or ensuring operation of emergency locator transmitter).
- (xv) Initiate basic survival procedures (i.e., removing and utilising survival kit items, repairing and maintaining raft, ensuring protection from exposure, erecting canopy, communicating location, providing continued first aid, providing sustenance).
- (xvi) Use heaving line to rescue persons in water.

- (xvii) Tie slide rafts or rafts together.
 - (xviii) Use life line on edge of slide raft or life raft as a handhold.
 - (xix) Secure survival kit items.
 - (xx) Each aircraft crew member shall accomplish additional emergency drill requirements during initial and recurrent training including observing the following emergency drills:
- (6) LIFE RAFT REMOVAL AND INFLATION DRILL IF APPLICABLE.
 - (i) Removal of a life raft from the aircraft or training device.
 - (ii) Inflation of a life raft.
 - (7) SLIDE RAFT TRANSFER DRILL.
 - (i) Transfer of each type of slide raft pack from an unusable door to a usable door.
 - (ii) Disconnect slide raft at unusable door.
 - (iii) Redirect passengers to usable slide raft.
 - (iv) Installation and deployment of slide raft at usable door.
 - (8) SLIDE AND SLIDE RAFT DEPLOYMENT, INFLATION AND DETACHMENT DRILL
 - (i) Engage slide girt bar in floor brackets, if applicable.
 - (ii) Arm slide for automatic inflation.
 - (iii) Inflate slides with and without quick-release handle (manually and automatically).
 - (iv) Disconnecting slide from the aircraft for use as a flotation device.
 - (v) Arm slide rafts for automatic inflation.
 - (vi) Disconnecting slide raft from the aircraft.
 - (9) EMERGENCY EVACUATION SLIDE DRILL.
 - (i) Open armed exit with slide or slide raft deployment and inflation.
 - (ii) Egress from aircraft via the evacuation slide and run away to a safe distance.

IS 8.10.1.14(B) INITIAL AIRCRAFT GROUND TRAINING – FLIGHT CREW

- (a) Each AOC holder shall have an initial aircraft ground training curriculum for the flight crew applicable to their duties, the type of operations conducted and aircraft flown. Instructions shall include at least the following general subjects:
 - (1) AOC holder's dispatch, flight release, or flight locating procedures.
 - (2) Principles and methods for determining mass and balance, and runway limitations for take-off.
 - (3) AOC holder's operations specifications, authorisations and limitations.
 - (4) Adverse weather recognition and avoidance, and flight procedures which shall be followed when operating in the following conditions:
 - (i) Icing.
 - (ii) Fog.

- (iii) Turbulence.
 - (iv) Heavy precipitation.
 - (v) Thunderstorms.
 - (vi) Low-level windshear and microburst.
 - (vii) Low visibility.
 - (viii) Contaminated runways.
 - (5) Normal and emergency communications procedures and navigation equipment including the AOC holder's communications procedures and ATC clearance requirements.
 - (6) Navigation procedures used in area departure, en-route, area arrival, approach and landing phases, to include visual cues prior to and during descent below DH or MDA.
 - (7) Approved CRM training.
 - (8) ATC systems, procedures, and phraseology.
 - (9) Aircraft performance characteristics during all flight regimes, including:
 - (i) The use of charts, tables, tabulated data and other related manual information.
 - (ii) Normal, abnormal, and emergency performance problems.
 - (iii) Meteorological and mass limiting performance factors (such as temperature, pressure, contaminated runways, precipitation, climb/runway limits).
 - (iv) Inoperative equipment performance limiting factors (such as MEL/CDL, inoperative antiskid).
 - (v) Special operational conditions (such as unpaved runways, high altitude aerodromes and drift down requirements).
 - (10) Normal, abnormal and emergency procedures on the aircraft type to be used.
- (b) Each AOC holder shall have an initial aircraft ground training curriculum for the flight crew applicable to their duties, the type of operations conducted and aircraft flown, including at least the following aircraft systems (if applicable):
- (1) AIRFRAME.
 - (i) Aircraft
 - (ii) Aircraft dimensions, turning radius, panel layouts, flight deck, and cabin configurations
 - (iii) Other major systems and components or appliances of the aircraft
 - (iv) Operating limitations
 - (v) Approved Aircraft Flight Manual
 - (2) POWERPLANTS.
 - (i) Basic engine description.
 - (ii) Engine thrust ratings.
 - (iii) Engine components such as accessory drives, ignition, oil, fuel control, hydraulic, and bleed air features.

- (3) ELECTRICAL.
 - (i) Sources of aircraft electrical power (such as engine driven generators, APU generator, external power, etc.).
 - (ii) Electrical buses.
 - (iii) Circuit breakers.
 - (iv) Aircraft battery.
 - (v) Standby power systems.
- (4) HYDRAULIC.
 - (i) Hydraulic reservoirs, pumps, accumulators; filters, check valves, interconnects and actuators.
 - (ii) Other hydraulically operated components.
- (5) FUEL.
 - (i) Fuel tanks (location and quantities).
 - (ii) Engine driven pumps.
 - (iii) Boost pumps.
 - (iv) System valves and crossfeeds.
 - (v) Quantity indicators.
 - (vi) Provisions for fuel jettisoning.
- (6) PNEUMATIC.
 - (i) Bleed air sources (APU, engine or external ground air).
 - (ii) Means of routing, venting and controlling bleed air via valves, ducts, chambers, and temperature and pressure limiting devices.
- (7) AIR CONDITIONING AND PRESSURISATION.
 - (i) Heaters, air conditioning packs, fans, and other environmental control devices.
 - (ii) Pressurisation system components such as outflow and negative pressure relief valves.
 - (iii) Automatic, standby, and manual pressurisation controls and annunciators.
- (8) FLIGHT CONTROLS.
 - (i) Primary controls (yaw, pitch, and roll devices).
 - (ii) Secondary controls (leading/trailing edge devices, flaps, trim, and damping mechanisms).
 - (iii) Means of actuation (direct/indirect or fly by wire).
 - (iv) Redundancy devices.
- (9) LANDING GEAR AND BRAKES.
 - (i) Landing gear extension and retraction mechanism including the operating sequence of struts, doors, and locking devices, and brake and antiskid systems, if applicable.

- (ii) Steering (nose or body steering gear).
- (iii) Bogie arrangements.
- (iv) Air/ground sensor relays.
- (v) Visual downlock indicators.
- (10) ICE AND RAIN PROTECTION.
 - (i) Rain removal systems.
 - (ii) Anti-icing and/or de-icing system(s) affecting flight controls, engines, pitot static and other probes, fluid outlets, flight deck windows, and aircraft structures.
- (11) EQUIPMENT AND FURNISHINGS.
 - (i) Exits.
 - (ii) Galleys.
 - (iii) Water and waste systems.
 - (iv) Lavatories.
 - (v) Cargo areas.
 - (vi) Crew member and passenger seats.
 - (vii) Bulkheads.
 - (viii) Seating and/or cargo configurations.
 - (ix) Non-emergency equipment and furnishings.
- (12) NAVIGATION EQUIPMENT.
 - (i) Flight directors.
 - (ii) Horizontal situation indicator.
 - (iii) Radio magnetic indicator.
 - (iv) Navigation receivers (GPS, ADF, SDF/LDA, VOR, TACAN, LORAN-C, RNAV, Marker Beacon, DME) as required for the flight operations to be conducted.
 - (v) Inertial systems (INS, IRS).
 - (vi) Functional displays.
 - (vii) Fault indications and comparator systems.
 - (viii) Aircraft transponders.
 - (ix) Radio altimeters.
 - (x) Weather radar.
 - (xi) CRT or computer-generated generated displays of aircraft position and navigation information.
- (13) AUTOFLIGHT SYSTEM.
 - (i) Autopilot.
 - (ii) Autothrottles.

- (iii) Flight director and navigation systems.
 - (iv) Automatic approach tracking.
 - (v) Autoland.
 - (vi) Automatic fuel and performance management systems.
- (14) FLIGHT INSTRUMENTS.
 - (i) Panel arrangement.
 - (ii) Flight instruments (attitude indicator, directional gyro, magnetic compass, airspeed indicator, vertical speed indicator, altimeters, standby instruments).
 - (iii) Instrument power sources, and instrument sensory sources (e.g., pitot static pressure).
- (15) DISPLAY SYSTEMS.
 - (i) Weather radar.
 - (ii) Other cathode ray tube (CRT) or computer generated displays (e.g., checklist, vertical navigation or longitudinal navigation displays)
 - (iii) Head-up displays and/or enhanced vision systems
- (16) COMMUNICATION EQUIPMENT.
 - (i) VHF/HF/SAT COM radios.
 - (ii) Audio panels.
 - (iii) Inflight interphone and passenger address systems.
 - (iv) Voice recorder.
 - (v) Air/ground passive communications systems
- (17) WARNING SYSTEMS.
 - (i) Aural, visual, and tactile warning systems (including the character and degree of urgency related to each signal).
 - (ii) Warning and caution annunciator systems (including ACAS and ground proximity and take-off configuration warning systems).
- (18) FIRE PROTECTION.
 - (i) Fire and overheat sensors, loops, modules, or other means of providing visual and/or aural indications of fire or overheat detection.
 - (ii) Procedures for the use of fire handles, automatic extinguishing systems and extinguishing agents.
 - (iii) Power sources necessary to provide protection for fire and overheat conditions in engines, APU, cargo bay/wheel well, flight deck, cabin and lavatories.
- (19) OXYGEN.
 - (i) Passenger, crew, and portable oxygen supply systems.
 - (ii) Sources of oxygen (gaseous or solid).
 - (iii) Flow and distribution networks.

- (iv) Automatic deployment systems.
 - (v) Regulators, pressure levels and gauges.
 - (vi) Servicing requirements.
- (20) LIGHTING.
 - (i) Flight deck, cabin, and external lighting systems.
 - (ii) Power sources.
 - (iii) Switch positions.
 - (iv) Spare light bulb locations.
- (21) EMERGENCY EQUIPMENT.
 - (i) Fire and oxygen bottles.
 - (ii) First aid and medical kits.
 - (iii) Life rafts and life preservers.
 - (iv) Crash axes.
 - (v) Emergency exits and lights.
 - (vi) Slides and slide rafts.
 - (vii) Escape straps or handles.
 - (viii) Hatches, ladders and movable stairs.
 - (ix) Survival suits, if applicable to the operation.
- (22) AUXILIARY POWER UNIT.
 - (i) Electric and bleed air capabilities.
 - (ii) Interfaces with electrical and pneumatic systems.
 - (iii) Inlet doors and exhaust ducts.
 - (iv) Fuel supply.
- (23) PERFORMANCE
- (24) ELECTRONIC FLIGHT BAG (if applicable).
- (c) Each AOC holder shall have an initial aircraft ground training curriculum for the flight crew applicable to their duties, the type of operations conducted and aircraft flown, including at least the following aircraft systems integration items:
 - (1) USE OF CHECKLIST.
 - (i) Safety checks.
 - (ii) Flight deck preparation (switch position and checklist flows).
 - (iii) Checklist callouts and responses.
 - (iv) Checklist sequence.
 - (2) FLIGHT PLANNING.
 - (i) Pre-flight and in-flight planning.

- (ii) Performance limitations (meteorological, mass, and MEL/CDL items).
 - (iii) Required fuel loads.
 - (iv) Weather planning (lower than standard take-off minimums or alternate requirements).
- (3) DISPLAY SYSTEMS.
 - (i) Weather radar.
 - (ii) CRT displays (e.g., checklists, vertical navigation or longitudinal navigation displays).
- (4) NAVIGATION AND COMMUNICATION SYSTEMS.
 - (i) Pre-flight and operation of applicable receivers.
 - (ii) On-board navigation systems.
 - (iii) Flight plan information input and retrieval.
- (5) AUTOFLIGHT/FLIGHT DIRECTORS.
 - (i) Autopilot.
 - (ii) Autothrust.
 - (iii) Flight director systems, including the appropriate procedures, normal and abnormal indications, and annunciators.
- (6) FLIGHT DECK FAMILIARISATION.
 - (i) Activation of aircraft system controls and switches to include normal, abnormal and emergency switches.
 - (ii) Control positions and relevant annunciators, lights, or other caution and warning systems.
- (d) Each AOC holder shall ensure that initial ground training for flight crew consists of at least the following programmed hours of instruction based on the aircraft to be used, unless a reduction is determined appropriate by the Authority:
 - (1) For pilots and FEs:
 - (i) Reciprocating-engine aeroplane—64 hours.
 - (ii) Turbopropeller-powered aeroplane—80 hours.
 - (iii) Turbo-jet aeroplane—120 hours.
 - (iv) Helicopter—64 hours.
 - (v) Powered-lift—80 hours.
 - (vi) Other aircraft—64 hours.
 - (2) For FNs:
 - (i) Reciprocating-engine aircraft—16 hours.
 - (ii) Turbopropeller-powered aircraft—32 hours.
 - (iii) Turbojet-aircraft— 32 hours

IS 8.10.1.14(C) INITIAL AIRCRAFT GROUND TRAINING – CABIN CREW MEMBERS

- (a) Each AOC holder shall have an initial ground training curriculum for cabin crew members applicable to the type of operations conducted and aircraft flown, including at least the following general subjects, if applicable:
- (1) AIRCRAFT FAMILIARISATION.
 - (i) Aircraft characteristics and description.
 - (ii) Flight deck configuration.
 - (iii) Cabin configuration.
 - (iv) Galleys.
 - (v) Lavatories.
 - (vi) Stowage areas.
 - (2) AIRCRAFT EQUIPMENT AND FURNISHINGS.
 - (i) Cabin crew member stations.
 - (ii) Cabin crew member panels.
 - (iii) Passenger seats.
 - (iv) Passenger service units and convenience panels.
 - (v) Passenger information signs.
 - (vi) Aircraft markings.
 - (vii) Aircraft placards.
 - (viii) Bassinets and bayonet tables.
 - (3) AIRCRAFT SYSTEMS.
 - (i) Air conditioning and pressurisation system.
 - (ii) Aircraft communication systems (call, interphone and passenger address).
 - (iii) Lighting and electrical systems.
 - (iv) Oxygen systems (flight crew, observer and passenger).
 - (v) Water system.
 - (vi) Entertainment and convenience systems.
 - (4) AIRCRAFT EXITS.
 - (i) General information.
 - (ii) Exits with slides or slide rafts (pre-flight and normal operation).
 - (iii) Exits without slides (pre-flight and normal operations).
 - (iv) Window exits (pre-flight).
 - (5) CREW MEMBER COMMUNICATION AND COORDINATION.
 - (i) Authority of PIC.
 - (ii) Routine communication signals and procedures.

- (iii) Crew member briefing.
 - (6) ROUTINE CREW MEMBER DUTIES AND PROCEDURES.
 - (i) Crew member general responsibilities.
 - (ii) Reporting duties and procedures for specific aircraft.
 - (iii) Pre-departure duties and procedures prior to passenger boarding.
 - (iv) Passenger boarding duties and procedures.
 - (v) Prior to movement on the surface duties and procedures.
 - (vi) Prior to take-off duties and procedures applicable to specific aircraft.
 - (vii) Inflight duties and procedures.
 - (viii) Prior to landing duties and procedures.
 - (ix) Movement on the surface and arrival duties and procedures.
 - (x) After arrival duties and procedures.
 - (xi) Intermediate stops.
 - (7) PASSENGER HANDLING RESPONSIBILITIES.
 - (i) Crew member general responsibilities.
 - (ii) Infants, children, and unaccompanied minors.
 - (iii) Passengers needing special assistance.
 - (iv) Passengers needing special accommodation.
 - (v) Carry-on stowage requirements.
 - (vi) Passenger seating requirements.
 - (vii) Smoking and no smoking requirements.
 - (8) APPROVED CREW RESOURCE MANAGEMENT TRAINING FOR CABIN CREW MEMBERS.
- (b) Each AOC holder shall have an initial ground training curriculum for cabin crew members applicable to the type of operations conducted and aircraft flown, including at least the following aircraft specific emergency subjects, if applicable:
- (1) EMERGENCY EQUIPMENT.
 - (i) Emergency communication and notification systems.
 - (ii) Aircraft exits.
 - (iii) Exits with slides or slide rafts (emergency operation).
 - (iv) Slides and slide rafts in a ditching.
 - (v) Exits without slides (emergency operation).
 - (vi) Window exits (emergency operation).
 - (vii) Exits with tailcones (emergency operation).
 - (viii) Flight deck exits (emergency operation).

- (ix) Ground evacuation and ditching equipment.
 - (x) First aid equipment.
 - (xi) Portable oxygen systems (oxygen bottles, chemical oxygen generators, PBE).
 - (xii) Fire fighting equipment.
 - (xiii) Emergency lighting systems.
 - (xiv) Universal precaution kits
 - (xv) Automated external defibrillators
 - (xvi) Survival suits, if applicable to the operation.
 - (xvii) Additional emergency equipment.
- (2) EMERGENCY ASSIGNMENTS AND PROCEDURES.
- (i) General types of emergencies specific to aircraft, including crew coordination and communication.
 - (ii) Emergency communication signals and procedures.
 - (iii) Rapid decompression.
 - (iv) Insidious decompression and cracked window and pressure seal leaks.
 - (v) Fires.
 - (vi) Ditching.
 - (vii) Ground evacuation.
 - (viii) Unwarranted evacuation (i.e., passenger initiated).
 - (ix) Illness or injury.
 - (x) Abnormal situations involving passengers or crew members.
 - (xi) Hijacking and acts of unlawful interference.
 - (xii) Bomb threat.
 - (xiii) Turbulence.
 - (xiv) Other unusual situations including an awareness of other crew member's assignments and functions as they pertain to the cabin crew member's own duties.
 - (xv) Previous aircraft accidents and incidents.
- (3) AIRCRAFT SPECIFIC EMERGENCY DRILLS.
- (i) Emergency exit drill.
 - (ii) Hand fire extinguisher drill.
 - (iii) Emergency oxygen system drill.
 - (iv) Flotation device drill.
 - (v) Ditching drill, if applicable.
 - (vi) Life raft removal and inflation drill, if applicable.
 - (vii) Slide raft pack transfer drill, if applicable.

- (viii) Slide or slide raft deployment, inflation, and detachment drill, if applicable.
 - (ix) Emergency evacuation slide drill, if applicable.
- (c) Each AOC holder shall ensure that initial ground training for a cabin crew member includes a competency check given by the appropriate supervisor or ground instructor to determine his or her ability to perform assigned duties and responsibilities.
- (d) Each AOC holder shall ensure that initial ground training for cabin crew members consists of at least the following programmed hours of instruction based on the aircraft to be used, unless a reduction is determined appropriate by the Authority:
 - (1) Reciprocating-engine aircraft - 8 hours.
 - (2) Turbopropeller-powered aircraft - 8 hours.
 - (3) Turbojet aircraft – 16 hours.
 - (4) Other aircraft, including, if applicable, helicopter and powered lift – 8 hours

IS 8.10.1.14(D) INITIAL AIRCRAFT GROUND TRAINING – FLIGHT OPERATIONS OFFICER

- (a) Each AOC holder shall provide initial aircraft ground training for FOOs that include instruction in at least the following subjects:
 - (1) GENERAL DISPATCH SUBJECTS.
 - (i) Appropriate regulations
 - (ii) AOC holder's OM
 - (iii) AOC holder's operations specifications
 - (iv) Weather reports: interpretation, available sources, actual and prognostic, seasonal variations
 - (v) Communications, to include normal and emergency
 - (vi) Meteorology, to include effects on radio reception
 - (vii) Adverse weather
 - (viii) NOTAMs
 - (ix) Navigational charts and publications
 - (x) Joint dispatcher/pilot responsibilities
 - (xi) ATC coordination procedures
 - (xii) Familiarisation with operations area, including classes of airspace and special areas of navigation
 - (xiii) Characteristics of special aerodromes
 - (2) AIRCRAFT CHARACTERISTICS:
 - (i) Aircraft specific flight preparation
 - (ii) Aircraft operating and performance characteristics
 - (iii) Navigation equipment, including peculiarities and limitations

- (iv) Instrument approach and communication equipment
- (v) Emergency equipment
- (vi) Aircraft Flight Manual or Rotorcraft Flight Manual provisions applicable to the aircraft duties
- (vii) MEL/CDL
- (viii) Applicable equipment training
- (3) OPERATIONS PROCEDURES.
 - (i) Adverse weather phenomena (wind-shear, clear air turbulence and thunderstorms)
 - (ii) Mass and balance computations and load control procedures
 - (iii) Aircraft performance computations, to include take-off mass limitations based on departure runway, arrival runway, and en-route limitations, and also engine-out limitations
 - (iv) Flight planning procedures, to include route selection, flight time, and fuel requirements analysis
 - (v) Dispatch release preparation
 - (vi) Crew briefings
 - (vii) Flight monitoring procedures
 - (viii) MEL and CDL procedures
 - (ix) Manual performance of all required procedures in case of the loss of automated capabilities
 - (x) Training in appropriate geographic areas
 - (xi) ATC and instrument procedures, ground hold and central flow control procedures
 - (xii) Radio/telephone procedures
- (4) ABNORMAL AND EMERGENCY PROCEDURES.
 - (i) Assisting flight crew in an emergency
 - (ii) Alerting of appropriate governmental, company and private agencies
- (5) CREW RESOURCES MANAGEMENT.

Note: IS 8.10.1.12 contains CRM training items.

- (6) Dangerous goods

Note: IS 8.10.1.10 contains dangerous goods training items.

- (7) Security

Note: ICAO Doc 9811, Manual on the Implementation of the Security Provisions of Annex 6, Chapter 3, provides additional guidance.

- (8) Differences training

Note: IS 8.10.1.17 contains items on differences training.

- (b) Each AOC holder shall ensure that initial ground training for FOOs includes a competency check given by an appropriately qualified dispatch supervisor or ground instructor that demonstrates the required knowledge and abilities.
- (c) Each AOC holder shall ensure that initial ground training for FOOs consists of at least the following programmed hours of instruction based on the aircraft to be used, unless a reduction is determined appropriate by the Authority:
 - (1) Reciprocating-engine aircraft – 30 hours
 - (2) Turbopropeller-powered aircraft – 40 hours
 - (3) Turbo-jet aircraft – 40 hours

IS 8.10.1.15 INITIAL AIRCRAFT FLIGHT TRAINING

- (a) Each AOC holder shall ensure that pilot initial flight training includes at least the following training and practice in procedures related to the carrying out of pilot duties and functions. This training and practice may be accomplished either in flight or in an FSTD, as appropriate to the category and class of aircraft, and as approved by the Authority.

Note: The flight training events for pilots listed in this IS are generic in nature for a type-rated aeroplane training curriculum conducted in an FSTD. All of the events may not apply to all aircraft (e.g. one engine inoperative landing for multi-engine versus single engine aeroplanes) or may differ in the requirements for a similar event (e.g. taxi for aeroplane, helicopter, and seaplane). Additional training events may need to be added, changed or deleted for aircraft based on aircraft category or class.

- (1) PREPARATION.
 - (i) Aircraft pre-flight done by external walk around, unless the use of pictorial display is authorised by the Authority.
 - (ii) Pre-taxi procedures
 - (iii) Performance limitations
 - (iv) Surface operation
 - (v) Pushback
 - (vi) Powerback taxi, if applicable to the type of operation to be conducted
 - (vii) Starting
 - (viii) Taxi
 - (ix) Pre-take-off checks
- (2) TAKE-OFF.
 - (i) Normal
 - (ii) Crosswind
 - (iii) Rejected
 - (iv) Power failure after V1
 - (v) Lower than standard minimum, if applicable to the type of operation to be conducted
- (3) CLIMB.

- (i) Normal
 - (ii) One-engine inoperative during climb to en-route altitude
- (4) EN-ROUTE.
 - (i) Steep turns
 - (ii) Approaches to stalls (take-off, en-route, and landing configurations)
 - (iii) Inflight powerplant shutdown
 - (iv) Inflight powerplant restart
 - (v) High speed handling characteristics
- (5) DESCENT.
 - (i) Normal
 - (ii) Maximum rate
- (6) APPROACHES.
 - (i) VFR procedures
 - (ii) Visual approach with 50% loss of power of available powerplants
 - (iii) Visual approach with slat/flap malfunction
 - (iv) IFR PAs (ILS normal and ILS with one-engine inoperative)
 - (v) IFR NPAs (NDB normal and VOR normal)

Note 1: NPA with one engine inoperative may include LOC backcourse procedures, SDF/LDA, GPS, TACAN and circling approach procedures, as applicable to the operator's authorisations.

Note 2: Simulator shall be qualified for training/checking on the circling manoeuvre.

- (vi) Missed approach from PA
 - (vii) Missed approach from NPA
 - (viii) Missed approach with powerplant failure
- (7) LANDINGS.
 - (i) Normal with a pitch mistrim (small aircraft only)
 - (ii) Normal from precision instrument approach
 - (iii) Normal from precision instrument approach with most critical engine inoperative
 - (iv) Normal with 50% loss of power of available powerplants
 - (v) Normal with flap/slat malfunction
 - (vi) Rejected landings
 - (vii) Crosswind
 - (viii) Manual reversion/degraded control augmentation
 - (ix) Short/soft field (small aircraft only)
 - (x) Glassy/rough water (seaplanes only)
 - (xi) Auto-rotation (helicopter only)

- (8) AFTER LANDING.
 - (i) Parking
 - (ii) Emergency evacuation
 - (iii) Docking, mooring, and ramping (seaplanes only)
- (9) OTHER FLIGHT PROCEDURES DURING ANY AIRBORNE PHASE
 - (i) ACAS: use and avoidance maneuvers
 - (ii) Holding
 - (iii) Ice accumulation on airframe
 - (iv) Air hazard avoidance
 - (v) Windshear/ microburst
- (10) NORMAL, ABNORMAL AND ALTERNATE SYSTEMS PROCEDURES DURING ANY PHASE.
 - (i) Pneumatic/pressurisation
 - (ii) Air conditioning
 - (iii) Fuel and oil
 - (iv) Electrical
 - (v) Hydraulic
 - (vi) Flight controls
 - (vii) Anti-icing and de-icing systems
 - (viii) Autopilot
 - (ix) Flight management guidance systems and/or automatic or other approach and landing aids
 - (x) Stall warning devices, stall avoidance devices, and stability augmentation systems
 - (xi) Airborne weather radar
 - (xii) Flight instrument system malfunction
 - (xiii) Communications equipment
 - (xiv) Navigation systems
- (11) EMERGENCY SYSTEMS PROCEDURES DURING ANY PHASE.
 - (i) Aircraft fires
 - (ii) Smoke control
 - (iii) Powerplant malfunctions
 - (iv) Fuel jettison
 - (v) Electrical, hydraulic, pneumatic systems
 - (vi) Flight control system malfunction
 - (vii) Landing gear and flap system malfunction

- (b) Each AOC holder shall ensure that FE flight training includes at least the following training and practice in procedures related to the carrying out of FE duties and functions. This training and practice may be accomplished either in flight or in an FSTD as approved by the Authority.

Note: The flight training events for FEs listed in this IS are generic in nature for a type-rated aeroplane training curriculum. Additional training events may need to be added, changed or deleted. The events listed are typically conducted in a FSTD, except as noted, and may be conducted in aircraft when appropriate

- (1) PREPARATION.
 - (i) Airplane pre-flight
 - (ii) Logbook procedures
 - (iii) Safety checks
 - (iv) Cabin/interiors
 - (v) Exterior Walkaround
 - (vi) Servicing/de-icing
 - (vii) Use of Oxygen
- (2) GROUND OPERATIONS.
 - (i) Performance Data
 - (A) TO/LND Data
 - (B) Airport Analysis
 - (C) Mass and Balance
 - (ii) Use of Checklist
 - (A) Panel setup
 - (iii) Starting
 - (A) External power
 - (B) External Air
 - (C) APU
 - (iv) Communications.
 - (A) Station Procedures
 - (B) ACARS
 - (v) Taxi
- (3) TAKE-OFF
 - (i) Powerplant Control
 - (ii) Flaps/landing gear
 - (iii) Fuel management
 - (iv) Other Systems Operation
 - (v) Aircraft Performance

- (vi) Checklist Completion
- (4) CLIMB.
 - (i) Powerplant control
 - (ii) Fuel Management
 - (iii) Pressurisation
 - (iv) Electrical System
 - (v) Air Conditioning
 - (vi) Flight Controls
 - (vii) Other Systems
- (5) EN-ROUTE.
 - (i) Powerplant Operation
 - (ii) Fuel Management
 - (iii) Performance Management
 - (iv) High Altitude Performance
 - (v) Other Systems Operation
- (6) DESCENT.
 - (i) Powerplant operation
 - (ii) Other Systems Operation
 - (iii) Performance Management
- (7) APPROACH.
 - (i) Landing Data
 - (ii) Landing Gear Operation
 - (iii) Flat/Slat/Spoiler Operation
 - (iv) Approach Monitoring
- (8) LANDINGS.
 - (i) Powerplant Operation
 - (ii) Aircraft Configuration
 - (iii) System Operation
 - (A) Emergency Evacuation
- (9) PROCEDURES DURING ANY GROUND OR AIRBORNE PHASE.
 - (i) Flight deck Equipment
 - (ii) Flap Slats/Gear
 - (iii) Powerplant
 - (iv) Pressurisation
 - (v) Pneumatic

- (vi) Air Conditioning
 - (vii) Fuel and Oil
 - (viii) Electrical
 - (ix) Hydraulic
 - (x) Flight Controls
 - (xi) Anti-Icing and De-icing
 - (xii) Other Checklist Procedures
- (c) Each AOC holder shall ensure that FN flight training includes at least the following training and practice in procedures related to the carrying out of FN duties and functions. This training and practice may be accomplished either in flight or in an FSTD, as approved by the Authority.
- (1) Initial flight training for FNs shall include flight training and a flight check that is adequate to ensure the crew member's proficiency in the performance of his or her assigned duties.
 - (2) The flight training and check specified in paragraph (1) of this IS shall be performed:
 - (i) In-flight or in an appropriate FSTD; or
 - (ii) In commercial air transport operations, if performed under the supervision of a qualified FN instructor or check navigator, as applicable.
- (d) Each AOC holder shall ensure that initial flight training for pilots and FEs consists of at least the following programmed hours of instruction based on the aircraft to be used, unless a reduction is determined appropriate by the Authority:
- (1) For one pilot in either an aircraft or an FSTD:
 - (i) Reciprocating-engine aircraft—PIC: 14 hours; CP: 14 hours; and FE: 12 hours.
 - (ii) Turbopropeller-powered aircraft—PIC: 15 hours; CP: 15 hours; and FE: 12 hours.
 - (iii) Turbo-jet aircraft—PIC: 20 hours; CP: 16 hours; and FE: 12 hours.
 - (iv) Other aircraft—PIC and CP: 14 hours.
 - (2) For two pilots in an FSTD:
 - (i) Reciprocating-engine aircraft—PIC: 24 hours; CP: 24 hours; and FE: 20 hours.
 - (ii) Turbopropeller-powered aircraft—PIC: 24 hours; CP: 24 hours; and FE: 20 hours.
 - (iii) Turbo-jet aircraft—PIC: 28 hours; CP: 28 hours; and FE: 20 hours.
 - (iv) Other aircraft—PIC and CP: 24 hours

Note: Training times in item (d) of this IS are higher than in 14 CFR and are taken from the FAA national norms in FAA Order 8900.1.

IS 8.10.1.16 INITIAL SPECIALISED OPERATIONS TRAINING

- (a) Each AOC holder shall provide initial specialised operations training to ensure that each pilot and FOO is qualified in the type of operation in which he or she serves and in any specialised or new equipment, procedures, and techniques, such as:
- (1) LORAN.

- (i) Knowledge of specialised navigation procedures, such as MNPS, NPAC.
 - (ii) Knowledge of specialised equipment, such as INS, LORAN, GPS.
- (2) CAT II and CAT III approaches.
- (3) Special equipment, procedures and practice.
- (4) A demonstration of competency.
- (5) LVTO operations.
 - (i) Runway and lighting requirements.
 - (ii) Rejected take-offs at, or near, V1 with a failure of the most critical engine.
 - (iii) Taxi operations.
 - (iv) Procedures to prevent runway incursions under low visibility conditions.
- (6) Extended range operations with two engine aeroplanes.
- (7) Approaches using on-board radar.
- (8) Autopilot instead of CP

IS 8.10.1.17 AIRCRAFT DIFFERENCES

- (a) Each AOC holder shall provide aircraft differences training for FOOs when the operator has aircraft variances within the same type of aircraft, which includes at least the following:
 - (1) OPERATIONS PROCEDURES.
 - (i) Operations under adverse weather phenomena conditions, including clear air turbulence, windshear and thunderstorms
 - (ii) Mass and balance computations and load control procedures
 - (iii) Aircraft performance computations, to include take-off mass limitations based on departure runway, arrival runway, and en-route limitations, and also engine-out limitations
 - (iv) Flight planning procedures, to include route selection, flight time, and fuel requirements analysis
 - (v) Dispatch release preparation
 - (vi) Crew briefings
 - (vii) Flight monitoring procedures
 - (viii) Flight crew response to various emergency situations, including the assistance the aircraft FOO can provide in each situation.
 - (ix) MEL and CDL procedures.
 - (x) Manual performance of required procedures in case of the loss of automation capabilities.
 - (xi) Training in appropriate geographic areas.
 - (xii) ATC and instrument procedures, to include ground hold and central flow control procedures.

- (xiii) Radio/telephone procedures.
- (2) EMERGENCY PROCEDURES:
 - (i) Actions taken to aid the flight crew.
 - (ii) AOC holder and Authority notification

Note 1: The FAA Flight Standardisation Board, the Transport Canada and JAA Joint Operations Evaluation Board have a harmonised process and their reports are a source for differences training.

Note 2: ICAO Doc 9376, Preparation of an Operations Manual, contains guidance material to design flight crew training programmes.

Note 3: ICAO Doc 9379, Manual of Procedures for the Establishment of a State's Personnel Licensing System, contains guidance of a general nature on cross-crew qualification, mixed-fleet flying and cross-credit.

IS 8.10.1.20 PILOT PROFICIENCY – AIRCRAFT AND INSTRUMENT PROFICIENCY CHECKS

- (a) Aircraft and instrument proficiency checks for PIC and CP shall include the following operations and procedures listed in the appropriate skill test in Part 2 of these regulations, on each type or variant of type of aircraft.
- (b) The oral and flight test phases of a proficiency check shall not be conducted simultaneously.
- (c) When the check person determines that an applicant's performance is unsatisfactory, the check person may terminate the flight test immediately or, with the consent of the applicant, continue with the flight test until the remaining events are completed.
- (d) If the check must be terminated (for mechanical or other reasons) and there are events which still need to be repeated, the check person shall issue a letter of discontinuance, valid for 60 days, listing the specific areas of operation that have been successfully completed.
- (e) Satisfactory completion of a proficiency check following completion of an approved air carrier training programme for the particular type aircraft, satisfies the requirement for an aircraft type rating skill test if:
 - (1) That proficiency check includes all manoeuvres and procedures required for a type rating skill test.
 - (2) Proficiency checks are to be conducted by a check person approved by the Authority.
- (f) The PIC proficiency check given in accordance with Part 8 may be used to satisfy the proficiency requirements of Part 2 of these regulations to act as a PIC.
- (g) The CP proficiency check given in accordance with Part 8 may be used to satisfy the proficiency requirements of Part 2 to act as a CP.
- (h) The AOC holder may combine recurrent training with the AOC holder's proficiency check if approved to do so by the Authority.

IS 8.10.1.22 PAIRING OF LOW-EXPERIENCE PILOTS

- (a) Situations designated as critical by the Authority at special aerodromes designated by the Authority or at special aerodromes designated by the AOC holder include:

- (1) The prevailing visibility value in the latest weather report for the aerodrome is at or below 1,200 m (3/4 SM).
 - (2) The RVR for the runway to be used is at or below 1,200 m (4,000 ft).
 - (3) The runway to be used has water, snow, slush or similar conditions that may adversely affect aircraft performance.
 - (4) The braking action on the runway to be used is reported to be less than "good".
 - (5) The crosswind component for the runway to be used is in excess of 15 knots.
 - (6) Windshear is reported in the vicinity of the aerodrome.
 - (7) Any other condition in which the PIC determines it to be prudent to exercise the PIC's prerogative.
- (b) Circumstances that would be routinely be considered for deviation from the required minimum line operating flight time include:
- (1) A newly certificated AOC holder does not employ any pilots who meet the minimum flight time requirements;
 - (2) An existing AOC holder adds to its fleet a type aircraft not before proven for use in its operations; or
 - (3) An existing AOC holder establishes a new domicile to which it assigns pilots who will be required to become qualified on the aircraft operated from that domicile.

Note: ICAO Doc 9376, Preparation of an Operations Manual, provides additional guidance.

IS 8.10.1.24 COMPETENCY CHECKS – CABIN CREW MEMBERS

- (a) A check cabin crew member, approved by the Authority, shall conduct competency checks for cabin crew members in the following areas to demonstrate that each candidate's competency level is sufficient to successfully perform assigned duties and responsibilities.
- (1) EMERGENCY EQUIPMENT, AS APPLICABLE.
 - (i) Emergency communication and notification systems
 - (ii) Aircraft exits
 - (iii) Exits with slides or slide rafts (emergency operation)
 - (iv) Slides and slide rafts in a ditching
 - (v) Exits without slides (emergency operation)
 - (vi) Window exits (emergency operation)
 - (vii) Exits with tailcones (emergency operation)
 - (viii) Flight deck exits (emergency operation)
 - (ix) Ground evacuation and ditching equipment
 - (x) First aid equipment
 - (xi) Portable oxygen systems (oxygen bottles, chemical oxygen generators, PBE)
 - (xii) Fire fighting equipment

- (xiii) Emergency lighting systems
- (xiv) Additional emergency equipment
- (2) EMERGENCY PROCEDURES:
 - (i) General types of emergencies specific to aircraft
 - (ii) Emergency communication signals and procedures
 - (iii) Rapid decompression
 - (iv) Insidious decompression and cracked window and pressure seal leaks
 - (v) Fires
 - (vi) Ditching
 - (vii) Ground evacuation
 - (viii) Unwarranted evacuation (i.e., Passenger initiated)
 - (ix) Illness or injury
 - (x) Abnormal situations involving passengers or crew members
 - (xi) Turbulence
 - (xii) Other unusual situations
- (3) EMERGENCY DRILLS.
 - (i) Location and use of all emergency and safety equipment carried on the aeroplane
 - (ii) The location and use of all types of exits
 - (iii) Actual donning of a lifejacket where fitted
 - (iv) Actual donning of PBE
 - (v) Actual handling of fire extinguishers
- (4) CREW RESOURCE MANAGEMENT.
 - (i) Decision-making skills
 - (ii) Briefings and developing open communication
 - (iii) Inquiry, advocacy, and assertion training
 - (iv) Workload management
- (5) DANGEROUS GOODS.
 - (i) Recognition of and transportation of dangerous goods.
 - (ii) Proper packaging, marking, and documentation.
 - (iii) Instructions regarding compatibility, loading, storage and handling characteristics.
- (6) SECURITY.
 - (i) Hijacking

IS 8.10.1.25 COMPETENCY CHECKS – FLIGHT OPERATIONS OFFICERS

- (a) A check FOO, approved by the Authority, shall conduct competency checks for FOOs in at least the following areas to demonstrate that each candidate's competency level is sufficient to successfully perform assigned duties and responsibilities.
 - (1) Use of communications systems including the characteristics of those systems and the appropriate normal and emergency procedures;
 - (2) 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;
 - (3) The NOTAM system;
 - (4) Navigational aids and publications;
 - (5) Joint dispatcher-pilot responsibilities;
 - (6) Characteristics of appropriate airports;
 - (7) Prevailing weather phenomena and the available sources of weather information;
 - (8) Air traffic control and IAPs; and
 - (9) Approved dispatcher resource management initial training.

IS 8.10.1.33 RECURRENT TRAINING – FLIGHT CREW MEMBERS

- (a) Each AOC holder shall establish a recurrent training programme for all flight crew members in the AOC holder's OM and shall have it approved by the Authority.
- (b) Each flight crew member shall undergo recurrent training relevant to the type or variant of aircraft on which he or she is certificated to operate and for the crew member position involved.
- (c) Each AOC holder shall have all recurrent training conducted by suitably qualified personnel.
- (d) Each AOC holder shall ensure that flight crew member recurrent ground training includes at least the following:
 - (1) GENERAL SUBJECTS.
 - (i) Flight locating procedures
 - (ii) Principles and method for determining mass/balance and runway limitations
 - (iii) Meteorology to ensure practical knowledge of weather phenomena including the principles of frontal system, icing, fog, thunderstorms, windshear, and high-altitude weather situations
 - (iv) ATC systems and phraseology
 - (v) Navigation and use of navigational aids
 - (vi) Normal and emergency communication procedures
 - (vii) Visual cues before descent to MDA
 - (viii) Accident/incident and occurrence review

- (ix) Other instructions necessary to ensure the pilot's competence
 - (2) AIRCRAFT SYSTEMS AND LIMITATIONS.
 - (i) Normal, abnormal, and emergency procedures
 - (ii) Aircraft performance characteristics
 - (iii) Engines and, if applicable, propellers
 - (iv) Major aircraft components
 - (v) Major aircraft systems (i.e., flight controls, electric, hydraulic and other systems as appropriate)
 - (3) GROUND ICING AND DE-ICING PROCEDURES AND REQUIREMENTS.
 - (4) EMERGENCY EQUIPMENT AND DRILLS.
 - (5) EVERY 12 MONTHS.
 - (i) Location and use of all emergency and safety equipment carried on the aeroplane
 - (ii) The location and use of all types of exits
 - (iii) Actual donning of a lifejacket where fitted
 - (iv) Actual donning of PBE
 - (v) Actual handling of fire extinguishers
 - (6) EVERY 3 YEARS.
 - (i) Operation of all types of exits
 - (ii) Demonstration of the method used to operate a slide, where fitted
 - (iii) Fire-fighting using equipment representative of that carried in the aeroplane on an actual or simulated fire
- Note: With Halon extinguishers, an alternative method acceptable to the Authority may be used.*
- (iv) Effects of smoke in an enclosed area and actual use of all relevant equipment in a simulated smoke-filled environment
 - (v) Actual handling of pyrotechnics, real or simulated, where fitted
 - (vi) Demonstration in the use of the life raft(s), where fitted
 - (vii) An emergency evacuation drill
 - (viii) A ditching drill, if applicable
 - (ix) A rapid decompression drill, if applicable
 - (x) Survival suits, if applicable to the operation
 - (7) CREW RESOURCE MANAGEMENT:
 - (i) Decision-making skills
 - (ii) Briefings and developing open communication
 - (iii) Inquiry, advocacy, and assertion training
 - (iv) Workload management

- (v) Situational awareness
- (8) DANGEROUS GOODS.
 - (i) Recognition of and transportation of dangerous goods
 - (ii) Proper packaging, marking, and documentation
 - (iii) Instructions regarding compatibility, loading, storage and handling characteristics
- (9) SECURITY.
 - (i) Hijacking
 - (ii) Disruptive passengers
- (e) Each AOC holder shall verify knowledge of the recurrent ground training by an oral or written examination.
- (f) Each AOC holder shall ensure that pilot recurrent flight training include at least the following:

Note: Flight training may be conducted in an appropriate aircraft, in an adequate FSTD, or in a combination of aircraft and FSTD, as approved by the Authority.

- (1) PREPARATION.
 - (i) Visual inspection (use of pictorial display authorised).
 - (ii) Pre-taxi procedures.
- (2) GROUND OPERATION:
 - (i) Performance limitations
 - (ii) Flight deck management
 - (iii) Securing cargo
 - (iv) Pushback
 - (v) Powerback taxi, if applicable
 - (vi) Starting
 - (vii) Taxi
 - (viii) Pre-take-off checks
- (3) TAKE-OFF.
 - (i) Normal
 - (ii) Crosswind
 - (iii) Rejected
 - (iv) Power failure after V1
 - (v) Powerplant failure during second segment
 - (vi) LVTO Operations
- (4) CLIMB.
 - (i) Normal
 - (ii) One-engine inoperative climb to en-route altitude

- (5) EN-ROUTE.
 - (i) Steep turns
 - (ii) Approaches to stalls (take-off, en-route, and landing configurations)
 - (iii) Inflight powerplant shutdown
 - (iv) Inflight powerplant restart
 - (v) High speed handling characteristics
- (6) DESCENT.
 - (i) Normal
 - (ii) Maximum rate
- (7) APPROACHES.
 - (i) VFR procedures
 - (ii) Visual approach with 50% loss of power of available powerplants
 - (iii) Visual approach with slat/flap malfunction
 - (iv) IFR PAs (ILS normal and ILS with one-engine inoperative)
 - (v) IFR NPAs (NDB normal and VOR normal)
 - (vi) NPA with one engine inoperative (LOC backcourse, SDF/LDA, GPS, TACAN and circling approach procedures)

Note: An FSTD shall not be used for training and checking on the circling manoeuvre unless it has been qualified for circling manoeuvres. To participate in that training and checking, the operator shall be approved by the Authority to conduct circling manoeuvres.

- (vii) Missed approach from PA
 - (viii) Missed approach from NPA
 - (ix) Missed approach with powerplant failure
- (8) LANDINGS.
 - (i) Abnormal with a pitch mistrim (small aircraft only)
 - (ii) Abnormal from precision instrument approach
 - (iii) Abnormal from precision instrument approach with most critical engine inoperative
 - (iv) Abnormal with 50% loss of power of available powerplants
 - (v) Abnormal with flap/slat malfunction
 - (vi) Rejected landings
 - (vii) Crosswind
 - (viii) Short/soft field (small aircraft only)
 - (ix) Glassy/rough water (seaplanes only)
 - (x) Auto-rotation (helicopter only)
- (9) AFTER LANDING.

- (i) Parking
 - (ii) Emergency evacuation
 - (iii) Docking, mooring, and ramping (seaplanes only)
- (10) OTHER FLIGHT PROCEDURES DURING ANY AIRBORNE PHASE.
- (i) ACAS: use and avoidance manoeuvres
 - (ii) Holding
 - (iii) Ice accumulation on airframe
 - (iv) Air hazard avoidance
 - (v) Windshear/microburst
- (11) NORMAL, ABNORMAL AND ALTERNATE SYSTEMS PROCEDURES DURING ANY PHASE.
- (i) Pneumatic/pressurisation
 - (ii) Air conditioning
 - (iii) Fuel and oil
 - (iv) Electrical
 - (v) Hydraulic
 - (vi) Flight controls
 - (vii) Anti-icing and de-icing systems
 - (viii) Flight management guidance systems and/or automatic or other approach and landing aids
 - (ix) Stall warning devices, stall avoidance devices, and stability augmentation systems
 - (x) Airborne weather radar
 - (xi) Flight instrument system malfunction
 - (xii) Communications equipment
 - (xiii) Navigation systems
 - (xiv) Autopilot
 - (xv) Approach and landing aids
 - (xvi) Flight instrument system malfunction
- (12) EMERGENCY SYSTEMS PROCEDURES DURING ANY PHASE.
- (i) Aircraft fire
 - (ii) Smoke control
 - (iii) Powerplant malfunctions
 - (iv) Fuel jettison
 - (v) Electrical, hydraulic, pneumatic systems
 - (vi) Flight control system malfunction

- (vii) Landing gear and flap system malfunction
- (g) Each AOC holder shall ensure that FE recurrent flight training includes at least the flight training specified in IS: 8.10.1.15(b).
- (h) Each AOC holder shall ensure that FN recurrent training includes enough training and an in-flight check to ensure competency with respect to operating procedures and navigation equipment to be used and familiarity with essential navigation information pertaining to the AOC holder's routes that require a FN.
- (i) The AOC holder may combine recurrent training with the AOC holder's proficiency check if approved by the Authority.
- (j) Recurrent ground and flight training curricula may be accomplished concurrently or intermixed, but completion of each of these curricula shall be recorded separately.

IS 8.10.1.34 RECURRENT NORMAL AND EMERGENCY TRAINING – CABIN CREW MEMBERS

- (a) Each AOC holder shall establish and have approved by the Authority a recurrent training programme for all cabin crew members.
- (b) Each cabin crew member shall undergo recurrent training in evacuation and other appropriate normal and emergency procedures and drills relevant to his or her assigned positions and the type(s) and/or variant(s) of aircraft on which he or she operates.
- (c) Each AOC holder shall have all recurrent training conducted by suitably qualified personnel.
- (d) Each AOC holder shall ensure that, every 12 months, each cabin crew member receive recurrent training in at least the following:
 - (1) EMERGENCY EQUIPMENT, IF APPLICABLE.
 - (i) Emergency communication and notification systems
 - (ii) Aircraft exits
 - (iii) Exits with slides or slide rafts (emergency operation)
 - (iv) Slides and slide rafts in a ditching
 - (v) Exits without slides (emergency operation)
 - (vi) Window exits (emergency operation)
 - (vii) Exits with tailcones (emergency operation)
 - (viii) Flight deck exits (emergency operation)
 - (ix) Ground evacuation and ditching equipment
 - (x) First aid equipment
 - (xi) Portable oxygen systems (oxygen bottles, chemical oxygen generators, PBE)
 - (xii) Fire fighting equipment
 - (xiii) Emergency lighting systems
 - (xiv) Additional emergency equipment

- (2) EMERGENCY PROCEDURES:
 - (i) General types of emergencies specific to aircraft
 - (ii) Emergency communication signals and procedures
 - (iii) Rapid decompression
 - (iv) Insidious decompression and cracked window and pressure seal leaks
 - (v) Fires
 - (vi) Ditching
 - (vii) Ground evacuation
 - (viii) Unwarranted evacuation (i.e., passenger initiated)
 - (ix) Illness or injury
 - (x) Abnormal situations involving passengers or crew members
 - (xi) Turbulence
 - (xii) Other unusual situations
 - (3) EMERGENCY DRILLS.
 - (4) EVERY 12 MONTHS.
 - (i) Location and use of all emergency and safety equipment carried on the aeroplane
 - (ii) The location and use of all types of exits
 - (iii) Actual donning of a lifejacket where fitted
 - (iv) Actual donning of PBE
 - (v) Actual handling of fire extinguishers
 - (5) EVERY 3 YEARS.
 - (i) Operation of all types of exits
 - (ii) Demonstration of the method used to operate a slide, where fitted
 - (iii) Fire-fighting using equipment representative of that carried in the aeroplane on an actual or simulated fire
- Note: With Halon extinguishers, an alternative method acceptable to the Authority may be used.*
- (iv) Effects of smoke in an enclosed area and actual use of all relevant equipment in a simulated smoke-filled environment
 - (v) Actual handling of pyrotechnics, real or simulated, where fitted
 - (vi) Demonstration in the use of the life-raft(s), where fitted
 - (vii) An emergency evacuation drill
 - (viii) A ditching drill, if applicable
 - (ix) A rapid decompression drill, if applicable
 - (x) Survival suits, if applicable to the operation
 - (6) CREW RESOURCE MANAGEMENT.

- (i) Decision-making skills
 - (ii) Briefings and developing open communication
 - (iii) Inquiry, advocacy, and assertion training
 - (iv) Workload management
- (7) DANGEROUS GOODS:
 - (i) Recognition of and transportation of dangerous goods
 - (ii) Proper packaging, marking, and documentation
 - (iii) Instructions regarding compatibility, loading, storage and handling characteristics
- (8) SECURITY.
 - (i) Hijacking
 - (ii) Disruptive passengers
- (e) Each AOC holder shall verify knowledge of the recurrent training by an oral or written examination.
- (f) An AOC holder, if approved by the Civil Aviation Authority, may administer each of the recurrent training curricula concurrently or intermixed, but shall record completion of each of these curricula separately.

IS 8.10.1.35 RECURRENT TRAINING – FLIGHT OPERATIONS OFFICERS

- (a) Each AOC holder shall establish and maintain a recurrent training programme, approved by the Authority and established in the AOC holder's OM, to be completed annually by each FOO.
- (b) Each FOO shall undergo recurrent training relevant to the type(s) and/or variant(s) of aircraft and the operations conducted by the AOC holder, and that training shall consist of at least the following hours of instruction:
 - (1) Reciprocating-engine aircraft – 8 hours
 - (2) Turbopropeller-powered aircraft – 10 hours
 - (3) Turbo-jet aircraft – 20 hours
 - (4) Other aircraft to include rotorcraft– 10 hours
- (c) Each AOC holder shall have all recurrent training conducted by an appropriately qualified instructor.
- (d) An AOC holder shall ensure that, every 12 months, each FOO receives recurrent training in the subjects required for initial training listed in IS: 8.10.1.14D in sufficient detail to ensure competency in each specified area of training. Operators may choose to provide in-depth coverage of selected subjects on any one cycle of training. In such cases the operator's training programme shall cover all the subjects to the detail required for initial qualification within three years.
- (e) Each AOC holder shall verify knowledge of the recurrent training by an oral or written examination.
- (f) An AOC holder shall record completion of the required training.

IS 8.10.1.37 INSTRUCTOR TRAINING

- (a) FLIGHT CREW INSTRUCTOR TRAINING.
- (1) No operator may use a person, nor may any person serve as flight instructor in a training programme unless:
 - (i) That person has satisfactorily completed initial or transition flight instructor training; and
 - (ii) Within the preceding 24 calendar months, that person satisfactorily conducts instruction under the observation of an inspector from the Authority or an AOC holder's check personnel.
 - (2) An AOC holder may accomplish the observation check for a flight instructor, in part or in full, in an aircraft or an FSTD.
 - (3) Each AOC holder shall ensure that initial ground training for flight instructors includes the following:
 - (i) Flight instructor duties, functions, and responsibilities.
 - (ii) Applicable regulations and the AOC holder's policies and procedures.
 - (iii) Appropriate methods, procedures, and techniques for conducting the required checks.
 - (iv) Proper evaluation of student performance including the detection of:
 - (A) Improper and insufficient training; and
 - (B) Personal characteristics of an applicant that could adversely affect safety.
 - (C) Appropriate corrective action in the case of unsatisfactory checks.
 - (D) Approved methods, procedures, and limitations for performing the required normal, abnormal, and emergency procedures in the aircraft.
 - (v) Except for holders of existing flight instructor licences:
 - (A) The fundamental principles of the teaching-learning process;
 - (B) Teaching methods and procedures; and
 - (C) The instructor-student relationship.
 - (4) Each AOC holder shall ensure that the transition ground training for flight instructors includes the approved methods, procedures, and limitations for performing the required normal, abnormal, and emergency procedures applicable to the aircraft to which the flight instructor is in transition.
 - (5) Each AOC holder shall ensure that the initial and transition flight training for flight instructors includes the following:
 - (i) The safety measures for emergency situations that are likely to develop during instruction.
 - (ii) The potential results of improper, untimely, or non-execution of safety measures during instruction.
 - (iii) For pilot flight instructor (aircraft):

- (A) Inflight 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; and
 - (B) The safety measures to be taken from either pilot seat for emergency situations that are likely to develop during instruction.
- (6) For FE instructors and FN instructors, in-flight training to ensure competence to perform assigned duties.
- (7) An AOC holder may accomplish the flight training requirements for flight instructors in full or in part in flight or in an FSTD, as appropriate.
- (8) An AOC holder shall ensure that the initial and transition flight training for flight instructors (flight simulation training device) includes the following:
 - (i) Training and practice in the required normal, abnormal, and emergency procedures to ensure competence to conduct the flight instruction required by this part. This training and practice shall be accomplished in full or in part in an FSTD.
 - (ii) Training in the operation FSTDs, to ensure competence to conduct the flight instruction required by this Part.
- (b) CABIN CREW INSTRUCTOR TRAINING.
 - (1) No operator may use a person, nor may any person serve as cabin instructor in a training programme unless:
 - (i) That person has satisfactorily completed initial or transition cabin instructor training; and
 - (ii) Within the preceding 24 calendar months, that person satisfactorily conducts instruction under the observation of an inspector from the Authority or an AOC holder's check airman.
 - (2) An AOC holder may accomplish the observation check for a cabin instructor, in part or in full, in an aircraft or a cabin simulation training device.
 - (3) Each AOC holder shall ensure that initial ground training for cabin instructors includes the following:
 - (i) Cabin instructor duties, functions, and responsibilities.
 - (ii) Applicable regulations and the AOC holder's policies and procedures.
 - (iii) Appropriate methods, procedures, and techniques for conducting the required checks.
 - (iv) Proper evaluation of student performance including the detection of:
 - (A) Improper and insufficient training; and
 - (B) Personal characteristics of an applicant that could adversely affect safety.
 - (v) Appropriate corrective action in the case of unsatisfactory checks.
 - (vi) Approved methods, procedures, and limitations for performing the required normal, abnormal, and emergency procedures in the aircraft, as applicable.
 - (vii) Except for existing cabin instructors:
 - (A) The fundamental principles of the teaching-learning process;

- (B) Teaching methods and procedures; and
 - (C) The instructor-student relationship.
 - (4) Each AOC holder shall ensure that the transition ground training for cabin instructors includes the approved methods, procedures, and limitations for performing the required normal, abnormal, and emergency procedures applicable to the aircraft, as appropriate to which the cabin instructor is in transition.
 - (5) Each AOC holder shall ensure that the initial and transition flight training for cabin instructors includes the following:
 - (i) The safety measures for emergency situations that are likely to develop during instruction.
 - (ii) The potential results of improper, untimely, or non-execution of safety measures during instruction.
- (c) FLIGHT OPERATIONS OFFICER INSTRUCTOR TRAINING.
 - (1) No operator may use a person, nor may any person serve as FOO instructor in a training programme unless:
 - (i) That person has satisfactorily completed initial or transition FOO instructor training; and
 - (ii) Within the preceding 24 calendar months, that person satisfactorily conducts instruction under the observation of an inspector from the Authority or an AOC holder's check FOO.
 - (2) An AOC holder may accomplish the observation check for a FOO instructor, in part or in full, in a flight operations centre.
 - (3) Each AOC holder shall ensure that initial ground training for FOO instructors includes the following:
 - (i) FOO instructor duties, functions, and responsibilities.
 - (ii) Applicable regulations and the AOC holder's policies and procedures.
 - (iii) Appropriate methods, procedures, and techniques for conducting the required checks.
 - (iv) Proper evaluation of student performance including the detection of:
 - (A) Improper and insufficient training; and
 - (B) Personal characteristics of an applicant that could adversely affect safety.
 - (v) Appropriate corrective action in the case of unsatisfactory checks.
 - (vi) Approved methods, procedures, and limitations for performing the required normal, abnormal, and emergency procedures for the aircraft or position involved.
 - (vii) Except for holders of existing FOO instructor licences:
 - (A) The fundamental principles of the teaching-learning process;
 - (B) Teaching methods and procedures; and
 - (C) The instructor-student relationship.

- (4) Each AOC holder shall ensure that the transition ground training for FOO instructors includes the approved methods, procedures and limitations for performing the required normal, abnormal and emergency procedures applicable to the aircraft or position involved to which the FOO instructor is in transition.
- (5) Each AOC holder shall ensure that the initial and transition training for flight operations officer instructors includes the following:
 - (i) The safety measures for emergency situations that are likely to develop during instruction in a flight operations centre.
 - (ii) The potential results of improper, untimely or non-execution of safety measures during instruction in a flight operations centre.
- (d) DANGEROUS GOODS INSTRUCTOR TRAINING.
 - (1) No operator may use a person, nor may any person serve as dangerous goods instructor in a training programme unless:
 - (i) That person has satisfactorily completed dangerous goods training in the applicable dangerous goods category prior to delivering such a dangerous goods training programme.
 - (ii) That person has within the preceding 24 calendar months, satisfactorily conducted initial or recurrent instructions or in the absence undergoes recurrent training.

IS 8.10.1.40 CHECK PERSONNEL TRAINING

- (a) TRAINING FOR CHECK PERSONNEL – GENERAL.
 - (1) No operator may use a person, nor may any person serve as a check person in a training programme unless, with respect to the aircraft type involved, that person has satisfactorily completed the appropriate training phases for the aircraft, including recurrent training and differences training, that are required to serve as PIC, FE, navigator, cabin crew member, or FOO, as applicable.
 - (2) Each AOC holder shall ensure that initial ground training for check personnel includes:
 - (i) Check personnel duties, functions, and responsibilities.
 - (ii) Applicable regulations and the AOC holder's policies and procedures.
 - (iii) Appropriate methods, procedures, and techniques for conducting the required checks.
 - (iv) Proper evaluation of student performance including the detection of:
 - (A) Improper and insufficient training.
 - (v) Personal characteristics of an applicant that could adversely affect safety.
 - (A) Appropriate corrective action in the case of unsatisfactory checks.
 - (B) Approved methods, procedures, and limitations for performing the required normal, abnormal, and emergency procedures in the aircraft.
 - (3) Transition ground training for all check personnel, shall include the approved methods, procedures, and limitations for performing the required normal, abnormal, and emergency procedures applicable to the aircraft to which the check person is in transition.
- (b) TRAINING FOR CHECK PERSONNEL OF FLIGHT CREW.

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- (1) For check persons, each AOC holder shall ensure that the initial and transition flight training includes:
 - (i) Training and practice in conducting flight evaluations (from the left and right pilot seats for pilot check persons in the required normal, abnormal, and emergency procedures to ensure competence to conduct the flight checks.
 - (ii) The potential results of improper, untimely or non-execution of safety measures during an evaluation.
 - (iii) The safety measures (to be taken from either pilot seat for check persons for emergency situations that are likely to develop during an evaluation.
 - (2) For check persons and check flight navigators, each AOC holder shall ensure training to ensure competence to perform assigned duties to include:
 - (i) The safety measures for emergency situations that are likely to develop during a check.
 - (ii) The potential results of improper, untimely or non-execution of safety measures during a check.
 - (3) Each AOC holder shall ensure that the initial and transition flight training for check personnel (simulator) includes:
 - (i) Training and practice in conducting flight checks in the required normal, abnormal, and emergency procedures to ensure competence to conduct the checks required by this part (this training and practice shall be accomplished in an FSTD).
 - (ii) Training in the operation of FSTDs, to ensure competence to conduct the checks required by this Part.
 - (4) An AOC holder may accomplish flight training for check personnel, in full or in part in an aircraft or in an FSTD, as appropriate.
 - (5) The AOC holder shall record the training in each individuals training record maintained by the AOC holder.
- (c) TRAINING FOR CHECK CABIN CREW MEMBERS.
- (1) For check cabin crew members, each AOC holder shall ensure that the training includes:
 - (i) The safety measures for emergency situations that are likely to develop during a check; and
 - (ii) The potential results of improper, untimely or non-execution of safety measures during a check.
- (d) TRAINING FOR CHECK FLIGHT OPERATIONS OFFICERS.
- (1) For check FOO, each AOC holder shall ensure that the training includes:
 - (i) The safety measures for emergency situations that are likely to develop during a check; and
 - (ii) The potential results of improper, untimely or non-execution of safety measures during a check.
 - (2) The AOC holder shall record the training in each individuals training record maintained by the AOC holder.

IS 8.12.1.4 DUTY AND REST PERIODS

Each AOC holder, scheduling official and crew member shall use the following tables as appropriate, to consolidate all scheduling and actual event requirements with respect to crew member flight time, duty and rest periods for commercial air transport operations.

