

# Democratic Socialist Republic of Sri Lanka



## Civil Aviation Authority of Sri Lanka

### Implementing Standards

(Issued under Sec. 120, Civil Aviation Act No. 14 of 2010)

### Title: Compliance to Annex 6 Part 1- Chapter 4 - Flight Operations

Reference No. : CA-IS-6-(I)-04

SLCAIS : 013

Date: 15<sup>th</sup> January 2018

Pursuant to Sec. 120 of the Civil Aviation Act No.14 of 2010, Director General of Civil Aviation shall have the power to issue, whenever he considers it necessary or appropriate to do so, such Implementing Standards for the purpose of giving effect to any of the provisions of the Civil Aviation Act, any regulations or rules made thereunder including the Articles of the Convention on International Civil Aviation which are specified in the Schedule to the Act.

Accordingly, I, being the Director General of Civil Aviation do hereby issue the Implementing Standards on Compliance to **Annex 6 - Part (I) - Chapter 4-Flight Operations** as mentioned in the Attachment hereto (Ref: IS-6-(i)-4) which set out the intended meaning of the terms used in Annex 6 and all other documents relating to aircraft operations.

This document supersedes the Implementing Standards IS 058 and shall be treated as null and void.

These Implementing Standards shall come into force with immediate effect and remain in force unless revoked.

Attention is also drawn to sec. 103 of the Act, which states inter alia that failure to comply with Implementing Standard is an offence.

H.M.C. Nimalsiri  
Director General of Civil Aviation and  
Chief Executive Officer

Civil Aviation Authority of Sri Lanka  
152/1, Minuwangoda Road.  
Katunayake.

Enclosure: Attachment No. CA-IS-6-(i)-04

## Implementing Standards

### SLCAIS-013: Compliance to Annex 6 Part 1 – Chapter 4 - Flight Operations

#### GENERAL

- I. Contents in this document are based on the amendment 42 of the 10<sup>th</sup> Edition of ICAO Annex 6 Part (I), “Operation of Aircraft” Chapter 4, “Flight Operations”.
- II. The mandatory requirements contained in this document are applicable to person/organizations holding an air operator certificate issued by Director-General of Civil Aviation, Sri Lanka for commercial air transportation regardless of the place of operations and prospective applicants for air operator certificate for commercial air transportation.
- III. Holders of Air Operator Certificate issued by the DGCA for commercial air transportation shall comply with the requirements published in this document and are hereby instructed to forward to the DGCA a “Declaration of Conformance” which indicates the degree of compliance with each item detailed in this document.
- IV. This document supersedes the Implementing Standards IS 058 and shall be treated as null and void.
- V. This document may be amended from time to time and the amendments will be reflected with the vertical line on the right side of the text.

#### FLIGHT OPERATIONS

##### 1. OPERATING FACILITIES

- 1.1 A holder of an AOC shall ensure that a flight will not be commenced unless it has been ascertained by every reasonable means available that the ground and/or water facilities available and directly required on such flight, for the safe operation of the aeroplane and the protection of the passengers, are adequate for the type of operation under which the flight is to be conducted and are adequately operated for this purpose.

*Note.* — “Reasonable means” in this IS is intended to denote the use, at the point of departure, of information available to the operator either through official information published by the aeronautical information services or readily obtainable from other sources.

- 1.2 A holder of an AOC shall ensure that any inadequacy of facilities observed in the course of operations is reported to the authority responsible for them, without undue delay.
- 1.3 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 weather conditions.
- 1.4 A holder of an AOC shall, as part of its safety management system, assess the level of rescue and firefighting service (RFFS) protection available at any aerodrome intended

to be specified in the operational flight plan in order to ensure that an acceptable level of protection is available for the aeroplane intended to be used.

*Note.* — *Gazette Notification Number 1882/49 03<sup>rd</sup> October 2014 & SLCAP 2600 includes safety management provisions for air operators. Further guidance is contained in the Safety Management Manual (SMM) (Doc 9859), and State Safety Program SLCAP 2600*

- 1.5** Information related to the level of RFFS protection that is deemed acceptable by the operator shall be contained in the operations manual.

*Note* — *Appendix 1 of this IS contains guidance on assessing an acceptable level of RFFS protection at aerodromes. 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 Annex 14, Volume I, for aerodromes.*

## **2. OPERATIONAL CERTIFICATION AND SUPERVISION**

- 2.1** The air operator certificate-

- 2.1.1** A holder of an AOC shall not engage in commercial air transport operations unless in possession of a valid air operator certificate issued by the Director General of Civil Aviation having conformed to the applicable requirements specified in Air Operator Certification Manual (SLCAP 4100).

A Foreign Air Operator shall obtain a Foreign Air Operator Certification from DGCA having conformed to the applicable requirements specified in Foreign Air Operator Certification Manual (SLCAP 4105). The issue of such a certificate is based on the Air Operator Certificate issued to the Foreign Air Operator by the respective authority of the state in which carrier is registered. .

- 2.1.2** The air operator certificate issued by the Director General of Civil Aviation shall authorize the operator to conduct commercial air transport operations in accordance with the operations specifications.

*Note.* — *Provisions for the content of the air operator certificate and its associated operations specifications are contained in 2.1.5 and 2.1.6 is in SLCAP 4100.*

- 2.1.3** The issue of an air operator certificate by the Director General of Civil Aviation shall be dependent upon the ability of the applicant to demonstrate to the satisfaction of the DGCA of the presence of an adequate organization, qualified personnel, equipment, facilities, method of control and supervision of flight operations, training programme as well as ground handling and maintenance arrangements consistent with the nature and extent of the operations specified.

*Note.1* — *Refer for guidance on the issue of an air operator certificate, and is also contained in Air Operator Certification Manual SLCAP 4100, and Foreign Air Operator Certification Manual SLCAP 4105*

- 2.1.3.1** A holder of an AOC shall develop policies and procedures for third parties that perform work on its behalf.

- 2.1.4** The continued validity of an air operator certificate shall depend upon the operator maintaining the requirements of 2.1.3 of this IS under the supervision of the DGCA.
- 2.1.5** The air operator certificate issued by the Director General of Civil Aviation shall contain at least the following information and shall follow the layout contained in Air Operator Certification Manual (SLCAP 4100).
- a) The State of the Operator and the issuing authority;
  - b) The air operator certificate number and its expiration date;
  - c) The operator name, trading name (if different) and address of the principal place of business;
  - d) The date of issue and the name, signature and title of the authority representative; and
  - e) The location, in a controlled document carried on board, where the contact details of operational management can be found.
  - f) Any other pertinent information limitations/conditions that the Director General of Civil Aviation may deem necessary.
- 2.1.6** The operations specifications associated with the air operator certificate shall contain at least the information listed in Appendix O of SLCAP 4100 and shall follow the layout contained therein. Additional information may be listed in the Operations Specifications that the Director General of Civil Aviation may deem necessary.
- 2.1.7** Air operator certificates and their associated operations specifications first issued from 20<sup>th</sup> November 2008 shall follow the layouts of Air Operator Certification Manual (SLCAP 4100).
- 2.1.8** The procedures laid down in Air Operator Certification Manual (SLCAP 4100) and Operations Inspectors Handbook (SLCAP 4200) for the certification and the continued surveillance of the operator shall be followed to ensure that the required standards of operations established in para 2 are maintained.
- 2.2 Surveillance of operations by a foreign operator**
- 2.2.1** Director General of Civil Aviation shall issue an International Airline Licence following the foreign Air Operator certification process laid down in Foreign Air Operator Certification Manual (SLCAP4105), on the strength of a valid Air Operator Certificate issued by the state of registry provided that the requirements under which the certificate was issued are at least equal to the applicable standards specified in SLCAP 4105.
- 2.2.2** The procedures laid down in Foreign Air Operator Certification Manual (SLCAP 4105) shall be followed for the surveillance of operations in the territory of Sri Lanka by a foreign air operator and for taking appropriate action when necessary to preserve safety.
- 2.2.3** Foreign Air Operators shall meet and maintain the requirements stipulated in the Operations Specifications attached to the International Airline Licence issued to the operator by Director General of Civil Aviation. Guidelines on the surveillance of operations by foreign operators is contained in SLCAP 4105 and check list FS 001 shall be used.

## 2.3 Operations manual

**2.3.1** A holder of an AOC shall provide, for the use and guidance of operations personnel concerned, an operations manual in accordance with Preparation/Certification of Operations Manual (SLCAP 4500). Organization and contents of the Operations Manual shall be according to SLCAP 4500. The Operations Manual shall be amended or revised as is necessary to ensure that the information contained therein is kept up to date. All such amendments or revisions shall be issued to all personnel that are required to use this manual.

**2.3.2** A holder of an AOC shall forward to the Director General of Civil Aviation a copy of the operations manual together with all amendments and/or revisions, for review and acceptance and, where required, approval. The operator shall incorporate in the operations manual such mandatory material as the DGCA may require.

*Note 1. — Requirements for the organization and content of an operations manual is contained in SLCAP 4500.*

*Note 2. — The following items in the operations manual require the approval of the DGCA.*

*Aerodrome operating minima (Refer IS 013 Para 2.8)*

*MEL (Refer IS 015 Para 1.3)*

*Flight crew member training programme (Refer IS 018 para 3.1)*

*Flight Operations Officer/Flight Dispatchers Training programme (Refer IS 19)*

*Cabin crew member training programme (Refer IS 021 and SLCAP 4305)*

*Security training programme Refer (IS 022 chapter 4).*

## 2.4 Operating instructions — general

**2.4.1** A holder of an AOC shall ensure that all operations personnel are properly instructed in their particular duties and responsibilities and the relationship of such duties to the operation as a whole.

**2.4.2** An aeroplane shall not be taxied on the movement area of an aerodrome unless the person at the controls:

- a) has been duly authorized by the operator or a designated agent;
- b) is fully competent to taxi the aeroplane;
- c) is qualified to use the radiotelephone; and
- d) has received instruction from a competent person in respect of aerodrome layout, routes, signs, marking, lights, air traffic control (ATC) signals and instructions, phraseology and procedures, and is able to conform to the operational standards required for safe aeroplane movement at the aerodrome.

**2.4.3** A holder of an AOC should issue operating instructions and provide information on aeroplane climb performance with all engines operating to enable the pilot-in-command to determine the climb gradient that can be achieved during the departure phase for the existing take-off conditions and intended take-off technique. This information should be included in the operations manual of the operator.

## **2.5 In-flight simulation of emergency situations**

A holder of an AOC shall ensure that when passengers or cargo are being carried, no emergency or abnormal situations shall be simulated.

## **2.6 Checklists**

The checklists provided in accordance with para 1.4 of Implementing Standards 015 published by the Director General of Civil Aviation shall be used by flight crews prior to, during and after all phases of operations, and in emergency, to ensure compliance with the operating procedures contained in the aircraft operating manual and the aeroplane flight manual or other documents associated with the certificate of airworthiness and otherwise in the operations manual are followed. The design and utilization of checklists shall observe Human Factors principles. An operator may use the Guidance material on the application of Human Factors principles detailed in the Human Factors Training Manual (ICAO Doc 9683).

## **2.7 Minimum flight altitudes**

**2.7.1** A holder of an AOC shall establish minimum flight altitudes for those routes flown for which minimum flight altitudes have been established by the State flown over or the responsible State provided that such minimum altitudes shall not be less than those established by the state.

**2.7.2** A holder of an AOC shall specify the method by which it is intended to determine minimum flight altitudes for operations conducted over routes for which minimum flight altitudes have not been established by the state flown over or the responsible state, and shall include this method in the operations manual. The minimum flight altitudes determined in accordance with the above method shall not be lower than specified in IS 026.

**2.7.3** The method for establishing the minimum flight altitudes should be approved by the Director General of Civil Aviation.

**2.7.4** In the grant of approval for such method, the Director General of Civil Aviation should take into careful consideration of the probable effects of the following factors on the safety of the operation in question;

- a) The accuracy and reliability with which the position of the aeroplane can be determined;
- b) The inaccuracies in the indications of the altimeters used;
- c) The characteristics of the terrain (e.g. sudden changes in the elevation);
- d) The probability of encountering unfavorable meteorological conditions (e.g. severe turbulence and descending air currents);
- e) Possible inaccuracies in aeronautical charts; and
- f) Airspace restrictions.

## **2.8 Aerodrome operating minima**

**2.8.1** A holder of an AOC shall establish aerodrome operating minima for such aerodrome to be used in operations, and the method of determination of such minima shall receive the approval of Director General of Civil Aviation. Aerodrome Operating Minima

determined by the operator shall not be lower than any that may be established for such aerodromes by the state in which the aerodrome is located, except when otherwise approved by that state.

**2.8.1.1** The DGCA may approve operational credit(s) for operations with aeroplanes equipped with automatic landing systems, a HUD or equivalent displays, EVS, SVS or CVS. Such approvals shall not affect the classification of the instrument approach procedure.

*Note 1. — Operational credit includes:*

- a) *For the purposes of an approach ban (4.1.2), a minima below the aerodrome operating minima;*
- b) *Reducing or satisfying the visibility requirements; or*
- c) *Requiring fewer ground facilities as compensated for by airborne capabilities.*

*Note 2.— Guidance on operational credit for aircraft equipped with automatic landing systems, a HUD or equivalent displays, EVS, SVS and CVS is contained in the Manual of All-Weather Operations SLCAP 4510.*

*Note 3. — Information regarding a HUD or equivalent displays, including references to RTCA and EUROCAE documents, is contained in the Manual of All-Weather Operations SLCAP 4510.*

**2.8.2** A holder of an AOC shall take full account of the following in establishing the aerodrome operating minima which will apply to any particular operation. The operator may use the guidance contained in Manual of All-weather Operations SLCAP 4510 on the establishment of aerodrome operating minima.

- a) The type, performance and handling characteristics of the aeroplane;
- b) The composition of the flight crew, their competence and experience;
- c) The dimensions and characteristics of the runways which may be selected for use;
- d) The adequacy and performance of the available visual and non-visual ground aids;
- e) The equipment available on the aeroplane for the purpose of navigation, acquisition of visual references and/or control of the flight path during the approach, landing and the missed approach;
- f) The obstacles in the approach and missed approach areas and the obstacle clearance altitude/height for the instrument approach procedures;
- g) The means used to determine and report meteorological conditions; and
- h) The obstacles in the climb-out areas and necessary clearance margins.

**2.8.3** Instrument approach operations shall be classified based on the designed lowest operating minima below which an approach operation shall only be continued with the required visual reference as follows:

- a) Type A: a minimum descent height or decision height at or above 75 m (250 ft); and
- b) Type B: a decision height below 75 m (250 ft). Type B instrument approach operations are categorized as:

- 1) Category I (CAT I): a decision height not lower than 60 m (200 ft) and with either a visibility not less than 800 m or a runway visual range not less than 550 m;
- 2) Category II (CAT II): a decision height lower than 60 m (200 ft) but not lower than 30 m (100 ft) and a runway visual range not less than 300 m;
- 3) Category IIIA (CAT IIIA): a decision height lower than 30 m (100 ft) or no decision height and a runway visual range not less than 175 m;
- 4) Category IIIB (CAT IIIB): a decision height lower than 15 m (50 ft) or no decision height and a runway visual range less than 175 m but not less than 50 m; and
- 5) Category IIIC (CAT IIIC): no decision height and no runway visual range limitations.

*Note 1.— Where decision height (DH) and runway visual range (RVR) fall into different categories of operation, the instrument approach operation would be conducted in accordance with the requirements of the most demanding category (e.g. an operation with a DH in the range of CAT IIIA but with an RVR in the range of CAT IIIB would be considered a CAT IIIB operation or an operation with a DH in the range of CAT II but with an RVR in the range of CAT I would be considered a CAT II operation).*

*Note 2. — The required visual reference means that section of the visual aids or of the approach area which should have been in view for sufficient time for the pilot to have made an assessment of the aircraft position and rate of change of position, in relation to the desired flight path. In the case of a circling approach operation, the required visual reference is the runway environment.*

*Note 3.— Guidance on approach classification as it relates to instrument approach operations, procedures, runways and navigation systems is contained in the Manual of All-Weather Operations SLCAP 4510.*

**2.8.4** Category II and Category III instrument approach operations shall not be authorized unless RVR information is provided.

**2.8.5** For instrument approach operations, aerodrome operating minima below 800 m visibility should not be authorized unless RVR information is provided.

**2.8.6** The operating minima for 2D instrument approach operations using instrument approach procedures shall be determined by establishing a minimum descent altitude (MDA) or minimum descent height (MDH), minimum visibility and, if necessary, cloud conditions.

*Note.— For guidance on applying a continuous descent final approach (CDFA) flight technique on non-precision approach procedures, refer to PANS-OPS (Doc 8168), Volume I, Part I, Section 4, Chapter 1, 1.7.*

**2.8.7** The operating minima for 3D instrument approach operations using instrument approach procedures shall be determined by establishing a decision altitude (DA) or decision height (DH) and the minimum visibility or RVR.



## 2.9 Threshold crossing height for 3D instrument approach operations

A holder of an AOC 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.

## 2.10 Fuel and oil records

**2.10.1** A holder of an AOC shall maintain fuel records to enable the DGCA to ascertain that, for each flight, the requirements of 3.6 and 3.7.1 of this IS have been complied with.

**2.10.2** A holder of an AOC shall maintain oil records to enable the DGCA to ascertain that trends for oil consumption are such that an aeroplane has sufficient oil to complete each flight.

**2.10.3** Fuel and oil records shall be retained by the operator for a period of fifteen months (15).

## 2.11 Crew

**2.11.1** Pilot-in-command; for each flight, the operator shall designate one pilot to act as pilot-in-command.

**2.11.2** For each flight of an aeroplane above 15 000 m (49 000 ft), the operator shall maintain records so that the total cosmic radiation dose received by each crew member over a period of 12 consecutive months can be determined.

*Note.* — *Guidance on the maintenance of cumulative radiation records is given in Circular 126 — Guidance Material on SST Aircraft Operations.*

## 2.12 Passengers

**2.12.1** A holder of an AOC shall ensure that passengers are made familiar with the location and use of:

- a) Seat belts;
- b) Emergency exits;
- c) Life jackets, if the carriage of life jackets is prescribed;
- d) Oxygen dispensing equipment, if the provision of oxygen for the use of passengers is prescribed; and
- e) Other emergency equipment provided for individual use, including passenger emergency briefing cards.

**2.12.2** A holder of an AOC shall inform the passengers of the location and general manner of use of the principal emergency equipment carried for collective use.

**2.12.3** A holder of an AOC shall ensure that in an emergency during flight, passengers are instructed in such emergency action as may be appropriate to the circumstances.

**2.12.4** A holder of an AOC shall ensure that, during take-off and landing and whenever, by reason of turbulence or any emergency occurring during flight, the precaution is considered necessary, all passengers on board an aeroplane shall be secured in their seats by means of the seat belts or harnesses provided.

### **3. FLIGHT PREPARATION**

**3.1** A flight shall not be commenced until flight preparation forms have been completed certifying that the pilot-in-command is satisfied that:

- a) The aeroplane is airworthy and the appropriate certificates (i.e. C of A & C of R) are on board the aeroplane;
- b) The instruments and equipment prescribed in Implementing Standards 015, for the particular type of operation to be undertaken, are installed and are sufficient for the flight;
- c) A maintenance release as prescribed in para 8 in Implementing Standards 017 has been issued in respect of the aeroplane;
- d) The mass of the aeroplane and centre of gravity location are such that the flight can be conducted safely, taking into account the flight conditions expected;
- e) Any load carried is properly distributed and safely secured;
- f) A check has been completed indicating that the operating limitations in accordance with the requirements specified in Implementing Standards 014 can be complied with for the flight to be undertaken; and
- g) The Standards of 3.3 of this IS relating to operational flight planning have been complied with.
- h) The flight crew holds appropriate current licences, ratings and other authorizations as required
- i) Operating crew is properly rested and free from fatigue

**3.2** Completed flight preparation forms shall be kept by the Holder of an AOC for a period of fifteen months (15).

### **3.3 Operational flight planning**

**3.3.1** An operational flight plan shall be completed for every intended flight. The operational flight plan shall be approved and signed by the pilot-in-command and, where applicable, signed by the flight operations officer/flight dispatcher, and a copy shall be filed with the operator or a designated agent, or, if these procedures are not possible, it shall be left with the aerodrome authority or on record in a suitable place at the point of departure acceptable to the Director General of Civil Aviation.

*Note.* — *The duties of a flight operations officer/flight dispatcher are contained in paragraph 6 of this IS.*

**3.3.2** The operations manual must describe the content and use of the operational flight plan.

### **3.4 Alternate aerodromes**

#### **3.4.1 Take-off alternate aerodrome**

**3.4.1.1** A take-off alternate aerodrome shall be selected and specified in the operational flight plan if either the meteorological conditions at the aerodrome of departure are below the operator's established aerodrome landing minima for that operation or if it would not be possible to return to the aerodrome of departure for other reasons.

**3.4.1.2** The take-off alternate aerodrome shall be located within the following flight time from the aerodrome of departure:

- a) For aeroplanes with two engines, one hour of flight time at a one-engine-inoperative cruising speed, determined from the aircraft operating manual, calculated in ISA and still-air conditions using the actual take-off mass; or
- b) For aeroplanes with three or more engines, two hours of flight time at an all engines operating cruising speed, determined from the aircraft operating manual, calculated in ISA and still-air conditions using the actual take-off mass; or
- c) For aeroplanes engaged in extended diversion time operations (EDTO) where an alternate aerodrome meeting the distance criteria of a) or b) is not available, the first available alternate aerodrome located within the distance of the operator's approved maximum diversion time considering the actual take-off mass.

**3.4.1.3** For an aerodrome to be selected as a take-off alternate the available information shall indicate that, at the estimated time of use, the conditions will be at or above the operator's established aerodrome operating minima for that operation.

**3.4.2** En-route alternate aerodromes; En-route alternate aerodromes, required by para 7 of this IS for extended diversion time operations by aeroplanes with two turbine engines, shall be selected and specified in the operational and air traffic services (ATS) flight plans.

**3.4.3** Destination alternate aerodromes

**3.4.3.1** For a flight to be conducted in accordance with the instrument flight rules, at least one destination alternate aerodrome shall be selected and specified in the operational and ATS flight plans, unless:

- a) 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 that:
  - 1) The approach and landing may be made under visual meteorological conditions; and
  - 2) Separate runways are usable at the estimated time of use of the destination aerodrome with at least one runway having an operational instrument approach procedure; or
- b) The aerodrome is isolated. Operations into isolated aerodromes do not require the selection of a destination alternate aerodrome(s) and shall be planned in accordance with 3.6.3 d) 4) of this IS;
  - 1) For each flight into an isolated aerodrome a point of no return shall be determined; and
  - 2) 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.

**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. — Guidance on planning operations to isolated aerodromes is contained in the Flight Planning and Fuel Management (FPFM) Manual (Doc 9976).*

**3.4.3.2** Two destination alternate aerodromes shall be selected and specified in the operational and ATS flight plans when, for the destination aerodrome:

- a) Meteorological conditions at the estimated time of use will be below the operator's established aerodrome operating minima for that operation; or
- b) Meteorological information is not available.

**3.4.4** Notwithstanding the provisions in 3.4.1, 3.4.2 and 3.4.3 of this IS , the DGCA may, based on the results of a specific safety risk assessment conducted by the Holder of an AOC which demonstrates how an equivalent level of safety will be maintained, approve operational variations to alternate aerodrome selection criteria. The specific safety risk assessment shall include at least the:

- a) Capabilities of the operator;
- b) Overall capability of the aeroplane and its systems;
- c) Available aerodrome technologies, capabilities and infrastructure;
- d) Quality and reliability of meteorological information;
- e) Identified hazards and safety risks associated with each alternate aerodrome variation; and
- f) Specific mitigation measures.

*Note.— Guidance on performing a safety risk assessment and on determining variations, including examples of variations, is contained in the Flight Planning and Fuel Management (FPFM) Manual (Doc 9976) and the Safety Management Manual (SMM) Gazette Notification number 1882/49 dated 03<sup>rd</sup> October 2014.*

### **3.5. Meteorological conditions**

**3.5.1** A flight to be conducted in accordance with VFR shall not be commenced unless 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, be such as to enable compliance with these rules.

**3.5.2** A flight to be conducted in accordance with the instrument flight rules shall not:

- a) take off from the departure aerodrome unless the meteorological conditions, at the time of use, are at or above the operator's established aerodrome operating minima for that operation; and
- b) take off or continue beyond the point of in-flight re-planning unless at the aerodrome of intended landing or at each alternate aerodrome to be selected in compliance with 3.4 of this IS, current meteorological reports or a combination of current reports and forecasts indicate that the meteorological conditions will be, at the estimated time of use, at or above the operator's established aerodrome operating minima for that operation.

**3.5.3** To ensure that an adequate margin of safety is observed in determining whether or not an approach and landing can be safely carried out at each alternate aerodrome, the operator shall specify appropriate incremental values for height of cloud base and

visibility, acceptable to the DGCA, to be added to the operator's established aerodrome operating minima.

*Note.* — *Guidance on the selection of these incremental values is contained in the Flight Planning and Fuel Management (FPFM) Manual (Doc 9976).*

**3.5.4** DGCA shall approve a margin of time established by the operator for the estimated time of use of an aerodrome.

*Note.* — *Guidance on establishing an appropriate margin of time for the estimated time of use of an aerodrome is contained in the Flight Planning and Fuel Management (FPFM) Manual (Doc 9976).*

**3.5.5** A flight to be operated in known or expected icing conditions shall not be commenced unless the aeroplane is certificated and equipped to cope with such conditions.

**3.5.6** A flight to be planned or expected to operate in suspected or known ground icing conditions shall not take off unless the aeroplane has been inspected for icing and, if necessary, has been given appropriate de-icing/anti-icing treatment. Accumulation of ice or other naturally occurring contaminants shall be removed so that the aeroplane is kept in an airworthy condition prior to take-off.

*Note.* — *Guidance material is given in the Manual of Aircraft Ground De-icing/Anti-icing Operations (ICAO Doc 9640).*

### **3.6 Fuel requirements**

**3.6.1** A Holder of an AOC shall carry a sufficient amount of usable fuel to complete the planned flight safely and to allow for deviations from the planned operation.

**3.6.2** The amount of usable fuel to be carried shall, as a minimum, be based on:

- a) The following data:
  - 1) Current aeroplane-specific data derived from a fuel consumption monitoring system, if available; or
  - 2) If current aeroplane-specific data are not available, data provided by the aeroplane manufacturer; and
- b) The operating conditions for the planned flight including:
  - 1) Anticipated aeroplane mass;
  - 2) Notices to Airmen;
  - 3) Current meteorological reports or a combination of current reports and forecasts;
  - 4) Air traffic services procedures, restrictions and anticipated delays; and
  - 5) The effects of deferred maintenance items and/or configuration deviations.

**3.6.3** The pre-flight calculation of usable fuel required shall include:

- a) Taxi fuel, which shall be the amount of fuel expected to be consumed before take-off, taking into account local conditions at the departure aerodrome and auxiliary power unit (APU) fuel consumption;

- b) trip fuel, which shall be the amount of fuel required to enable the 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 of 3.6.2 b);
- c) Contingency fuel, which shall be the amount of fuel required to compensate for unforeseen factors. It shall be five 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 five minutes at holding speed at 450 m (1 500 ft) above the destination aerodrome in standard conditions;

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

- d) Destination alternate fuel, which shall be:
  - 1) Where a destination alternate aerodrome is required, the amount of fuel required to enable the aeroplane to:
    - i) Perform a missed approach at the destination aerodrome;
    - ii) Climb to the expected cruising altitude;
    - iii) Fly the expected routing;
    - iv) Descend to the point where the expected approach is initiated; and
    - v) Conduct the approach and landing at the destination alternate aerodrome; or
  - 2) where two destination alternate aerodromes are required, the amount of fuel, as calculated in 3.6.3 d) 1) of this IS , required to enable the aeroplane to proceed to the destination alternate aerodrome which requires the greater amount of alternate fuel; or
  - 3) where a flight is operated without a destination alternate aerodrome, the amount of fuel required to enable the aeroplane to fly for 15 minutes at holding speed at 450 m (1 500 ft) above destination aerodrome elevation in standard conditions; or
  - 4) Where the aerodrome of intended landing is an isolated aerodrome:
    - i) For a reciprocating engine 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
    - ii) For a turbine-engined aeroplane, the amount of fuel required to fly for two hours at normal cruise consumption above the destination aerodrome, including final reserve fuel;
- e) Final reserve fuel, which shall be the amount of fuel calculated using the estimated mass on arrival at the destination alternate aerodrome, or the destination aerodrome when no destination alternate aerodrome is required:
  - 1) For a reciprocating engine aeroplane, the amount of fuel required to fly for 45 minutes, under speed and altitude conditions specified by the DGCA; or
  - 2) 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;

- f) Additional fuel, which shall be the supplementary amount of fuel required if the minimum fuel calculated in accordance with 3.6.3 b), c), d) and e) of this IS is not sufficient to:
- 1) Allow the aeroplane to descend as necessary and proceed to an alternate aerodrome in the event of engine failure or loss of pressurization, whichever requires the greater amount of fuel based on the assumption that such a failure occurs at the most critical point along the route;
    - i) Fly for 15 minutes at holding speed at 450 m (1 500 ft) above aerodrome elevation in standard conditions; and
    - ii) Make an approach and landing;
  - 2) Allow an aeroplane engaged in EDTO to comply with the EDTO critical fuel scenario as established by the DGCA;
  - 3) Meet additional requirements not covered above;

*Note 1.* — *Fuel planning for a failure that occurs at the most critical point along a route (3.6.3 f) 1)) may place the aeroplane in a fuel emergency situation based on 3.7.2 of this IS.*

*Note 2.* — *Guidance on EDTO critical fuel scenarios are contained in SLCAP 4525.*

- g) Discretionary fuel, which shall be the extra amount of fuel to be carried at the discretion of the pilot-in-command.

**3.6.4** A Holder of an AOC should determine one final reserve fuel value for each aeroplane type and variant in their fleet rounded up to an easily recalled figure.

**3.6.5** A flight shall not commence unless the usable fuel on board meets the requirements in 3.6.3 a), b), c), d), e) and f) if required and shall not continue from the point of in-flight re-planning unless the usable fuel on board meets the requirements in 3.6.3 b), c), d), e) and f) of this IS if required.

**3.6.6** Notwithstanding the provisions in 3.6.3 a), b), c), d) and f) of this IS, the DGCA may, based on the results of a specific safety risk assessment conducted by the operator which demonstrates how an equivalent level of safety will be maintained, approve variations to the pre-flight fuel calculation of taxi fuel, trip fuel, contingency fuel, destination alternate fuel, and additional fuel. The specific safety risk assessment shall include at least the:

- a) Flight fuel calculations;
- b) Capabilities of the operator to include:
  - i) A data-driven method that includes a fuel consumption monitoring programme; and/or
  - ii) The advanced use of alternate aerodromes; and
- c) Specific mitigation measures.

*Note.*— *Guidance on the specific safety risk assessment, fuel consumption monitoring programmes and the advanced use of alternate aerodromes is contained in the Flight Planning and Fuel Management (FPFM) Manual (Doc 9976).*

**3.6.7** The use of fuel after flight commencement for purposes other than originally intended during pre-flight planning shall require a re-analysis and, if applicable, adjustment of the planned operation.

*Note.*— *Guidance on procedures for in-flight fuel management including re-analysis, adjustment and/or re-planning considerations when a flight begins to consume contingency fuel before take-off is contained in the Flight Planning and Fuel Management (FPFM) Manual (ICAO Doc 9976).*

### **3.7 In-flight fuel management**

**3.7.1** A Holder of an AOC shall establish policies and procedures, approved by the DGCA, to ensure that in-flight fuel checks and fuel management are performed.

**3.7.2** The pilot-in-command shall continually ensure that the amount of usable fuel remaining on board is not less than the fuel required to proceed to an aerodrome where a safe landing can be made with the planned final reserve fuel remaining upon landing.

*Note.* — *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 the Flight Planning and Fuel Management (FPFM) Manual (ICAO Doc 9976).*

**3.7.2.1** The pilot-in-command shall request delay information from ATC when unanticipated circumstances may result in landing at the destination aerodrome with less than the final reserve fuel plus any fuel required to proceed to an alternate aerodrome or the fuel required to operate to an isolated aerodrome.

**3.7.2.2** The pilot-in-command shall advise ATC of a minimum fuel state by declaring MINIMUM FUEL when, having committed to land at a specific aerodrome, the pilot calculates that any change to the existing clearance to that aerodrome may result in landing with less than the planned final reserve fuel.

*Note 1.* — *The declaration of MINIMUM FUEL informs ATC that all planned aerodrome options have been reduced to a specific aerodrome of intended landing and any change to the existing clearance may result in landing with less than the planned final reserve fuel. This is not an emergency situation but an indication that an emergency situation is possible should any additional delay occur.*

*Note 2.* — *Guidance on declaring minimum fuel is contained in the Flight Planning and Fuel Management (FPFM) Manual (ICAO Doc 9976).*

**3.7.2.3** The pilot-in-command shall declare a situation of fuel emergency by broadcasting MAYDAY MAYDAY MAYDAY FUEL, when the calculated usable fuel predicted to be available upon landing at the nearest aerodrome where a safe landing can be made is less than the planned final reserve fuel.

*Note 1.* — *The planned final reserve fuel refers to the value calculated in 3.6.3 e) 1) or 2) and is the minimum amount of fuel required upon landing at any aerodrome.*

*Note 2.* — *The words “MAYDAY FUEL” describe the nature of the distress conditions as required in Annex 10, Volume II, 5.3.2.1.1 b) 3.*



*Note 3. — Guidance on procedures for in-flight fuel management is contained in the Flight Planning and Fuel Management (FPFM) Manual (ICAO Doc 9976).*

### **3.8 Refueling with passengers on board**

**3.8.1** An aeroplane shall not be refueled when passengers are embarking, on board or disembarking unless it is properly attended by qualified personnel ready to initiate and direct an evacuation of the aeroplane by the most practical and expeditious means available. This requirement does not necessarily require the deployment of integral aeroplane stairs or the opening of emergency exits as a prerequisite to refueling.

**3.8.2** When refueling with passengers embarking, on board or disembarking, two-way communication shall be maintained by the aeroplane's inter-communication system or other suitable means between the ground crew supervising the refueling and the qualified personnel on board the aeroplane.

*Note 1. — The provisions of 3.8.1 of this IS do not necessarily require the deployment of integral aeroplane stairs or the opening of emergency exits as a prerequisite to refueling.*

*Note 2. — Provisions concerning aircraft refueling are contained in Annex 14, Volume I, and guidance on safe refueling practices is contained in the Airport Services Manual, (Doc 9137), Parts 1 and 8.*

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

### **3.9 Oxygen supply**

*Note. — Approximate altitudes in the Standard Atmosphere corresponding to the values of absolute pressure used in the text are as follows:*

<i>Absolute pressure</i>	<i>Metres</i>	<i>Feet</i>
700 hPa	3 000	10 000
620 hPa	4 000	13 000
376 hPa	7 600	25 000

**3.9.1** A flight to be operated at flight altitudes at which the atmospheric pressure in personnel compartments will be less than 700 hPa shall not be commenced unless sufficient stored breathing oxygen is carried to supply:

- a) All crew members and 10 per cent of the passengers for any period in excess of 30 minutes that the pressure in compartments occupied by them will be between 700 hPa and 620 hPa; and
- b) The crew and passengers for any period that the atmospheric pressure in compartments occupied by them will be less than 620 hPa.

**3.9.2** A flight to be operated with a pressurized aeroplane shall not be commenced unless a sufficient quantity of stored breathing oxygen is carried to supply all the crew members and passengers, as is appropriate to the circumstances of the flight being undertaken,

in the event of loss of pressurization, for any period that the atmospheric pressure in any compartment occupied by them would be less than 700 hPa.

In addition, when an aeroplane is operated at flight altitudes at which the atmospheric pressure is less than 376 hPa, or which, if operated at flight altitudes at which the atmospheric pressure is more than 376 hPa and cannot descend safely within four minutes to a flight altitude at which the atmospheric pressure is equal to 620 hPa, there shall be no less than a 15 minute supply for the occupants of the passenger compartment.

### **3.10 Time capability of cargo compartment fire suppression system**

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

*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 Chapter 7 of this IS and EDTO manual SLCAP-4525, for considerations of time capability of cargo compartment fire suppression systems for aeroplanes engaged in EDTO.*

## **4. IN-FLIGHT PROCEDURES**

### **4.1 Aerodrome operating minima**

**4.1.1** A flight shall not be continued towards the aerodrome of intended landing, unless the latest available information indicates that at the expected time of arrival, a landing can be effected at that aerodrome or at least one destination alternate aerodrome, in compliance with the operating minima established in accordance with 2.8.1 of this IS.

**4.1.2** An instrument approach shall not be continued below 300 m (1 000 ft) above the aerodrome elevation or into the final approach segment unless the reported visibility or controlling RVR is at or above the aerodrome operating minima.

*Note.* — *Criteria for the final approach segment is contained in PANS-OPS (Doc 8168), Volume II.*

**4.1.3** If, after entering the final approach segment or after descending below 300 m (1 000 ft) above the aerodrome elevation, the reported visibility or controlling RVR falls below the specified minimum, the approach may be continued to DA/H or MDA/H. In any case, an aeroplane shall not continue its approach-to-land at any aerodrome beyond a point at which the limits of the operating minima specified for that aerodrome would be infringed.

*Note.* — *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.*

#### **4.2 Meteorological observations**

*Note.— The operator or the agency providing meteorological observations shall be guided by the procedures for making meteorological observations on board aircraft in flight and for recording and reporting them are contained in the PANS-ATM (Doc 4444) and the appropriate Regional Supplementary Procedures (Doc 7030).*

#### **4.3 Meteorological information**

Operator's procedures to ensure following.

- (a) Aircraft observations and reports  
 Meteorological observations to be made by aircraft, operating on international air routes and for the recording and reporting of these observations.
- (1) Routine aircraft observations during en-route and climb-out phases of the flight; and
  - (2) Special and other non-routine aircraft observations during any phase of the flight.

*Note – Procedure to be in compliance with “PANS-OPS (Doc 8168), Volume II. (Meteorological service for international air navigation)*

- (b) Special aircraft observations  
 Special observations to be made by all aircraft whenever the following conditions are encountered or observed.
- (1) Severe turbulence; or
  - (2) Severe icing; or
  - (3) Severe mountain waves; or
  - (4) Thunder storms without hail, that are obscured, embedded, widespread or in squall lines; or
  - (5) Thunder storms, with hail, that are obscured, embedded, wide spread or in squall lines; or
  - (6) Heavy dust storm or heavy sand storm; or
  - (7) Volcanic ash cloud; or
  - (8) Pre-eruption volcanic activity or a volcanic eruption.

*Note – Pre-eruption volcanic activity in this context means unusual and/or increasing volcanic activity which could presage a volcanic eruption.*

- (c) Other non-routine aircraft observations

When other meteorological conditions not listed under paragraph 3.5 (b), e.g. wind shear, are encountered and which, in the opinions of the pilot-in-command, may affect the safety or markedly affect the efficiency of other aircraft operations, the pilot-in-command shall advise the appropriate air traffic services unit as soon as practicable.

*Note 1. Icing, turbulence and, to a large extent, wind shear are elements which, for the time being, cannot be satisfactorily observed from the ground and for which in most cases aircraft observations represent the only the only available evidence.*

*Note 2: All reportable incidents mentioned above shall be forwarded to DGCA in compliance to IS 006 Aviation Occurrences Reporting System.*

#### **4.4 Hazardous flight conditions**

An operator shall ensure that procedures are in place for hazardous flight conditions encountered such as volcanic ash, other than those associated with meteorological conditions, shall be reported to the appropriate aeronautical station as soon as possible. The reports so rendered shall give such details as may be pertinent to the safety of other aircraft.

#### **4.5 Flight crew members at duty stations**

**4.5.1 Take-off and landing.** All flight crew members required to be on flight deck duty shall be at their stations.

**4.5.2 En route.** All flight crew members required to be on flight deck duty shall remain at their stations except when their absence is necessary for the performance of duties in connection with the operation of the aeroplane or for physiological needs.

**4.5.3 Seat belts.** All flight crew members shall keep their seat belts fastened when at their stations.

**4.5.4 Safety harness.** Any flight crewmember occupying a pilot's seat shall keep the safety harness fastened during the take-off and landing phases; all other flight crew members shall keep their safety harnesses fastened during the take-off and landing phases unless the shoulder straps interfere with the performance of their duties, in which case the shoulder straps may be unfastened but the seat belt must remain fastened.

*Note. — Safety harness includes shoulder straps and a seat belt which may be used independently.*

#### **4.6 Use of oxygen**

**4.6.1** All flight crew members, when engaged in performing duties essential to the safe operation of an aeroplane in flight, shall use breathing oxygen continuously whenever the circumstances prevail for which its supply has been required in 3.9.1 or 3.9.2 of this IS .

**4.6.2** All flight crew members of pressurized aeroplanes operating above an altitude where the atmospheric pressure is less than 376 hPa shall have available at the flight duty station a quick-donning type of oxygen mask which will readily supply oxygen upon demand.

#### **4.7 Safeguarding of cabin crew and passengers in pressurized aeroplanes in the event of loss of pressurization**

Cabin crew should be safeguarded so as to ensure reasonable probability of their retaining consciousness during any emergency descent which may be necessary in the event of loss of pressurization and, in addition, they should have such means of protection as will enable them to administer first aid to passengers during stabilized flight following the emergency. Passengers should be safeguarded by such devices or operational procedures as will ensure reasonable probability of their surviving the effects of hypoxia in the event of loss of pressurization.

*Note.* — *It is not envisaged that cabin crew will always be able to provide assistance to passengers during emergency descent procedures which may be required in the event of loss of pressurization.*

#### **4.8 In-flight operational instructions**

Operational instructions involving a change in the ATS flight plan shall, when practicable, be coordinated with the appropriate ATS unit before transmission to the aeroplane.

*Note.* — *When the above coordination has not been possible, operational instructions do not relieve a pilot of the responsibility for obtaining an appropriate clearance from an ATS unit, if applicable, before making a change in flight plan.*

#### **4.9 Instrument flight procedures**

**4.9.1** One or more instrument approach procedures designed in accordance with the classification to support instrument approach operations shall be approved and promulgated by the DGCA in which the aerodrome is located to serve each instrument runway or aerodrome utilized for instrument flight operations.

**4.9.2** All aeroplanes operated in accordance with instrument flight rules shall comply with the instrument flight procedures approved by the DGCA in which the aerodrome is located.

*Note 1.* — *Definition for the classification of instrument approach (IAP) and landing operations (LDA) are in Implementing Standards 011.*

*Note 2.* — *See 2.8.3 of this IS of for instrument approach operation classifications.*

*Note 3.* — *Information for pilots on flight procedure parameters and operational procedures is contained in PANS-OPS (Doc 8168), Volume I. Criteria for the construction of instrument flight procedures for the guidance of procedure specialists are provided in PANS-OPS (Doc 8168), Volume II. Obstacle clearance criteria and procedures used in certain States may differ from PANS-OPS, and knowledge of these differences is important for safety reasons.*

#### **4.10 Aeroplane operating procedures for noise abatement**

**4.10.1** Aeroplane operating procedures for noise abatement should comply with the provisions of PANS-OPS (Doc 8168), Volume I.

- 4.10.2** Noise abatement procedures specified by the operator for any one aeroplane type should be the same for all aerodromes.

*Note.* — *A single procedure may not satisfy the requirements at some aerodromes.*

#### **4.11 Aeroplane operating procedures for rates of climb and descent**

Unless otherwise specified in an air traffic control instruction, to avoid unnecessary airborne collision avoidance system (ACAS II) resolution advisories in aircraft at or approaching adjacent altitudes or flight levels, operators should specify procedures by which an aeroplane climbing or descending to an assigned altitude or flight level, especially with an autopilot engaged, may do so at a rate less than 8 m/sec or 1 500 ft/min (depending on the instrumentation available) throughout the last 300 m (1 000 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 flight level.

*Note.* — *Material concerning the development of these procedures is contained in the PANS-OPS (Doc 8168) Volume I, Part III, Section 3, Chapter 3.*

### **5. DUTIES OF PILOT-IN-COMMAND**

- 5.1** The pilot-in-command shall be responsible for the safety of all crew members, passengers and cargo on board when the doors are closed. The pilot-in-command shall also be responsible for the operation and safety of the aeroplane from the moment the aeroplane is ready to move for the purpose of taking off until the moment it finally comes to rest at the end of the flight and the engine(s) used as primary propulsion units are shut down.
- 5.2** The pilot-in-command shall ensure that the checklists specified in 2.6 of this IS are complied with in detail.
- 5.3** The pilot-in-command shall be responsible for notifying the nearest appropriate authority by the quickest available means of any accident involving the aeroplane, resulting in serious injury or death of any person or substantial damage to the aeroplane or property.

*Note.* — *A definition of the term “serious injury” is contained in Gazette Notification number 1742/19 dated 25<sup>th</sup> January 2012.*

- 5.4** The pilot-in-command shall be responsible for reporting all known or suspected defects in the aeroplane, to the operator, at the termination of the flight.
- 5.5** The pilot-in-command shall be responsible for the journey log book and the general declaration containing the information listed in 4.1 of Implementing Standards 020.

*Note.* — *By virtue of Resolution A10-36 of the Tenth Session of the Assembly (Caracas, June–July 1956) “the General Declaration, [described in ICAO Annex 9] when prepared so as to contain all the information required by Article 34 [of the Convention on International Civil Aviation] with respect to the journey log book, may be considered by DGCA to be an acceptable form of journey log book”.*

## **6. DUTIES OF FLIGHT OPERATIONS OFFICER/FLIGHT DISPATCHER**

**6.1** A flight operations officer/flight dispatcher in conjunction with a method of control and supervision of flight operations in accordance with 2.1.3 of this IS shall:

- a) Assist the pilot-in-command in flight preparation and provide the relevant information;
- b) Assist the pilot-in-command in preparing the operational and ATS flight plans, sign when applicable and file the ATS flight plan with the appropriate ATS unit;
- c) Furnish the pilot-in-command while in flight, by appropriate means, with information which may be necessary for the safe conduct of the flight; and
- d) 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.

**6.2** In the event of an emergency, a flight operations officer/flight dispatcher shall:

- a) initiate such procedures as outlined in the operations manual while avoiding taking any action that would conflict with ATC procedures; and
- b) Convey safety-related information to the pilot-in-command that may be necessary for the safe conduct of the flight, including information related to any amendments to the flight plan that become necessary in the course of the flight.

*Note.* — *It is equally important that the pilot-in-command also convey similar information to the flight operations officer/ flight dispatcher during the course of the flight, particularly in the context of emergency situations.*

## **7. ADDITIONAL REQUIREMENTS FOR OPERATIONS BY AEROPLANES WITH TURBINE ENGINES BEYOND 60 MINUTES TO AN EN-ROUTE ALTERNATE AERODROME INCLUDING EXTENDED DIVERSION TIME OPERATIONS (EDTO)**

**7.1 Requirements for operations beyond 60 minutes to an en-route alternate aerodrome**

**7.1.1** Operators conducting operations beyond 60 minutes from a point on a route to an en-route alternate aerodrome shall ensure that:

- a) For all aeroplanes:
  - 1) En-route alternate aerodromes are identified; and
  - 2) The most up-to-date information is provided to the flight crew on identified en-route alternate aerodromes, including operational status and meteorological conditions;
- b) 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.

*Note.* — *Guidance on compliance with the requirements of these provisions is contained in ETDO Manual SLCAP 4525.*

**7.1.2** In addition to the requirements in 7.1.1 of this IS, all operators shall ensure that the following are taken into account and provide the overall level of safety intended by the provisions of published requirements by the DGCA in reference to the following:

- a) Operational control and flight dispatch procedures;
- b) Operating procedures; and
- c) Training programmes.

## **7.2 Requirements for extended diversion time operations (EDTO)**

**7.2.1** Unless the operation has been specifically approved by the DGCA, an aeroplane with two or more turbine engines shall not be operated on a route where the diversion time to an en-route alternate aerodrome from any point on the route, calculated in ISA and still-air conditions at the one-engine-inoperative cruise speed for aeroplanes with two turbine engines and at the all engines operating cruise speed for aeroplanes with more than two turbine engines, exceeds a threshold time established for such operations by that DGCA.

*Note 1.* — *When the diversion time exceeds the threshold time, the operation is considered to be an extended diversion time operation (EDTO).*

*Note 2.* — *Guidance on the establishment of an appropriate threshold time and on approval of extended diversion time operations is contained in SLCAP 4525.*

*Note 3.* — *For the purpose of EDTO, the take-off and/or destination aerodromes may be considered en-route alternate aerodromes.*

**7.2.2** The maximum diversion time for the operator of a particular aeroplane type engaged in extended diversion time operations shall be approved by the DGCA.

*Note.* — *Guidance on the conditions to be used when converting diversion times to distances is contained in SLCAP 4525, Attachment A.*

**7.2.3** When approving the appropriate maximum diversion time for the operator for a particular aeroplane type engaged in extended diversion time operations, the DGCA shall ensure that:

- a) For all aeroplanes: the most limiting EDTO significant system time limitation, if any, indicated in the aeroplane flight manual (directly or by reference) and relevant to that particular operation is not exceeded; and
- b) For aeroplanes with two turbine engines: the aeroplane is EDTO certified.

*Note 1.* — *EDTO may be referred to as ETOPS in some documents.*

*Note 2.* — *Guidance on compliance with the requirements of this provision is contained in SLCAP 4525.*

**7.2.3.1** Notwithstanding the provisions in 7.2.3 a) of this IS, the DGCA may, based on the results of a specific safety risk assessment conducted by the operator which demonstrates how an equivalent level of safety will be maintained, approve operations beyond the time limits of the most time-limited system. The specific safety risk assessment shall include at least the:



- a) Capabilities of the operator;
- b) Overall reliability of the aeroplane;
- c) Reliability of each time-limited system;
- d) Relevant information from the aeroplane manufacturer; and
- e) Specific mitigation measures.

*Note.* — *Guidance on the specific safety risk assessment is contained in SLCAP 4525.*

- 7.2.4** For aeroplanes engaged in EDTO, the additional fuel required by 3.6.3 f) 2) of this IS shall include the fuel necessary to comply with the EDTO critical fuel scenario as established by the DGCA.

*Note.* — *Guidance on compliance with the requirements of this provision is in SLCAP 4525.*

- 7.2.5** A flight shall not proceed beyond the threshold time in accordance with 4.7.2.1 of this IS unless the identified en-route alternate aerodromes have been re-evaluated for availability and the most up-to-date information indicates that, during the estimated time of use, conditions at those aerodromes will be at or above the operator's established aerodrome operating minima for the operation. If any conditions are identified that would preclude a safe approach and landing at that aerodrome during the estimated time of use, an alternative course of action shall be determined.

- 7.2.6** The DGCA shall, when approving maximum diversion times for aeroplanes with two turbine engines, ensure that the following are taken into account in providing the overall level of safety intended by the provisions of Implementing Standards IS 062.

- a) Reliability of the propulsion system;
- b) Airworthiness certification for EDTO of the aeroplane type; and
- c) EDTO maintenance programme.

*Note 1.* — *EDTO may be referred to as ETOPS in some documents.*

*Note 2.* — *Refer Implementing Standards IS 080 (Requirements for continuous Airworthiness).*

- 7.2.7** The DGCA should give consideration to continue operation of an aeroplane type with two turbine engines which, prior to 25 March 1986, was authorized and operating on a route where the flight time at one-engine-inoperative cruise speed to an en-route alternate aerodrome exceeded the threshold time established for such operations in accordance with 7.2.1 of this IS.

## **8. CARRY-ON BAGGAGE**

A holder of an AOC shall ensure that all baggage carried onto an aeroplane and taken into the passenger cabin is adequately and securely stowed.

## **9. ADDITIONAL REQUIREMENTS FOR SINGLE PILOT OPERATIONS UNDER THE INSTRUMENT FLIGHT RULES (IFR) OR AT NIGHT**

- 9.1** An aeroplane shall not be operated under the IFR or at night by a single pilot unless approved by the DGCA.

- 9.2** An aeroplane shall not be operated under the IFR or at night by a single pilot unless:
- a) The flight manual does not require a flight crew of more than one;
  - b) The aeroplane is propeller-driven;
  - c) The maximum approved passenger seating configuration is not more than nine;
  - d) The maximum certificated take-off mass does not exceed 5 700 kg;
  - e) The aeroplane is equipped as described in paragraph 22 of implementing Standards 015 – requirements for aircraft instruments, Equipment and Flight Documents for Commercial Air Transport Operations.; and
  - f) The pilot-in-command has satisfied requirements of experience, training, checking and recency described in paragraph 4.5 of Implementing Standards 018 – Requirements for Flight Crew for Commercial Air Transport Operations.

## **10. FATIGUE MANAGEMENT**

*Note. — Guidance on the development and implementation of fatigue management regulations is contained in the Manual for the Oversight of Fatigue Management Approaches (Doc 9966), and Implementing Standards 054 and SLCAP 4210.*

- 10.1** The requirements for managing fatigue are specified in SLCAP 4210 published by the DGCA. These requirements 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. Accordingly, the SLCAP 4210 specifies;
- a) Requirements for flight time, flight duty period, duty period and rest period limitations; and
  - b) Where authorizing an operator to use a Fatigue Risk Management System (FRMS) to manage fatigue, FRMS requirements.

*Note: - as CAASL has not published requirements for FRMS, a holder of an AOC shall ensure that prescriptive limitations as published in IS 054 by DGCA is complied with for managing fatigue on crewmembers.*

- 10.2** A holder of an AOC shall be in compliance with 10.1 of this IS and for the purposes of managing its fatigue-related safety risks, establish either:
- a) Flight time, flight duty period, duty period and rest period limitations that are within the prescriptive fatigue management requirements established by the DGCA; or
  - b) A Fatigue Risk Management System (FRMS) in compliance with 10.6 of this IS for all operations; or
  - c) A FRMS in compliance with 10.6 of this IS for part of its operations and the requirements of 10.2 a) of this IS for the remainder of its operations. (Please refer note on FRMS)
- 10.3** Where the operator adopts prescriptive fatigue management regulations for part or all of its operations, the DGCA 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.

**10.4** The DGCA shall approve the 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.

**10.5** DGCA will ensure that an operator's FRMS, provides a level of safety equivalent to, or better than, the prescriptive fatigue management regulations and the DGCA will;

- a) Require that the operator establish maximum values for flight times and/or flight duty periods(s) and duty period(s), and minimum values for rest periods. These values shall be based upon scientific principles and knowledge, subject to safety assurance processes, and acceptable to the DGCA;
- b) Mandate a decrease in maximum values and an increase in minimum values in the event that the operator's data indicates these values are too high or too low, respectively; and
- c) Approve any increase in maximum values or decrease in minimum values only after evaluating the operator's justification for such changes, based on accumulated FRMS experience and fatigue-related data.

*Note.* — refer note on 10.1

**10.6** Where the operator implements an FRMS to manage fatigue-related safety risks, the operator shall, as a minimum:

- a) Incorporate scientific principles and knowledge within the FRMS;
- b) Identify fatigue-related safety hazards and the resulting risks on an ongoing basis;
- c) Ensure that remedial actions, necessary to effectively mitigate the risks associated with the hazards, are implemented promptly;
- d) Provide for continuous monitoring and regular assessment of the mitigation of fatigue risks achieved by such actions; and
- e) Provide for continuous improvement to the overall performance of the FRMS.

*Note.* — Detailed requirements for an FRMS are in Implementing Standards 054.

*Note.* — Provision on the Protection of safety data, safety information and related sources are contained in Gazette Notification number 1882/49 dated 03ed October 2014.

**10.7** DGCA may require that, where an operator has a FRMS, it is integrated with the operator's SMS.

*Note.* — The integration of FRMS and SMS is described in the Manual for the Oversight of Fatigue Management Approaches (Doc 9966).

**10.8** The operator shall maintain records for all its flight and cabin crew members of flight time, flight duty periods, duty periods, and rest periods for a period of fifteen Calendar months (15 months).

## Appendix 1

### RESCUE AND FIRE FIGHTING SERVICES (RFFS) LEVELS

#### 1. Purpose and scope

##### 1.1. Introduction

The purpose of this Appendix is to provide guidance for assessing the level of RFFS deemed acceptable by aeroplane operators using aerodromes for different purposes.

##### 1.2. Basic concepts

**1.2.1.** While all aeroplane operators should aim to have the level of RFFS protection required by Annex 14, Volume I, Chapter 9, 9.2, some of the aerodromes currently used do not meet these requirements. Furthermore, Annex 14, Volume I provisions relates to the level of aerodrome RFFS to be provided for aeroplanes normally using an aerodrome.

**1.2.2.** If an aerodrome is exposed to a temporary reduction of its RFFS capability, Annex 14, Volume I, 2.11.3 requires that: “Changes in the level of protection normally available at an aerodrome for rescue and firefighting shall be notified to the appropriate air traffic services units and aeronautical information services units to enable those units to provide the necessary information to arriving and departing aircraft. When such a change has been corrected, the above units shall be advised accordingly.”

**1.2.3.** The following guidance is intended to assist operators in making the assessment required by paragraph 4.1.4 of this Implementing Standard. It is not intended that this guidance limit or regulate the operation of an aerodrome.

#### 2. Glossary of terms

**2.1. Aerodrome RFFS category.** The RFFS category for a given aerodrome, as published in the appropriate Aeronautical Information Publication (AIP).

**2.2. Aeroplane RFFS category.** The category derived from Annex 14, Volume I, Table 9-1 for a given aeroplane type.

**2.3. RFFS category.** Rescue and firefighting services category as defined in Annex 14, Volume I, Chapter 9.

**2.4. Temporary downgrade.** RFFS category as notified, including by NOTAM, and resulting from the downgrade of the level of RFFS protection available at an aerodrome, for a period of time not exceeding 72 hours.

### 3. Minimum acceptable aerodrome RFFS category

#### 3.1. Planning

**3.1.1.** In principle, the published RFFS category for each of the aerodromes used for a given flight should be equal to or better than the aeroplane RFFS category. However, if the aeroplane RFFS category is not available at one or more of the aerodromes required to be specified in the operational flight plan, an operator should ensure that the aerodrome has the minimum level of RFFS which is deemed acceptable for the intended use in accordance with the instructions contained in the operations manual. When establishing acceptable levels of minimum RFFS for these situations, the operator may use the criteria in Table below.

**3.1.1.1.** Intended operations to aerodromes with RFFS categories below the levels specified in Annex 14, Volume I, Chapter 9, 9.2 should be coordinated between the aeroplane operator and the aerodrome operator.

#### Minimum acceptable aerodrome category for rescue and fire fighting

Aerodromes (Required to be specified in the operational flight plan) <sup>(1)</sup>	Minimum acceptable aerodrome RFFS category (Based on published aerodrome RFFS category)
Departure and destination aerodrome	RFFS category for each aerodrome should be equal to or better than the aeroplane RFFS category. <b>One</b> category <sup>(2)</sup> below the aeroplane RFFS category may be accepted where provided as a remission in accordance with Annex 14, Volume I, Chapter 9, 9.2, but not lower than Category 4 for aeroplanes with maximum certificated take-off mass of over 27 000 kg and not lower than Category 1 for other aeroplanes.
Departure and destination aerodrome in case of temporary downgrade and Take-off alternate, destination alternate and en-route alternate	<b>Two</b> categories below the aeroplane RFFS category, but not lower than Category 4 for aeroplanes with maximum certificated take-off mass of over 27 000 kg and not lower than Category 1 for other aeroplanes.
ETOPS en-route alternate aerodrome	RFFS Category 4 for aeroplanes with maximum certificated take-off mass of over 27 000 kg or not lower than Category 1 for all other aeroplanes, under the condition that at least 30 minutes' notice will be given to the aerodrome operator prior to the arrival of the

**Notes: -**

- (1) *If an individual aerodrome serves more than one purpose, the highest required category corresponding to that purpose at the time of expected use applies.*
- (2) *Annex 14, Volume I, determines the aerodrome category for rescue and firefighting according to 9.2.5 and 9.2.6 except that, where the number of movements of the aeroplanes in the highest category normally using the aerodrome is less than 700 in the busiest consecutive three months, the category provided may be one lower than the determined category.*

**3.1.2.** For all-cargo operations, further reductions might be acceptable provided that the RFFS capability is adequate to arrest fire around the flight deck area long enough for the persons on board to safely evacuate the aeroplane.

**3.2. In flight**

**3.2.1.** In flight, the pilot-in-command may decide to land at an aerodrome regardless of the RFFS category if, in the pilot's judgment after due consideration of all prevailing circumstances, to do so would be safer than to divert.