FLIGHT OPERATIONS DIRECTIVE

ORGANISATION REQUIREMENTS FOR AIR OPERATIONS

60OR-16

Issue 3

Amendment 1

INTRODUCTION

In exercise of the powers conferred by section 24O of the Civil Aviation Act 1969 *[Act* 3], the Chief Executive Officer makes this Flight Operations Directive ("FOD") Organisation Requirements for Air Operations (ORO).

This Directive contains the standards, requirements and procedures pertaining to the provision for Air Operations. The standards and requirements in this Directive are based mainly on standards and recommended practices (SARPs) stipulated in International Civil Aviation Organisation (ICAO) Annex 6 to the Chicago Convention - Operation of Aircraft.

This Directive is published by the Chief Executive Officer under section 240 of the Civil Aviation Act 1969 *[Act* 3] and come into operation on 15 July 2019.

Non-compliance with this Directive

Any person who contravenes any provision in this Directive commits an offence and shall on conviction be liable to the punishment under section 24o of the Civil Aviation Act 1969 [Act 3].

(Dr Zainul Fuad Md Wahi)
Acting Chief Executive Office
***for* Civil Aviation Authority of Malaysia**
20 April 2020

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AMENDMENT RECORDS

Number	Date of Issuance	Effective Date	Inserted By
ORO.AOC.111	06 March 2020	09 March 2020	Captain Zulkifl bin Abdul Hadi

CIVIL AVIATION ACT 1969
FLIGHT OPERATIONS DIRECTIVE - ORGANISATION REQUIREMENTS FOR AIR OPERATIONS (ORO)

1. CITATION

This FOD may be cited as the Flight Operations Directive – Organisation Requirements For Air Operations (ORO)(60OR-16).

2. APPLICATION

(a) The following person shall be subject to this FOD:

(i) operator; and

(ii) crew.

(b) This FOD shall apply to commercial air transport (CAT).

SUBPART GEN
GENERAL REQUIREMENTS

ORO.GEN.110 Operator's responsibilities

(a) The operator shall—

(1) satisfy the CAAM that it is able, fit and competent to conduct safe operations;

(2) not operate base, hub and station without an approval from the CAAM;

(3) perform CAT over domestic and international routes as specified in the OM Part C and route(s) as approved by the CAAM;

(4) operate aircraft in accordance with the provisions of the operations specification;

(5) comply with direction, order, instruction, requirement given by the Chief Executive Officer or by an authorized officer;

(6) establish and maintain a system for operational control over its flights;

(7) ensure its crew is qualified for the area and type of operations as approved by the CAAM;

(8) ensure that its personnel are properly instructed, have demonstrated their abilities in their particular duties and are aware of their responsibilities and the relationship of such duties to the operation as a whole;

(9) ensure that its personnel comply with the Malaysian legislations and procedures and of those States in relation to the operations and related to the performance of their duties;

(10) comply with the provisions of the Aircraft Flight Manual ("AFM") or equivalent document and other manuals approved by the CAAM;

(11) to have an adequate and sound financial practice to ensure operational and maintenance cost and expenditure are covered; and

(12) pay all fees and charges as required under the Civil Aviation (Fees and Charges) Regulations 2016 and such other fees and charges as may be determined by the Minister.

(b) The operator is required to provide ground handling instructions, procedures and arrangements so that all ground handling dispatch tasks are carried out in a standard manner. In addition, instructions shall be provided to its staff on the requirement to monitor the performance of the contracted handling agents to ensure safe conduct of all tasks. When all or part of the functions and tasks related to ground handling services have been contracted to a service provider, all ground handling responsibility must be still maintained by the operator.

(c) The operator shall establish in its OM, the parties responsible for operational control, the related policies, processes, standards and procedures for the management of all flights. This would include procedures such as the preparation and dissemination of pre-flight aeronautical information contained in the Aeronautical Information Publication (AIP) and Flight Operations Directives (FOD). Requirements for Operational Control are provided in Appendix 1.

(d) The operator shall delegate the responsibility for operational control to the pilot-in-command (PIC) and to a flight operations officer/flight dispatcher if an operator's approved method of control and supervision of flight operations requires the use of flight operations officer/flight dispatcher personnel. The detailed requirements for flight operations officers/flight dispatchers are specified in Appendix 2 and Appendix 3

(e) The operator shall establish a checklist system for each aircraft type to be used by crew in all phases of flight under any conditions to ensure that the operating procedures in the OM are followed. The design and utilisation of checklists shall observe human factors principles and take into account the latest relevant documentation from the aircraft manufacturer. The content for SOPs and checklists for crew members shall be in accordance with Appendix 4.

(f) The operator shall specify flight planning procedures for the safe conduct of the flight based on considerations of aircraft performance, other operating limitations and relevant expected conditions on the route to be followed and at the aerodromes or operating sites concerned. These procedures shall be included in the OM. The requirement for Operational Flight Plan (OFP) shall be in accordance with Appendix 5.

(g) The operator shall establish policy, procedures and requirements for flight following and aircraft tracking as a method of flight supervision in accordance with Appendix 6.

(h) The operator shall establish a flight safety documents system for their operational personnel as part of its safety management system in accordance with Appendix 7.

(i) The operator shall establish and maintain dangerous goods training programmes for personnel which shall be subject to review and approval by the CAAM. Training programmes shall commensurate with the responsibilities of personnel.

(j) The operator shall include in their OM the provisions related to special observations made by all aircraft whenever meteorological conditions are encountered or observed and reporting of volcanic activity in accordance with Appendix 8.

(k) The operator shall obtain a route qualification from the CAAM in order to conduct a domestic and/or an international operation. The route qualification requirements are in accordance with Appendix 9.

(l) The operator shall ensure that a single-engine aeroplane be operated in conditions of weather and light, and over such routes and diversions there from, that permit a safe forced landing to be executed in the event of engine failure. An operator intending to operate single-engine turbine-powered aeroplane at night and/or in IMC shall satisfy the requirements as specified in Appendix 10.

ORO.GEN.115 Application for an Air Operator Certificate (AOC)

(a) An operator shall not engage in CAT unless in possession of a valid AOC issued by the CAAM.

(b) To be eligible for an AOC, an applicant must be certified for operating at least one aircraft that is not wet-leased. Applicants that plan to operate only wet-leased aircraft cannot satisfy the certification procedures of the CAAM. The CAAM shall revoke or suspend the AOC of an organization that operates only wet-leased aircraft during a period longer than six (6) months.

(c) The application for the issuance, renewal or variation of AOC shall be made in the form and manner established by the Chief Executive Officer. The AOC application form is as per Attachment C.

(d) The applicant shall, upon an application for the issuance of the AOC, cause the CAAM inspector to be trained and rated as the PIC of the type of aircraft in the application form.

(e) The operator shall, upon an application for the variation of the AOC to include additional type of aircraft, cause the CAAM inspector to be trained and rated as the PIC of the type of aircraft in the application form.

ORO.GEN.125 Terms of approval and privileges of an operator

The operator shall comply with the scope and privileges defined in the operations specification attached to the AOC.

ORO.GEN.130 Changes

(a) No operator shall make any changes affecting:

(1) the scope of the AOC or the operations specification; or

(2) any of the elements of the operator's management system as required in ORO.GEN.200(a)(1) and (a)(2),

unless with the approval of the CAAM.

(b) An application for the approval under paragraph (a) shall be submitted together with such documents and information as required by the Chief Executive Officer and in accordance with any requirements as may be determined by the Chief Executive Officer.

ORO.GEN.135 Continued validity

(a) Subject to the fulfilment of the requirements as specified in this FOD, the CAAM may grant an initial AOC for a period of 1 year.

(b) The AOC may be renewed for a period not exceeding 5 years.

(c) The application for the renewal of the AOC shall be made to the CAAM four (4) months prior to the expiration date of the AOC.

(d) Audit report format shall be in accordance to Attachment A1.

ORO.GEN.150 Findings

(a) After receipt of notification of findings, the operator shall respond to the findings using the following 5 points closure plan as per Attachment A2:

(1) immediate corrective action taken in the short term at least to contain the findings and stop it from continuing;

(2) root cause analysis to identify the origin of the findings;

(3) root cause correction that should significantly reduce or eliminate the chances of recurrence;

(4) follow up to verify the effectiveness of the corrective action taken; and

(5) closure statement from the Quality Manager or responsible person stating his reason for acceptance of the corrective action taken.

(b) The operator shall demonstrate corrective action implementation to the satisfaction within a period agreed by the CAAM.

ORO.GEN.155 Immediate reaction to a safety problem

The operator shall implement:

(a) any safety measures directed by the CAAM; and

(b) any relevant mandatory safety information issued by the CAAM.

SECTION 2
MANAGEMENT

ORO.GEN.200 Management system

(a) The operator shall establish, implement and maintain a management system that includes:

(1) organisation structure acceptable to the CAAM with define lines of responsibility and accountability throughout the operator, including a direct safety accountability of the Accountable Manager (AM);

(2) a description of the overall philosophies and principles of the operator with regard to safety, referred to as the safety policy;

(3) the identification of aviation safety hazards entailed by the activities of the operator, their evaluation and the management of associated risks,

including taking actions to mitigate the risk and verify their effectiveness;

(4) maintaining trained and competent personnel to perform their tasks;

(5) documentation of all management system key processes, including a process for making personnel aware of their responsibilities and the procedure for amending this documentation;

(6) a function to monitor compliance of the operator with the relevant requirements. Compliance monitoring shall include a feedback system of findings to the AM to ensure effective implementation of corrective actions as necessary;

(7) to have an adequate and sound financial practice to ensure operational and maintenance cost and expenditure are covered; and

(8) any additional requirements as directed by the Chief Executive Officer.

(b) The management system shall correspond to the size of the operator and the nature and complexity of its activities, taking into account the hazards and associated risks inherent in these activities.

ORO.GEN.210 Personnel requirements

(a) The operator shall appoint an AM approved by the CAAM who has corporate authority for ensuring that all activities can be financed and carried out to the standard required by the CAAM and any other requirements defined by the operator. The application form for nomination of an AM for the purpose of air operator certification and supervision is in Attachment B (CAAM Form – AOC (AM)).

(b) A person or group of persons shall be nominated by the operator and approved by the CAAM, with the responsibility of ensuring that the operator remains in compliance with the applicable requirements. Such person(s) shall be ultimately responsible to the AM. The application form for nomination of post

holders for the purpose of air operator certification and supervision is in Attachment B (CAAM Form – AOC (NPH)).

(c) The operator shall have sufficient qualified personnel for the planned tasks and activities to be performed in accordance with the applicable requirements.

(d) The operator shall maintain appropriate experience, qualification and training records to show compliance with (c).

(e) The operator shall ensure that all personnel are aware of the rules and procedures relevant to the exercise of their duties.

(f) The operator shall employ a station manager or equivalent to oversee the operations at all hubs or stations.

ORO.GEN.215 Facility requirements

The operator shall have facilities allowing the performance and management of all planned tasks and activities at each base, hubs and stations, including those located in other States, are properly equipped; are provided with the necessary sanitary facilities and security and emergency controls, warnings and equipment; and are adequate for the operation to be conducted. Such facilities would include hangars, maintenance and overhaul workshops, administrative staff and operations personnel offices, passenger service areas, cargo storage, and handling buildings.

ORO.GEN.220 Record-keeping

(a) The operator shall establish a system of record–keeping that allows adequate storage and reliable traceability of all activities developed, covering in particular all the elements indicated in ORO.GEN.200.

(b) The format of the records shall be specified in the operator's procedures.

(c) Records shall be stored in a manner that ensures protection from damage, alteration and theft.

SUBPART AOC
AIR OPERATOR CERTIFICATION

ORO.AOC.100 Application for an air operator certificate

(a) For the purpose of an application for the issuance or renewal of the AOC, the applicant shall provide the following information to the CAAM—

(1) the name and address of the applicant;

(2) the location and address of the applicant's principal place of business and the main base of operations;

(3) a description of the applicant's business organisation, corporate structure, and names and addresses of those entities and individuals having a major financial interest;

(4) the identity of key management personnel, which include but not limited to chief executive officer, operations manager; chief pilot; fleet manager(s); cabin crew manager; safety manager; training manager; maintenance manager; ground handling manager; security manager and quality manager;

(5) the nature of the proposed operations, passenger, cargo and others (mail, EMS and etc), day or night operations, Visual Flight Rules (VFR) or Instrument Flight Rules (IFR), whether or not dangerous goods are to be transported; and

(6) the desired date for the operation to commence.

(b) The applicant shall submit an application for the issuance or renewal of the AOC together with the following documents—

(1) the identification of the operation specifications sought, with information on how associated conditions will be met;

(2) the schedule of events in the certification process with appropriate events addressed and target dates;

(3) an initial statement of compliance or detailed description of how the applicant intends to show compliance with each provision of the air navigation regulations;

(4) the management structure and key staff members including titles, names, backgrounds, qualifications and experience, with regulatory requirements satisfied;

(5) the details of the SMS as specified in Appendix 12;

(6) a list of designated destination and alternate aerodromes for scheduled services, areas of operation for non-scheduled services and bases for operations, as appropriate to the intended operations;

(7) a list of aircraft to be operated;

(8) documents of purchase, leases, contracts or letters of intent;

(9) arrangements for crew and ground personnel training and qualification and the facilities and equipment required and available;

(10) the OM;

(11) the Continuing Airworthiness Management Exposition;

(12) details of the method of control and supervision of operations to be used; and

(13) the status of the assessment of financial, economic and legal matters by the appropriate government department.

(c) The CAAM may issue or renew an AOC if the CAAM is satisfied that the applicant—

(1) is competent having regard in particular to his previous conduct and experience, his equipment, facilities, organization, staffing, maintenance of aircraft and other arrangements, to secure the safe operation of an aircraft of the type specified in the certificate on flights of the description and for the purposes so specified.

(2) holds a valid Air Service License (ASL) or Air Service Permit (ASP) issued by the Malaysian Aviation Commission (MAVCOM);

(3) has his principal place of business and, the registered office located in Malaysia;

(4) has an organisation, assets and management that are suitable and properly matched to the scale and scope of the operation;

(5) establish procedures for the supervision of operations;

(6) provide the documentation demonstrating the compliance with the certification requirements;

(7) employs adequate and suitably qualified personnel to conduct safe operations;

(8) complies with MCAR, all the applicable requirements of Part-CAT and Part-SPA, as applicable; and

(9) has a valid certificate of airworthiness for all of the operated aircraft;

(d) The layout of an AOC is as per Attachment D.

(e) The AOC shall include the following information—

(1) the State of the Operator and the issuing authority;

(2) the AOC number and its expiration date;

(3) the operator name, trading name (if different) and address of the principal place of business;

(4) the date of issue and the name, signature and title of the authority representative; and

(5) the location, in a controlled document carried on board, where the contact details of operational management can be found.

ORO.AOC.105 Operations specification and privileges of an AOC holder

The privileges of the operator shall be as specified in the operations specification. The operations specification shall contain at least the information listed in Attachment E.

ORO.AOC.110 Leasing

(a) The operator who intends to lease an aircraft registered in any State shall apply for an approval of the CAAM.

(b) The operator who intends to lease a Malaysian aircraft to any State shall apply for an approval of the CAAM.

(c) The operators who intends to lease any aircraft of other holder of an air operator certificate issued under regulation 110 shall apply for an approval of the CAAM.

(d) When the leasing arrangement involves safety oversight by foreign authority(s), the leasing arrangement should include information on compliance with relevant regulations of both the CAAM and the foreign authority(s).

(e) Operators intending to engage in leasing arrangement should familiarise themselves with the responsibilities of the State of Registry and the State of the Operator, in the event that the aircraft is registered in a State different from the State responsible for oversight of its operations. It is important that the

responsibilities of the lessor and lessee to be explicitly specified in the lease agreement between the lessor and lessee, to provide for proper airworthiness and operational oversight and control of the aircraft to be leased.

(f) An operator shall not lease-in an aircraft registered in any State from an operator which is banned by any regulatory body.

(g) An operator who intends to lease in an aircraft registered in any State shall exhaust all avenues locally prior approval from the CAAM.

ORO.AOC.111 CAAM Leasing Policy

(a) To provide clarity on the safety responsibilities expected from the lessee and lessor, the lessee and lessor shall comply with the obligations as specified in Table 1.

Table 1: Obligations expected from Lessee and Lessor in Operational Leases

Scenario	Obligations
All Leases	The applicant shall demonstrate the need to enter into aircraft operational leasing arrangements.
	The applicant shall ensure that provisions are made in the leasing arrangement to enable the CAAM inspectors to conduct necessary inspections.
Wet Leases	The lessee and lessor shall hold valid air operator certificates throughout the duration of the lease.
	The lessor should retain operational control of the aircraft.
	For wet leasing arrangements among Malaysia air operators, the lessee shall ensure that the lessor maintains the aircraft as per the lessor's approved maintenance program.
	For wet-lease In arrangements, the lessee shall ensure that reportable occurrences and incidents affecting the leased aircraft are reported to the CAAM[1].
Dry Leases	For Dry Lease Out arrangements, the lessee shall maintain the subject aircraft to Malaysian requirements.
	For Dry Lease In arrangements, the lessee shall ensure that the aircraft equipment relating to flight operations meets Malaysian's requirements.
Note 1	In all other types of leasing arrangements, regulation 165 MCAR

	requires Malaysian operator to report to the CAAM all reportable occurrences involving the leased aircraft.

(b) The CAAM may approve an application for lease-in and lease-out for a period as specified in Table 2. The AOC holder who needs to lease an aircraft for a period longer than the stipulated period in Table 2 should provide justifications to CAAM for the requested extended lease duration.

Table 2: Durations for Operational Leases

Scenario	Obligations
Wet Lease In	12 months, subject to a one-time extension of an additional 6 months.
Dry Lease In	12 months.
Wet Lease Out	12 months.
Dry Lease Out	12 months, subject to a one-time extension of an additional 12 months.
Intra State Wet Lease	12 months, subject to a one-time extension of an additional 12 months.

(c) The CAAM may approve an application for lease-in and lease-out if the CAAM is satisfied that the applicant—

(1) fulfil AOC requirements as per all current applicable regulations and standards set forth by CAAM;

(2) file all differences on operations;

(3) demonstrates all parties involved in the lease arrangement have sufficient knowledge and adequate resources to fulfil their roles and responsibilities with regard to the continuing airworthiness and operational control of the aircraft for the duration of the lease;

(4) To obtain copy of wet lease certificate from the foreign CAA after CAAM's approval.

(d) Lessees shall carry the following documents in the aircraft at all times for the duration of the lease-

(1) a certified true copy of the lease agreement between the lessor and

lessee;

(2) a certified true copy of the AOC and its corresponding specifications;

(3) a certified true copy of the Article 83bis agreement, if any; and

(4) flight crew licences issued or validated by the State of Registry.

ORO.AOC.120 Approvals to provide cabin crew training and to issue cabin crew attestations

When intending to provide the training course required in FOD10CC-16, the operator shall apply for and obtain an approval issued by the CAAM. For this purpose, the applicant shall demonstrate compliance with the requirements for the conduct and content of training course and examination established in CC.TRA.215 and CC.TRA.220 of FOD10CC-16.

ORO.AOC.125 Non-commercial operations of aircraft listed in the operations specification by the operator

The operator may conduct non-commercial operations with an aircraft otherwise used for CAT operations that is listed in the operations specification of its AOC, provided that the operator:

(a) describes such operations in detail in the OM, including:

(1) identification of the applicable requirements;

(2) a clear identification of any differences between operating procedures used when conducting commercial and non-commercial operations;

(3) a means of ensuring that all personnel involved in the operation are fully familiar with the associated procedures;

(b) submits the identified differences between the operating procedures referred to in (a)(2) to the CAAM for prior approval.

ORO.AOC.130 Flight Data Analysis Programme (FDAP)

(a) An operator of an aeroplane of a maximum certificated take-off mass (MCTOM) in excess of 27 000 kg shall establish and maintain a FDAP as part of its safety management system.

(b) An operator of a helicopter of a certified take-off mass in excess of 7 000 kg or having a passenger seating configuration of more than 9 and fitted with a flight data recorder shall establish and maintain a FDAP.

Note - An operator may contract the operation of a FDAP to another party while retaining overall responsibility for the maintenance of such a programme. Establishment of FDAPs shall be in accordance to Appendix 13.

ORO.AOC.135 Personnel requirements

(a) In accordance with ORO.GEN.210(b), the operator shall nominate persons responsible for the management and supervision of the AOC.

(b) Nominated AM

(1) The operator shall appoint AM as approved by the CAAM who has corporate authority for ensuring that all operations and maintenance activities can be financed and carried out to the standard required by the CAAM and any additional requirements defined by the operator.

(2) The AM is an essential part of the AOC holder's management organisation. The term 'AM' is intended to mean the Chief Executive/Executive Chairman/Managing Director/CEO/General Manager, etc. of the operator's organisation, who by virtue of his position has overall responsibility (including finance) for managing the organisation.

(3) Delegation of authority. The AM may delegate his authority especially in the scope of finance to senior member(s) of his management team in order to ensure effective and safe operation. The senior member(s) who hold the delegation are known as the Delegated AM.

(c) Nominated Post Holders (NPH). The operator shall appoint NPH as approved by the CAAM, who are responsible for the management and supervision of the following areas:

(1) Flight Operations;

(i) Director of Flight Operations (DFO)/Flight Operations Manager (FOM) or equivalent;

(ii) Chief Pilot Operations (CPO) or equivalent;

(iii) Cabin Crew Manager or equivalent;

(iv) Operation Control Centre (OCC) Manager or equivalent;

(2) The Engineering Maintenance System Manager or equivalent;

(3) Crew Training Manager or equivalent;

(4) Ground Handling Manager or equivalent;

(5) Safety Manager or equivalent; and

(6) Others as required by the CAAM.

The CAAM shall not approve a nomination which does not meet the requirements.

(d) NPH shall have practical experience and expertise in the application of aviation safety standards and safe operating practices; comprehensive knowledge of CAA 1969, CAR 2016 and any associated requirements and procedures, operations specification, OM, SMS or Maintenance Management Manual where applicable. Minimum of five years management working experience of which at least two years should be from the aeronautical industry in an appropriate position.

(e) Flight Operations.

(1) DFO/FOM or equivalent shall hold or have held a Malaysian licence appropriate to the type of operation conducted under the AOC in accordance with the following:

(i) If the AOC includes aircraft certificated for a minimum crew of

two (2) pilots - An Airline Transport Pilot's Licence (ATPL) issued or validated by the CAAM.

(ii) If the AOC is limited to aeroplanes certificated for a minimum crew of one (1) pilot - A Commercial Pilot's Licence (CPL), and if appropriate to the operation, an Instrument Rating issued or validated by the CAAM.

(f) Engineering Maintenance System Manager post holder acceptance shall be subjected to Airworthiness requirements.

(g) Crew Training Manager or equivalent shall hold a current Type Rating on a type operated under the AOC, and having experience as the CAAM Authorised Examiner or a Type Rating Instructor (TRI). The NPH shall have a thorough knowledge of the AOC holder's crew training concept for flight crew and cabin crew where applicable.

(h) Others Post Holders. This requirement shall be determined by the CAAM depending on the size and complexity of the operations. The NPH should have a thorough knowledge and qualification relevant to their duties and responsibilities.

(i) Combination of NPH's Responsibilities

(1) The acceptability of a single person holding several posts, possibly in combination with being the AM as well, will depend upon the nature and scale of the operation. The two main areas of concern are competency and an individual's capacity to meet his responsibilities.

(2) With regards to competency in the different areas of responsibility, there should not be any difference from the requirements applicable to persons holding only one post.

(3) The capacity of an individual to meet his responsibilities will primarily be dependent upon the scale of the operation. However, the complexity of the organisation or of the operation may prevent, or limit,

combinations of posts which may be acceptable in other circumstances.

(4) In most circumstances, the responsibilities of a NPH will rest with a single individual. However, in the area of ground operations, it may be acceptable for these responsibilities to be split, provided that the responsibilities of each individual concerned are clearly defined.

(5) The AM and NPH shall be Malaysian citizens unless local expertise is not available for the safety of its operation. In cases where foreign expertise is required, approval shall be granted in accordance with the local employment terms and conditions and approved by the CAAM.

ORO.AOC.140 Facility requirements

In accordance with ORO.GEN.215, the operator shall:

(a) make use of appropriate ground handling facilities to ensure the safe handling of its flights;

(b) arrange operational support facilities at the main operating base, hub or station including those located in other States, appropriate for the area and type of operation; and

(c) ensure that the available working space at each operating base is sufficient for personnel whose actions may affect the safety of flight operations. Consideration shall be given to the needs of ground crew, personnel concerned with operational control, the storage and display of essential records and flight planning by crews.

ORO.AOC.150 Documentation requirements

The operator shall arrangements for the production of flight safety documents according to criteria which ensure easy access to information required for flight and ground operations contained in the various operational documents comprising system which facilitate management of the distribution and revision of operational documents.

SUBPART MLR
MANUALS, LOGS AND RECORDS

ORO.MLR.100 Operations manual (OM) — general

(a) The operator shall establish an OM as specified in regulation 111 MCAR and in accordance with this FOD.

(b) The content of the OM shall reflect the requirements set out in this FOD, Part-CAT and Part-SPA, as applicable, and shall not contravene the conditions contained in the operations specification to the AOC.

(c) The OM shall be issued in separate parts.

(d) All operations personnel shall have easy access to the portions of the OM that are relevant to their duties.

(e) The OM shall be kept up-to-date. All personnel shall be made aware of the changes that are relevant to their duties.

(f) The operator shall make available to each member of his operating staff an OM. Each OM shall contain all such information and instructions as may be necessary to enable the operating staff to properly perform their respective duties including, in particular, giving information and instructions relating to CAT operational requirements. Each holder of an OM, or appropriate parts of it, shall be responsible for keeping their copy up-to-date with the amendments or revisions supplied by the operator.

(g) For AOC holders:

(1) for amendments required to be notified in accordance with ORO.GEN.130(b), the operator shall supply the CAAM with intended amendments in advance of the effective date; and

(2) for amendments to procedures associated with prior approval items in accordance with ORO.GEN.130, approval shall be obtained before the amendment becomes effective.

(h) Notwithstanding (g), when immediate amendments or revisions are required in the interest of safety, they shall be published and applied immediately, provided that any approval required has been applied for.

(i) The operator shall incorporate all amendments and revisions required by the CAAM.

(j) The operator shall ensure that information taken from approved documents, and any amendment thereof, is correctly reflected in the OM. This does not prevent the operator from publishing more conservative data and procedures in the OM.

(k) The operator shall ensure that all personnel are able to understand the language in which those parts of the OM which pertain to their duties and responsibilities are written. The content of the OM shall be presented in a form that can be used without difficulty and observes human factors principles.

(l) List of mandatory manuals required by this FOD shall be in accordance to Attachment F.

ORO.MLR.101 Operations manual (OM) — structure

The main structure of the OM shall be as follows:

(a) Part A: General/Basic, comprising all non-type-related operational policies, instructions and procedures;

(b) Part B: Aircraft operating matters, comprising all type-related instructions and procedures, taking into account differences between types/classes, variants or individual aircraft used by the operator;

(c) Part C: CAT operations, comprising route/role/area and aerodrome/operating site instructions and information;

(d) Part D: Training, comprising all training instructions for personnel required for a safe operation.

The content of an OM shall be in accordance to Appendix 14.

ORO.MLR.105 Minimum equipment list

(a) A minimum equipment list (MEL) shall be established based on the relevant master minimum equipment list (MMEL).

(b) The MEL and any amendment shall be approved by the CAAM.

(c) In addition to the list of items, the MEL shall contain:

(1) a preamble, including guidance and definitions for flight crews and maintenance personnel using the MEL;

(2) the revision status of the MMEL upon which the MEL is based and the revision status of the MEL; and

(3) the scope, extent and purpose of the MEL.

(d) The operator shall—

(1) establish rectification intervals for each inoperative instrument, item of equipment or function listed in the MEL. The rectification interval in the MEL shall not be less restrictive than the corresponding rectification interval in the MMEL;

(2) establish an effective rectification programme;

(3) only operate the aircraft after expiry of the rectification interval specified in the MEL when:

(i) the defect has been rectified; or

(ii) the rectification interval has been extended in accordance with (f).

(e) Subject to approval of the CAAM, the operator may use a procedure for the one time extension of category B, C and D rectification intervals, provided that:

(1) the extension of the rectification interval is within the scope of the MMEL for the aircraft type;

(2) the extension of the rectification interval is, as a maximum, of the same duration as the rectification interval specified in the MEL;

(3) the rectification interval extension is not used as a normal means of conducting MEL item rectification and is used only when events beyond the control of the operator have precluded rectification;

(4) a description of specific duties and responsibilities for controlling extensions is established by the operator;

(5) the CAAM is notified of any extension of the applicable rectification interval; and

(6) a plan to accomplish the rectification at the earliest opportunity is established.

(f) The operator shall establish the operational and maintenance procedures referenced in the MEL taking into account the operational and maintenance procedures referenced in the MMEL. These procedures shall be part of the operator's manuals or the MEL.

(g) The operator shall amend the operational and maintenance procedures referenced in the MEL after any applicable change to the operational and maintenance procedures referenced in the MMEL.

(h) Unless otherwise specified in the MEL, the operator shall complete:

(1) the operational procedures referenced in the MEL when planning for and/or operating with the listed item inoperative; and

(2) the maintenance procedures referenced in the MEL prior to operating with the listed item inoperative.

(l) Subject to a specific case-by-case approval by the CAAM, the operator may operate an aircraft with inoperative instruments, items of equipment or functions outside the constraints of the MEL but within the constraints of the MMEL, provided that—

(1) the concerned instruments, items of equipment or functions are within the scope of the MMEL;

(2) the approval is not used as a normal means of conducting operations outside the constraints of the approved MEL and is used only when events beyond the control of the operator have precluded the MEL compliance;

(3) a description of specific duties and responsibilities for controlling the operation of the aircraft under such approval is established by the operator; and

(4) a plan to rectify the inoperative instruments, items of equipment or functions or to return operating the aircraft under the MEL constraints at the earliest opportunity is established.

ORO.MLR.110 Journey log

An operator shall retain particulars of the aircraft, its crew and each journey for each flight, or series of flights, in the form of a journey log, or equivalent.

ORO.MLR.115 Record-keeping

(a) An operator shall store the records of the activities referred to in ORO.GEN.200 for at least five years.

(b) An operator shall store the following information used for the preparation and execution of a flight, and associated reports, for three months—

(1) the operational flight plan;

(2) route-specific notice(s) to airmen (NOTAM) and aeronautical information services (AIS) briefing documentation, if edited by the operator;

(3) mass and balance documentation;

(4) notification of special loads, including written information to the PIC about dangerous goods;

(5) the journey log, or equivalent; and

(6) flight report(s) for recording details of any occurrence, or any event that the PIC deems necessary to report or record;

(c) An operator shall store personnel training records for the periods as specified in Attachment H (Table of Record Retention). The content and arrangement of training records shall be in accordance to Attachment H (Training file content and arrangement).

(d) An operator shall:

(1) maintain records of all training, checking and qualifications of each crew member and personnel, as prescribed in this FOD; and

(2) make such records available, on request, to the crew member concerned.

(e) The operator shall preserve the information used for the preparation and execution of a flight and personnel training records, even if the operator ceases to be the operator of that aircraft or the employer of that crew member, provided this is within the timescales prescribed in (c).

(f) If a crew becomes a crew for another operator, the operator shall make the crew's records available to the new operator, provided this is within the timescales prescribed in (c).

SUBPART SEC
SECURITY

ORO.SEC.100.A Flight crew compartment security (Aeroplane)

(a) All passenger-carrying aeroplanes of a MCTOM exceeding 45 500 kg, or with a passenger seating capacity greater than 60 engaged in the CAT, shall be 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.

(b) In all aeroplanes equipped with a flight deck door required by (a), means shall be provided for pilots to monitor from either pilot's station the entire door area outside the flight deck to identify persons requesting entry to the flight deck and to detect suspicious behaviour or potential threat.

(c) For aeroplane other than aeroplane as specified in paragraph (a), it is recommended such aeroplane be installed with an approved flight deck door that is designed to resist penetration by small arms fire and grenade shrapnel, and to resist forcible intrusion by unauthorised persons.

(d) In all aeroplanes equipped with a flight deck door recommended by (c), means should be provided for pilots to monitor from either pilot's station the entire door area outside the flight deck to identify persons requesting entry to the flight deck and to detect suspicious behaviour or potential threat.

(e) If installed, the flight deck door shall be capable of being locked or unlocked from either pilot's station. Means shall be provided by which cabin crew member can discreetly notify the flight crew in the event of suspicious activity or security breaches in the cabin.

(f) The PIC shall ensure that the flight deck door is closed from the time all external doors are closed following embarkation until any such door is opened for disembarkation, except when necessary to permit access and egress by authorised persons.

(g) The flight deck door shall not be opened unless the person requesting access has been identified as a person authorised to access the flight deck.

ORO.SEC.100.H Flight crew compartment security (Helicopter)

If installed, the flight crew compartment door on a helicopter operated for the purpose of carrying passengers shall be capable of being locked from within the flight crew compartment in order to prevent unauthorised access.

ORO.SEC.110 ADMISSION TO THE FLIGHT DECK

(a) No person shall enter or be in a flight deck of any aircraft flying for the purpose of commercial air transport unless—

(1) that person is a crew on duty and authorised by the operator;

(2) that person is, with the authority of the Chief Executive Officer, performing any regulatory functions, including witnessing any training, practise or test for the purpose of the Act or any subsidiary legislation made under the Act or for the purpose of the Civil Aviation Authority of Malaysia Act 2017 [Act 788]; or

(3) that person is authorised by the Chief Executive Officer.

(b) An operator shall ensure that no person other than the persons referred to in paragraph (a)(1) to (3) enters or be in a flight deck of any of its aircraft.

SUBPART FC
FLIGHT CREW

ORO.FC.100 Composition of flight crew – General Requirement

(a) An operator shall ensure that the composition of the flight crew and the number of members of the flight crew at designated crew stations of not less than the minimum specified in the aircraft flight manual or operating limitations prescribed for the aircraft.

(b) An operator shall include additional flight crew when required by the type of operation and the number shall not be reduced, as specified in the OM.

(c) All flight crew shall hold a licence and ratings issued or accepted in accordance with regulation 59 MCAR and appropriate to the duties assigned to them.

(d) The flight crew may be relieved in flight of his duties at the controls by another suitably qualified flight crew.

ORO.FC.105 Designation as PIC

(a) One pilot among the flight crew, qualified as PIC in accordance with FOD-FCL, shall be designated by the operator as PIC.

(b) An operator shall not utilise a pilot as PIC of an aeroplane on a route or route segment for which that pilot is not currently qualified until such pilot has complied with (c) and (d).

(c) Each such pilot shall demonstrate to the operator an adequate knowledge of—

(1) the route to be flown, and the aerodromes which are to be used. This shall include knowledge of:

(i) the terrain and minimum safe altitudes;

(ii) the seasonal meteorological conditions;

(iii) the meteorological, communication and air traffic facilities, services and procedures;

(iv) the search and rescue procedures; and

(v) the navigational facilities and procedures, including any long-range navigation procedures, associated with the route along which the flight is to take place.

(2) procedures applicable to flight paths over heavily populated areas and areas of high air traffic density, obstructions, physical layout, lighting, approach aids and arrival, departure, holding and instrument approach procedures, and applicable operating minima.

Note – That portion of the demonstration relating to arrival, departure, holding and instrument approach procedures may be accomplished in an appropriate training device which is adequate for this purpose.

(d) A PIC shall have made an actual approach into each aerodrome of landing on the route, accompanied by a pilot who is qualified for the aerodrome, as a member of the flight crew or as an observer on the flight deck, unless:

(1) the approach to the aerodrome is not over difficult terrain and the instrument approach procedures and aids available are similar to those with which the pilot is familiar, and a margin to be approved by the CAAM is added to the normal operating minima, or there is reasonable certainty that approach and landing can be made in Visual Meteorological Conditions (VMC); or

(2) the descent from the initial approach altitude can be made by day in VMC; or

(3) the operator qualifies the PIC to land at the aerodrome concerned by means of an adequate pictorial presentation; or

(4) the aerodrome concerned is adjacent to another aerodrome at which the PIC is currently qualified to land.

(e) The operator shall maintain a record, sufficient to satisfy the CAAM of the qualification of the pilot and of the manner in which such qualification has been achieved.

(f) An operator shall not continue to utilise a pilot as a PIC on a route or within an area specified by the operator and approved by the CAAM unless, within the preceding 12 months that pilot has made at least one trip as a pilot member of the flight crew, or as a check pilot, or as an observer in the flight crew compartment:

(1) within that specified area; and

(2) if appropriate, on any route where procedures associated with that route or with any aerodromes intended to be used for take-off or landing require the application of special skills or knowledge.

(g) In the event that more than 12 months elapse in which a PIC has not made such a trip on a route in close proximity and over similar terrain, within such a specified area, route or aerodrome, and has not practiced such procedures in a training device which is adequate for this purpose, prior to again serving as a PIC within that area or on that route, that pilot must re-qualify in accordance with (c) and (d).

(h) In the case of performance class B aeroplanes involved in CAT operations under VFR by day, (b) to (g) shall not apply.

ORO.FC.110 Flight engineer

When a separate flight engineer station is incorporated in the design of an aeroplane, the flight crew shall include one crew member who is suitably qualified in accordance regulation 57 MCAR.

ORO.FC.115 Crew resource management (CRM) training

(a) Before operating, the flight crew shall have received CRM training, appropriate to his role, as specified in the OM.

(b) Elements of CRM training shall be included in the aircraft type or class training and recurrent training as well as in the command course.

ORO.FC.120 Operator conversion training

(a) In the case of aeroplane or helicopter operations, the flight crew shall complete the operator conversion training course before commencing unsupervised line flying:

(1) when changing to an aircraft for which a new type or class rating is required;

(2) when joining an operator.

(b) The operator conversion training course shall include training on the equipment installed on the aircraft as relevant to flight crew roles.

ORO.FC.125 Differences training and familiarisation training

(a) Flight crew shall complete differences or familiarisation training when required by FOD-FCL and when changing equipment or procedures requiring additional knowledge on types or variants currently operated.

(b) The OM shall specify when such differences or familiarisation training is required in accordance to FOD-FCL.

ORO.FC.130 Recurrent training and checking

(a) Each flight crew shall complete annual recurrent flight and ground training relevant to the type or variant of aircraft on which he operates, including training on the location and use of all emergency and safety equipment carried.

(b) Each flight crew shall be periodically checked to demonstrate competence in carrying out normal, abnormal and emergency procedures.

ORO.FC.135 Pilot qualification to operate in either pilot's seat

Flight crew who may be assigned to operate in either pilot's seat shall complete appropriate training and checking as specified in the OM.

ORO.FC.140 Operation on more than one type or variant

(a) Flight crew operating more than one type or variant of aircraft shall comply with the requirements prescribed in this FOD for each type or variant, unless credits related to the training, checking, and recent experience requirements are defined in the data established in accordance with initial Airworthiness requirements for the relevant types or variants.

(b) Appropriate procedures and/or operational restrictions shall be specified in the OM for any operation on more than one type or variant.

ORO.FC.145 Provision of training

(a) All the training required in this FOD shall be conducted:

(1) in accordance with the training programmes and syllabi established by the operator in the OM;

(2) by appropriately qualified personnel. In the case of flight and flight simulation training and checking, the personnel providing the training and conducting the checks shall be qualified in accordance with FOD-FCL.

(b) When establishing the training programmes and syllabi, the operator shall include the mandatory elements for the relevant type as defined in the data established in accordance with initial Airworthiness requirements for the relevant types or variants.

(c) Training and checking programmes, including syllabi and use of individual FSTDs shall be approved by the CAAM.

(d) The FSTD shall replicate the aircraft used by the operator, as far as practicable. Differences between the FSTD and the aircraft shall be described and addressed through a briefing or training, as appropriate.

(e) The operator shall establish a system to adequately monitor changes to the FSTD and to ensure that those changes do not affect the adequacy of the training programmes.

ORO.FC.200 Composition of flight crew

(a) There shall not be more than one inexperienced flight crew in any of the members of flight crew.

(b) The PIC may delegate the conduct of the flight to another pilot suitably qualified in accordance with FOD-FCL provided that the requirements of ORO.FC.105(b), (c) and (d) are complied with.

(c) Specific requirements for aeroplane operations under IFR or at night.

(1) The minimum flight crew shall be two pilots for all turbo-propeller aeroplanes with a maximum approved passenger seating configuration (MAPSC) of more than nine and all turbojet aeroplanes.

(2) Aeroplanes other than those covered by (c)(1) shall be operated with a minimum crew of two pilots, unless the requirements of ORO.FC.202 are complied with, in which case they may be operated by a single pilot.

(d) Specific requirements for helicopter operations.

(1) For all operations of helicopters with an MAPSC of more than 19 and for operations under IFR of helicopters with an MAPSC of more than 9:

(i) the minimum flight crew shall be two pilots; and

(ii) the PIC shall be the holder of an ATPL(H) with an instrument rating issued in accordance with FOD-FCL.

(2) Operations not covered by (d)(1) may be operated by a single pilot under IFR or at night provided that the requirements of ORO.FC.202 are complied with.

ORO.FC.202 Single-pilot operations under IFR or at night

(a) A pilot shall not operate an aeroplane under the IFR or at night by a single pilot unless approved by the CAAM.

(b) A pilot shall not operate an aeroplane under the IFR or at night by a single pilot unless:

(1) the flight manual does not require a flight crew of more than one;

(2) the aeroplane is propeller-driven;

(3) the maximum approved passenger seating configuration is not more than nine;

(4) the maximum certificated take-off mass does not exceed 5 700 kg;

(5) the PIC has satisfied requirements of experience, training, checking and recency described in (e) below; and

(6) the aeroplane is equipped as described as follows:

(i) for approval in accordance with ORO.FC.202, all aeroplanes operated by a single pilot under the IFR or at night shall be equipped with:

(A) a serviceable autopilot that has at least altitude hold and heading select modes;

(B) a headset with a boom microphone or equivalent; and

(C) means of displaying charts that enables them to be readable in all ambient light conditions.

(c) The operator shall include in the OM a pilot's conversion and recurrent training programme that includes the additional requirements for a single-pilot operation. The pilot shall have undertaken training on the operator's procedures, in particular regarding:

(1) engine management and emergency handling;

(2) use of normal, abnormal and emergency checklist;

(3) air traffic control (ATC) communication;

(4) departure and approach procedures;

(5) autopilot management, if applicable;

(6) use of simplified in-flight documentation; and

(7) single-pilot CRM.

(d) The recurrent checks required by ORO.FC.230 shall be performed in the single-pilot role on the relevant type or class of aeroplane in an environment representative of the operation.

(e) The PIC shall:

(1) in the case of an aeroplane operations under IFR—

(i) have a minimum of 50 hours flight time under IFR on the relevant type or class of aeroplane, of which 10 hours are as PIC; and

(ii) have completed during the preceding 90 days on the relevant type or class of aeroplane:

(A) five IFR flights, including three instrument approaches, in a single-pilot role; or

(B) an IFR instrument approach check.

(2) in the case of an aeroplane operations at night:

(i) have a minimum of 15 hours flight time at night which may be included in the 50 hours flight time under IFR in (c)(1); and

(ii) have completed during the preceding 90 days on the relevant type or class of aeroplane:

(A) three take-offs and landings at night in the single pilot role; or

(B) a night take-off and landing check.

(3) have successfully completed training programmes that include passenger briefing with respect to emergency evacuation, autopilot management, and the use of simplified in-flight documentation.

(f) The initial and recurrent flight training and proficiency checks shall be performed by the PIC in the single pilot role on the class of aeroplane in an environment representative of the operation.

(g) For helicopter operations under IFR, the pilot shall have:

(1) 25 hours total IFR flight experience in the relevant operating environment; and

(2) 25 hours flight experience as a single pilot on the specific type of helicopter, approved for single-pilot IFR, of which 10 hours may be flown under supervision, including five sectors of IFR line flying under supervision using the single-pilot procedures; and

(3) completed during the preceding 90 days:

(i) five IFR flights as a single pilot, including three instrument approaches, carried out on a helicopter approved for this purpose; or

(ii) an IFR instrument approach check as a single pilot on the relevant type of helicopter, flight training device (FTD) or full flight simulator (FFS).

ORO.FC.205 Command course

(a) For aeroplane and helicopter operations, the command course shall include at least the following elements:

(1) training in an FSTD, which includes line oriented flight training (LOFT) and/or flight training;

(2) the Certificate of Test (COT), operating as PIC;

(3) command responsibilities training;

(4) line training as PIC under supervision (PICUS), for a minimum of:

(i) 10 flight sectors, in the case of aeroplanes; and

(ii) 10 hours, including at least 10 flight sectors, in the case of helicopters;

(5) completion of a line check as PIC and demonstration of adequate knowledge of the route or area to be flown and of the aerodromes, including alternate aerodromes, facilities and procedures to be used; and

(6) CRM training.

ORO.FC.215 Initial operator's CRM training

(a) The flight crew shall have completed an initial CRM training course before commencing unsupervised line flying.

(b) Initial CRM training shall be conducted by at least one suitably qualified CRM trainer who may be assisted by experts in order to address specific areas.

(c) If the flight crew has not previously received theoretical training in human factors to the ATPL level, he shall complete, before or combined with the initial CRM training, a theoretical course provided by the operator and based on the human performance and limitations syllabus for the ATPL as established in FOD-FCL.

ORO.FC.220 Operator conversion training and checking

(a) CRM training shall be integrated into the operator conversion training course.

(b) Once an operator conversion course has been commenced, the flight crew shall not be assigned to flying duties on another type or class of aircraft until the course is completed or terminated. Flight crew operating only performance class B aeroplanes may be assigned to flights on other types of performance class B aeroplanes during conversion courses to the extent necessary to maintain the operation.

(c) The amount of training required by the flight crew for the operator's conversion course shall be determined in accordance with the standards of qualification and experience specified in the OM, taking into account his previous training and experience.

(d) The flight crew shall complete:

(1) the COT and the emergency and safety equipment training and checking before commencing line flying under supervision (LIFUS); and

(2) the line check upon completion of LIFUS. For performance class B aeroplanes, LIFUS may be performed on any aeroplane within the applicable class.

(e) In the case of aeroplanes, pilots that have been issued a type rating based on a zero flight-time training (ZFTT) course shall:

(1) commence line flying under supervision not later than 21 days after the completion of the skill test or after appropriate training provided by the operator. The content of such training shall be described in the OM.

(2) complete six take-offs and landings in a FSTD not later than 21 days after the completion of the skill test under the supervision of a type rating examiner for aeroplanes (TRE(A)) occupying the other pilot seat. If these take-offs and landings have not been performed within 21 days, the operator shall provide refresher training. The content of such training shall be described in the OM.

(3) conduct the first four take-offs and landings of the LIFUS in the aeroplane under the supervision of a TRE(A) occupying the other pilot seat.

ORO.FC.230 Recurrent training and checking

(a) Each flight crew shall complete recurrent training and checking relevant to the type or variant of aircraft on which they operate.

(b) Certificate of Test (COT)

(1) COT shall be valid for a period not exceeding six month and may be renewed.

(2) Pilot shall submit himself for the renewal of COT within 2 months prior to the expiration date of the current COT and the validity period for the renewed COT shall commence upon the expiration date of the current COT.

(3) Notwithstanding paragraph (2) above, the pilot may submit himself for the renewal of COT at any time before the period specified in paragraph (2) above but the validity period for the renewed COT shall commence immediately on the date of renewal.

(4) Pilot shall not fly an aircraft for the purpose of CAT upon the expiration period of the COT.

(c) Line check

(1) Each flight crew shall complete a line check on the aircraft to demonstrate competence in carrying out normal line operations described in the OM. An operator shall not continue to utilize a pilot as a PIC on a route or within an area specified by the operator and approved by the CAAM unless, within the preceding 12 months, that pilot has made at least one trip as a pilot member of the flight crew, or as a check pilot, or as an observer in the flight crew compartment:

(i) within that specified area; and

(ii) if appropriate, on any route where procedures associated with that route or with any aerodromes intended to be used for take- off or landing require the application of special skills or knowledge.

(2) Notwithstanding ORO.FC.145(a)(2), line checks may be conducted by a suitably qualified PIC nominated by the operator, trained in CRM concepts and the assessment of CRM skills.

(d) Emergency and safety equipment training and checking

Each flight crew shall complete training and checking on the location and use of all emergency and safety equipment carried. The validity period of an emergency and safety equipment check shall be 12 months.

(e) CRM training

(1) Elements of CRM shall be integrated into all appropriate phases of the recurrent training.

(2) Each flight crew shall undergo specific modular CRM training. All major topics of CRM training shall be covered by distributing modular training sessions as evenly as possible over each 36 months period.

(f) Each flight crew shall undergo ground training and flight training in an FSTD or an aircraft, or a combination of FSTD and aircraft training, at least every 12 months.

(g) The new validity period of training or checks shall be counted from the date of successful completion of training or checks.

(h) Aircraft type reactivation requirements shall be in accordance to the table below.

	MONTHS LAPSE			
ITEMS	**0-3**	**>3-12**	**>12 - <36**	**>36**
Line Training & Check *	NR	NR	R	R
Endorsement (aircraft)	NR	NR	NR	NR
Full Flight Simulator	NR	2 Ss	3 Ss	as initial type
Certificate of Test/ License Proficiency Check	R	R	R	R
Fixed Base Simulator	AR	AR	AR	AR
CAAM Exam	NR	NR	R	R
Ground Course/Company Exam	NR	NR	NR	R
Self-Study	R	R	R	NA
Observation	NR	NR	NR	2 Flights
Safety Emergency Procedure (SEP)	R	R	R	R

R - Required
NR - Not Required
NA - Not Applicable
AR - As Required
Ss - Sessions
* A minimum of 4 sectors

ORO.FC.235 Pilot qualification to operate in either pilot's seat

(a) PIC whose duties require them to operate in either pilot seat and carry out the duties of a co-pilot, or PIC required to conduct training or checking duties, shall complete additional training and checking as specified in the OM. The check may be conducted together with the COT prescribed in ORO.FC.230(b).

(b) The additional training and checking shall include at least the following:

(1) an engine failure during take-off;

(2) a one-engine-inoperative approach and go-around; and

(3) a one-engine-inoperative landing.

(c) In the case of helicopters, PIC shall also complete their proficiency checks from left- and right-hand seats, on alternate proficiency checks, provided that when the type rating proficiency check is combined with the COT the PIC completes his training or checking from the normally occupied seat.

(d) When engine-out manoeuvres are carried out in an aircraft, the engine failure shall be simulated.

(e) When operating in the co-pilot's seat, the checks required by ORO.FC.230 for operating in the PIC's seat shall, in addition, be valid and current.

(f) The pilot relieving the PIC shall have demonstrated, concurrent with the COT prescribed in ORO.FC.230(b), practice of drills and procedures that would not, normally, be his responsibility. Where the differences between left- and right-hand seats are not significant, practice may be conducted in either seat.

ORO.FC.240 Operation on more than one type or variant

(a) The procedures or operational restrictions for operation on more than one type or variant established in the OM and approved by the CAAM shall cover:

(1) the flight crew members' minimum experience level;

(2) the minimum experience level on one type or variant before beginning training for and operation of another type or variant;

(3) the process whereby flight crew qualified on one type or variant will be trained and qualified on another type or variant; and

(4) all applicable recent experience requirements for each type or variant.

(b) Paragraph (a) shall not apply to operations of performance class B aeroplane if they are limited to single-pilot classes of reciprocating engine aeroplanes under VFR by day.

ORO.FC.A.245 Alternative training and qualification programme (ATQP)

(a) The aeroplane operator having appropriate experience may substitute one or more of the following training and checking requirements for flight crew by an ATQP, approved by the CAAM—

(1) SPA.LVO.120 on flight crew training and qualifications;

(2) conversion training and checking;

(3) differences training and familiarisation training;

(4) command course;

(5) recurrent training and checking; and

(6) operation on more than one type or variant.

(b) The ATQP shall contain training and checking that establishes and maintains at least an equivalent level of proficiency achieved by complying with the provisions of ORO.FC.220 and ORO.FC.230. The level of flight crew training and qualification proficiency shall be demonstrated prior to being granted the ATQP approval by the CAAM.

(c) The operator applying for an ATQP approval shall provide the CAAM with an implementation plan, including a description of the level of flight crew training and qualification proficiency to be achieved.

(d) In addition to the checks required by ORO.FC.230 and FCL.060 of FOD-FCL, each flight crew member shall complete a line oriented evaluation (LOE)

conducted in an FSTD. The validity period of an LOE shall be 12 calendar months.

ORO.FC.A.250 PIC holding a CPL(A)

(a) The holder of a CPL(A) (aeroplane) shall only act as PIC in CAT on a single-pilot aeroplane if:

(1) when carrying passengers under VFR outside a radius of 50 NM (90 km) from an aerodrome of departure, he has a minimum of 500 hours of flight time on aeroplanes or holds a valid instrument rating; or

(2) when operating on a multi-engine type under IFR, he has a minimum of 700 hours of flight time on aeroplanes, including 400 hours as PIC. These hours shall include 100 hours under IFR and 40 hours in multi- engine operations. The 400 hours as PIC may be substituted by hours operating as co-pilot within an established multi-pilot crew system prescribed in the OM, on the basis of two hours of flight time as co-pilot for one hour of flight time as PIC.

(b) For operations under VFR by day of performance class B aeroplanes, paragraph (a)(1) shall not apply.

ORO.FC.H.250 PIC holding a CPL(H)

(a) The holder of a CPL(H) (helicopter) shall only act as PIC in CAT on a single-pilot helicopter if:

(1) when operating under IFR, he has a minimum of 700 hours total flight time on helicopters, including 300 hours as PIC. These hours shall include 100 hours under IFR. The 300 hours as PIC may be substituted by hours operating as co-pilot within an established multi-pilot crew system prescribed in the OM on the basis of two hours of flight time as co-pilot for one-hour flight time as PIC;

(2) when operating under VMC at night, he has:

(i) a valid instrument rating; or

(ii) 300 hours of flight time on helicopters, including 100 hours as PIC and 10 hours as pilot flying at night.

SUBPART CC
CABIN CREW MEMBER

ORO.CC.005 Scope

This Subpart establishes the requirements to be met by the operator when operating an aircraft with cabin crew and comprises:

(a) Section 1 specifying common requirements applicable to all operations; and

(b) Section 2 specifying additional requirements only applicable to commercial air transport operations.

Section 1
General requirements

ORO.CC.100 Number and composition of cabin crew member

(a) For the purpose of this section, "main exit" means an exit on the side of the aircraft at floor level intended for the disembarkation of passengers, whether in normal circumstances or in an emergency.

(b) The number and composition of cabin crew shall be taking into account operational factors or circumstances of the particular flight to be operated. At least one cabin crew member shall be assigned for the operation of aircraft with a Maximum Approved Passenger Seating Configuration (“MAPSC”) of more than 19 when carrying one or more passenger(s).

(c) Notwithstanding paragraph (b), the Chief Executive Officer may give a direction to the operator to carry at least one cabin crew although the aircraft with a MAPSC is less than twenty passengers.

(d) For the purpose of complying with (a), the minimum number of cabin crew shall be the greater of the following:

(1) the number of cabin crew members established during the aircraft certification process in accordance with the applicable certification specifications, for the aircraft cabin configuration used by the operator;

or

(2) if the number under (1) has not been established, the number of cabin crew established during the aircraft certification process for the maximum certified passenger seating configuration reduced by 1 for every whole multiple of 50 passenger seats of the aircraft cabin configuration used by the operator falling below the maximum certified seating capacity; or

(3) one cabin crew member for every fifty, or fraction of fifty, passenger seats installed on the same deck of the aircraft to be operated.

(e) For operations where more than one cabin crew member is assigned, the operator shall nominate one cabin crew member to be responsible to the pilot-in-command/commander.

(1) in the case of an aircraft with a total seating capacity not exceeding two hundred passengers, the number of cabin crew members carried shall not be less than one cabin crew member for every fifty passengers or a fraction thereof carried on the aircraft.

(2) in the case of an aircraft with a total seating capacity exceeding two hundred passengers, the number of cabin crew members there shall not be less than half the number of main exits in the aircraft, and in addition, when more than two hundred passengers are carried, there shall be one additional cabin crew member for every twenty - five passengers or a fraction thereof –

Provided that where the number of cabin crew members calculated in accordance with this paragraph exceeds the number of main exits in the aircraft, the operator of the aircraft shall be deemed to have been complied with this paragraph if the number of cabin crew members carried is equal to the number of main exits in the aircraft.

Determination of The Number and Composition of Cabin Crew

A safety risk management process shall be used in the planning, transition and implementation phase for minimum cabin crew operations for the aircraft of all sizes and aircraft based on manufacture's requirements.

CAAM continues to encourage all operators to propose and manage safety outcome by going beyond the regulation in looking for more innovative ways to manage their risk. The outcome shall involve a demonstration equivalent level of safety or better.

Cabin crew rostering, planned and actual duty periods and a system approach for management of disruptions including the recognition and mitigation of fatigue inducing factors;

(a) When determining the minimum number of cabin crew required to operate aircraft engaged in CAT operations, factors to be taken into account shall include:

(1) he number of doors/exits;

(2) the type(s) of doors/exits and the associated assisting evacuation means;

(3) the location of doors/exits in relation to cabin crew stations and the cabin layout;

(4) the location of cabin crew stations taking into account direct view requirements and cabin crew duties in an emergency evacuation including:

(i) opening floor level doors/exits and initiating stair or slide deployment;

(ii) assisting passengers to pass through doors/exits; and

(iii) directing passengers away from inoperative doors/exits, crowd control and passenger flow management;

(5) actions required to be performed by cabin crew in ditching, including the deployment of slide-rafts and the launching of life-rafts;

(6) additional actions required to be performed by cabin crew members when responsible for a pair of doors/exits; and

(7) the type and duration of the flight to be operated.

(b) When scheduling cabin crew for a flight, the operator shall establish procedures that take account of the experience of each cabin crew member. The procedures shall specify that the required cabin crew includes some cabin crew members who have at least 3 months or more experience as an operating cabin crew member.

(c) type and duration of the flight(s) to be operated with particular consideration of those whole of duty factors which may give rise to hazards or contribute to a compromise of the safety environment for both normal and emergency situations. Such factors include, but are not limited to, the following:

(1) cabin crew rostering, planned and actual duty periods and a system approach for management of disruptions including the recognition and mitigation of fatigue inducing factors;

(2) in flight workload, distribution and management of operational and service responsibilities; and

(3) a risk analysis of the effect of a minimum cabin crew complement in the context of—

(4) pre-departure duties;

(i) flight duties; and

(ii) post-flight duties.

(d) during critical phase of flight while aircraft is below 10,000 feet, cabin crew members shall be at their assigned station with a combined seat belt and a shoulder harness properly secured, and shall not perform any non-safety related activates which includes conversation that is not required but not limited to —

(i) fire emergencies – any outbreaks of fire; presence of smoke in the cabin;

(ii) medical emergencies;

(iii) existence of any abnormal noise or vibration during take-off and landing;

the observation of any fuel or other leakages.

ORO.CC.110 Conditions for assignment to duties

(a) No person shall act as a cabin crew member unless he—

(1) is at least 18 years of age;

(2) has been assessed in accordance with the applicable requirements of Medical Directives to be physically and mentally fit to perform their duties and discharge their responsibilities safely; and

(3) has successfully completed all applicable training and checking required by this part and are competent to perform the assigned duties in accordance with the procedures specified in the Operations Manual.

(b) Before assigning to duties cabin crew members who are working on a contract or part-time basis, the operator shall verify that all applicable requirements of this part are complied with, taking into account all services rendered by the cabin crew member to any other operator(s), to determine in particular:

(1) the total number of aircraft types and variants operated; and

(2) the applicable flight and duty time limitations and rest requirements.

(c) Operating cabin crew members, as well as their role with regard to the safety of passengers and flight, shall be clearly identified to the passengers.

ORO.CC.115 Conduct of training courses and associated checking

(a) Subject to the approval of the Chief Executive Officer, an operator shall establish a training programme.

(b) Each training course shall include theoretical and practical instruction together with individual or collective practice, as relevant to each training subject.

(c) Each training course shall be—

(1) conducted in a structured and realistic manner;

(2) performed by personnel appropriately qualified for the subject to be covered; and

(3) equipment and procedures.

(i) The operator shall establish training methods that take into account the following –

(A) training shall include the use of cabin training devices, audio-visual presentations, computer-based training and other types of training, as most appropriate to the training element; and

(B) a reasonable balance between the different training methods shall be ensured so that the cabin crew member achieves the level of proficiency necessary for a safe performance of all related cabin crew duties and responsibilities.

(ii) When assessing the representative training devices to be used, the operator shall –

(A) take into account that a representative training device may be used to train cabin crew as an alternative to the use of the actual aircraft or required equipment;

(B) ensure that those items relevant to the training and checking intended to be given accurately represent the aircraft or equipment in the following particulars:

(1) layout of the cabin in relation to doors/exits, galley areas and safety and emergency equipment stowage as relevant;

(2) type and location of passenger seats and cabin crew stations;

(3) doors/exits in all modes of operation, particularly in relation to the method of operation, mass and balance and operating forces, including failure of power-assist systems where fitted; and

(4) safety and emergency equipment of the type provided in the aircraft (such equipment may be 'training use only' and, for oxygen and protective breathing equipment, units charge with or without oxygen may be used); and

(c) Assess the following factors when determining whether a door/exit can be considered to be a variant of another type:

(1) Door/exit arming/disarming;

(2) Direction of movement of the operating handle;

(3) Direction of door/exit opening;

(4) Power-assist mechanism; and

(5) Assisting evacuation means such as slide and ropes.

(d) During or following completion of all training requirements, each cabin crew member shall undergo a check covering all training elements of the relevant training programme, except for CRM training. Checks shall be performed by personnel appropriately qualified to verify that the cabin crew member has achieved and/or maintains the required level of proficiency. Checking required for each training course shall be accomplished by the method appropriate to the training element that require individual practical participation may be combined with practical checks to be checked. These methods include:

(1) practical demonstration;

(2) computer-based assessment;

(3) in-flight checks; and

(4) oral or written tests.

(e) CRM training courses and CRM modules where applicable, shall be conducted by a cabin crew CRM instructor. When CRM elements are integrated in other training, a cabin crew CRM instructor shall manage the definition and implementation of the syllabus. The CRM shall be valid for a period of 36 months.

(1) Training environment

CRM training shall be conducted in the non-operational environment (classroom and computer-based) and in the operational environment (cabin training device and aircraft). Tools such as group discussions, team task analysis, team task simulation and feedback shall be used.

(2) Classroom training

Whenever possible, classroom training shall be conducted in a group session away from the pressures of the usual working environment, so that the opportunity is provided for cabin crew

members to interact and communicate in an environment conducive to learning.

(3) Computer-based training

Computer-based training shall not be conducted as a stand-alone training method but may be conducted as a complementary training method.

(4) Cabin training devices and aircraft

Whenever practicable, relevant parts of CRM training shall be conducted in representative cabin training devices that reproduce a realistic operational environment, or in the aircraft. During practical training, interaction shall be encouraged.

(5) Integration into cabin crew training

CRM principles shall be integrated into relevant parts of cabin crew training and operations, including checklists, briefings and emergency procedures.

(6) Combined CRM training for flight crew and cabin crew

(i) Operators shall provide combined training for flight crew and cabin crew during recurrent CRM training.

(ii) The combined training shall address at least:

(A) effective communication, coordination of tasks and functions of flight crew and cabin crew; and

(B) mixed multinational and cross-cultural flight crew and cabin crew, and their interaction, if applicable.

(iii) Combined CRM training shall be conducted by flight crew CRM Instructor/Facilitator or cabin crew CRM Instructor/Facilitator.

(iv) There shall be an effective liaison between flight crew and cabin

crew training departments. Provision shall be made for transfer of relevant knowledge and skills between flight crew and cabin crew CRM Instructor/Facilitators.

(7) Management system

CRM training shall address hazards and risks identified by the operator's management system described in ORO.GEN.200.

(8) Competency-based CRM training

Whenever practicable, the compliance-based approach concerning CRM training may be substituted by a competency-based approach. In this context, CRM training shall be characterized by a performance orientation, with emphasis on standards of performance and their measurement, and the development of training to the specified performance standards.

(9) (i) Contracted CRM training

If the operator chooses not to establish its own CRM training, another operator, a third party or a training organisation may be contracted to provide the training in accordance with ORO.GEN.205. In case of contracted CRM training, the operator shall ensure that the content of the course covers the specific culture, the type of operations and the associated procedures of the operator. When crew members from different operators attend the same course, the CRM training shall be specific to the relevant flight operations and to the trainees concerned.

(ii) Operator's CRM training

The operator's CRM training shall cover all elements listed in Table 1 of (g). Several training elements are specified as 'not required' for the operator's CRM training, since they are covered under the introductory CRM course for cabin crew as required in (Part-CC).

(iii) Operator aircraft type conversion CRM training

If the cabin crew member undertakes the operator's conversion training on an aircraft type, the applicable CRM training elements shall be covered as specified in Table 1 of (g).

(iv) Annual recurrent CRM training

(A) Annual recurrent CRM training shall be provided in such a way that all CRM training elements specified for the annual recurrent training in Table 1 of (g) are covered over a period not exceeding 3 years (36 months).

(B) Operators shall update their recurrent CRM training programme over a period not exceeding 3 years (36 months). The revision of the programme shall take into account information from the operator's management system.

(v) In-Charge cabin crew member course

(A) CRM training for In-charge cabin crew members shall be the application of knowledge gained in previous CRM training and operational experience relevant to the specific duties and responsibilities of an In- charge cabin crew member. The operator shall ensure that for the In-charge cabin crew member course the CRM training elements are integrated into the training, as specified in Table 1 of (g).

(B) During the training the In-charge cabin crew member shall demonstrate the ability:

(aa) to manage the operation; and

(bb) to take appropriate leadership and management decisions.

(vi) Training elements

The CRM training elements to be covered are specified in Table 1 of (g). The operator shall ensure that the following aspects are addressed:

(1) Resilience development

CRM training shall address the main aspects of resilience development. The training shall cover:

(i) Mental flexibility

Cabin crew shall be trained to:

(A) understand that mental flexibility is necessary to recognise critical changes;

(B) reflect on their judgement and adjust it to the unique situation;

(C) avoid fixed prejudices and over-reliance on standard solutions; and

(D) remain open to changing assumptions and perceptions.

(ii) Performance adaptation

Cabin crew shall be trained to:

(A) mitigate frozen behaviours, overreactions and inappropriate hesitation; and

(B) adjust actions to current conditions.

(2) Surprise and startle effect

CRM training shall address unexpected, unusual and stressful situations including interruptions and distractions. Therefore, CRM training shall be designed to prepare cabin crew to master sudden events and associated uncontrolled reactions.

(3) Cultural differences

CRM training shall cover cultural differences of multinational and cross-cultural crews. This includes recognising that**:**

(i) different cultures may have different communication specifics, ways of understanding and approaches to the same situation or problem;

(ii) difficulties may arise when crew members with different mother tongue communicate in a common language which is not their mother tongue; and

(iii) cultural differences may lead to different methods for identifying a situation and solving a problem.

(4) Operator's safety culture and company culture

CRM training shall cover the operator's safety culture, its company culture, the type of operations and the associated procedures of the operator. This shall include areas of operations that may lead to particular difficulties or involve unusual hazards.

(5) Case studies

(i) CRM training shall cover aircraft type-specific case studies, based on the information available within the operator's management system, including:

(A) accident and serious incident reviews to analyse and identify any associated non-technical causal and contributory factors, and instances or examples of lack of CRM; and

(B) analysis of occurrences that were well managed.

(ii) If relevant aircraft type-specific or operator-specific case studies are not available, the operator shall consider other case studies relevant to the scale and scope of its operations.

(6) CRM training syllabus

Table 1 below specifies which CRM training elements shall be covered in each type of training. The levels of training in Table 1 can be described as follows:

(7) 'Required' means training that shall be instructional or interactive in style to meet the objectives specified in the CRM training programme or to refresh and strengthen knowledge gained in a previous training.

'In-depth' means training that shall be instructive or interactive in style taking full advantage of group discussions, team task analysis, team task simulation, etc., for the acquisition or consolidation of knowledge, skills and attitudes. The CRM training elements shall be tailored to the specific needs of the training phase being undertaken.

Table 1 — Cabin Crew CRM training

CRM training elements	Operator's CRM training	Operator aircraft type conversion training	Annual recurrent training	In charge cabin crew member (ICC) course
General principles				
Human factors in aviation; General instructions on CRM principles and objectives; Human performance and limitations; Threat and error management.	Not required (covered under initial training required by Part-CC)	Required	Required	Required
Relevant to the individual cabin crew member				
Personality awareness, human error and reliability, attitudes and behaviours, self-assessment and self-critique; Stress and stress management; Fatigue and vigilance; Assertiveness, situation awareness, information acquisition and processing.	Not required (covered under initial training required by Part-CC)	Required	Required (3-year cycle)	Required
Relevant to the entire aircraft crew				

Shared situation awareness, shared information acquisition and processing; Workload management; Effective communication and coordination between all crew members including the flight crew as well as inexperienced cabin crew members; Leadership, cooperation, synergy, delegation, decision-making, actions; Resilience development; Surprise and startle effect; Cultural differences; Identification and management of the passenger human factors: crowd control, passenger stress, conflict management, medical factors.	In-depth	Required when relevant to the type(s)	Required (3-year cycle)	In-depth
Relevant to the operator and the organisation				
Operator's safety culture and company culture, standard operating procedures (SOPs), organisational factors, factors linked to the type of operations; Effective communication and coordination with other operational personnel and ground services; Participation in cabin safety incident and accident reporting.	In-depth	Required when relevant to the type(s)	Required (3-year cycle)	In-depth
Case- studies	In-depth	Required when relevant to the type(s)	In-depth	In-depth

For single cabin crew operations, ORO.CC.115(e) shall be applied with the following differences –

(a) Relevant training elements

CRM training shall focus on the elements specified in Table 1 of (g) of ORO.CC.115(e) which are relevant to single cabin crew operations. Therefore, single cabin crew CRM training shall include, among others –

(1) situation awareness;

(2) workload management;

(3) decision-making;

(4) resilience development;

(5) surprise and startle effect; and

(6) effective communication and coordination with
(i) the flight crew; and

(ii) other operational personnel and ground services.

(b) Computer-based training

Notwithstanding (a)(3), computer-based training may be conducted as a stand-alone training method for a cabin crew member operating on aircraft with a maximum operational passenger seating configuration of 19 or less.

CABIN CREW CRM INSTRUCTOR/FACILITATOR

Applicability

The provisions described herein:

(1) shall be fulfilled by cabin crew CRM Instructor/Facilitators responsible for classroom CRM training; and

(2) are not applicable to Instructor/Facilitators or instructors conducting training other than CRM training, but integrating CRM elements into this training. Nevertheless, Instructor/Facilitators or instructors who are integrating CRM elements into the aircraft type training, recurrent training or In-charge cabin crew member training shall have acquired relevant knowledge of human performance and limitations, and have completed appropriate CRM training.

(a) Qualification of cabin crew CRM Instructor/Facilitator

(1) A training and standardisation programme for cabin crew CRM Instructor/Facilitators shall be established.

(2) The cabin crew CRM Instructor/Facilitator, in order to be suitably

qualified, shall –

(i) have adequate knowledge of the relevant flight operations;

(ii) have received instructions on human performance and limitations (HPL);

(iii) have completed an introductory CRM course, as required in (Part-CC), and an operator's CRM training, as specified in ORO.CC.115(e);

(iv) have received training in group facilitation skills;

(v) have received additional training in the fields of group management, group dynamics and personal awareness; and

(vi) have demonstrated the knowledge, skills and credibility required to train the CRM training elements in the non-operational environment, as specified in Table 1 of ORO.CC.115(e).

(3) An experienced CRM Instructor/Facilitator may become a cabin crew CRM Instructor/Facilitator if he/she demonstrates a satisfactory knowledge of the relevant flight operations and the cabin crew working environment, and fulfils the provisions specified in (2)(ii) to (2)(vi).

(b) Training of Cabin Crew CRM Instructor/Facilitator

(1) Training of cabin crew CRM Instructor/Facilitators shall be both theoretical and practical. Practical elements shall include the development of specific Instructor/Facilitator skills, particularly the integration of CRM into day-to-day operations.

(2) The basic training of cabin crew CRM Instructor/Facilitators shall include the training elements for cabin crew, as specified in Table 1 of ORO.CC.115(e). In addition, the basic training shall include the following:

(i) introduction to CRM training;

(ii) operator's management system; and

(iii) characteristics, as applicable:

(A) of the different types of CRM trainings (initial, recurrent, etc.);

(B) of combined training; and

(C) related to the type of aircraft or operation.

(3) The refresher training of cabin crew CRM Instructor/Facilitators shall include new methodologies, procedures and lessons learned.

(4) The training of cabin crew CRM Instructor/Facilitators shall be conducted by cabin crew CRM Instructor/Facilitators with a minimum of 3 years' experience. Assistance may be provided by experts in order to address specific areas.

(c) Assessment of cabin crew CRM Instructor/Facilitator

(1) A cabin crew CRM Instructor/Facilitator shall be assessed by the operator when conducting the first CRM training course

(2) Assessment is the process of observing, recording, interpreting and debriefing the cabin crew CRM Instructor/Facilitator. The operator shall describe the assessment process in the operations manual. All personnel involved in the assessment must be credible and competent in their role.

(3) The final stage of the qualifying shall be conducted by CAAM. The assessment shall be valid for a period of 3 years (36 months).

(d) Recency and renewal of qualification as cabin crew CRM Instructor/Facilitator

(1) For recency of the 3-years (36 months) validity period, the cabin crew CRM Instructor/Facilitator shall:

(i) conduct at least 2 CRM training events in any 12-month period;

(ii) be assessed within the last 12 months of the 3-years (36 months) validity period by the operator; and

(iii) complete CRM Instructor/Facilitator refresher training within the 3-years (36 months) validity period.

(2) For renewal, i.e. when a cabin crew CRM Instructor/Facilitator does not fulfil the provisions of (1), he/she shall, before resuming as cabin crew CRM Instructor/Facilitator:

(i) comply with the qualification provisions of (b) and (d); and

(ii) complete CRM Instructor/Facilitator refresher training.

MINIMUM TRAINING TIMES

(a) The following minimum training times are appropriate:

(1) multi cabin crew operations:

(i) combined CRM training: 6 training hours over a period of 3 years (36 months); and

(ii) operator's CRM training: 6 training hours;

(2) operator's CRM training for single cabin crew operations: 4 training hours for a cabin crew member operating on aircraft with a maximum operational passenger seating configuration of 19 or less;

(3) cabin crew CRM Instructor/Facilitator –

(i) basic training:

(A) 18 training hours when the operator can justify that the trainee already has received sufficient and suitable instruction on training skills in order to conduct CRM training courses; or

(B) 30 training hours for trainees not fulfilling (A); and

(ii) 'Training hours' means actual training time excluding breaks.

(b) refresher training: 6 training hours.

DESIGN, IMPLEMENTATION AND EVALUATION OF CRM TRAINING

The checklist in Table 1 provides guidance on the design, implementation and evaluation of CRM training, and on their incorporation into the operator's safety culture. Elements of the operator's management systems and the competency-based approach are incorporated in the checklist**.**

Table 1 — Checklist for design, implementation, evaluation and incorporation of CRM training

Step	Description	Element
1	Needs analysis	Determine the necessary CRM competencies
		Develop CRM training goals
		Ensure the organisation is ready for CRM training
2	Design	Develop CRM training objectives
		Determine what to measure and how to measure it
3	Development	Describe the CRM learning environment
		Develop full-scale prototype of training
		Validate and modify CRM training
4	Implementation	Prepare trainees and environment
		Set a climate for learning (e.g. practice and feedback)
		Implement the CRM training programme
5	Evaluation	Determine training effectiveness
		Evaluate CRM training at multiple levels
		Revise the CRM training programme to improve
6	Incorporation	Establish an environment where CRM training is
		Reinforce CRM behaviours in daily work
		Provide recurrent CRM training

RESILIENCE DEVELOPMENT

(a) The main aspects of resilience development can be described as the ability to:

(1) learn ('knowing what has happened');

(2) monitor ('knowing what to look for');

(3) anticipate (‘finding out and knowing what to expect’); and

(4) respond (‘knowing what to do and being capable of doing it’).

(b) Operational safety is a continuous process of evaluation of and adjustment to existing and future conditions. In this context, and following the description in (a), resilience development involves an ongoing and adaptable process including situation assessment, self-review, decision and action. Training on resilience development enables crew members to draw the right conclusions from both positive and negative experiences. Based on those experiences, crew members are better prepared to maintain or create safety margins by adapting to dynamic complex situations.

(c) The training topics in (f)(1) of ORO.CC.115(e) are to be understood as follows:

(1) Mental flexibility

(i) The phrase ‘understand that mental flexibility is necessary to recognise critical changes’ means that crew members are prepared to respond to situations for which there is no set procedure.

(ii) The phrase ‘reflect on their judgement and adjust it to the unique situation’ means that crew members learn to review their judgement based on the unique characteristics of the given circumstances.

(iii) The phrase ‘avoid fixed prejudices and over-reliance on standard solutions’ means that crew members learn to update solutions and standard response sets, which have been formed on prior knowledge.

(iv) The phrase ‘remain open to changing assumptions and perceptions’ means that crew members constantly monitor the situation, and are prepared to adjust their understanding of the evolving conditions.

(2) Performance adaptation

(i) The phrase ‘mitigate frozen behaviours, overreactions and inappropriate hesitation’ means that crew members correct

improper actions with a balanced response.

(ii) The phrase ‘adjust actions to current conditions’ means that crew members’ responses are in accordance with the actual situation.

CABIN CREW CRM INSTRUCTOR/TRAINER/ FACILITATOR ASSESSMENT

(a) For assessing cabin crew CRM Instructor/Facilitators, the operator may nominate experienced cabin crew CRM Instructor/Facilitators who have demonstrated continued compliance with the provisions for a cabin crew CRM Instructor/Facilitator and capability in that role for at least 3 years (36 months).

(b) An operator that does not have the resources to conduct the assessment may employ a contractor approved by CAAM. The standard as regards the assessment is confirmed on a 3-year (36 months) basis by the operator.

(c) The checklist in Table 1 provides guidance on the assessment of a cabin crew CRM Instructor/Facilitator. If a cabin crew CRM Instructor/Facilitator is competent in his/her role, the response to the questions in Table 1 shall be ‘yes’. When answering the questions in Table 1, justifications and examples related to the responses given shall be provided.

Table 1 — Cabin crew CRM Instructor/Trainer/Facilitator assessment checklist

Questions to assess a cabin crew CRM Instructor/Facilitator	Response yes/no
Did the CRM Instructor/Facilitator demonstrate the knowledge required for the role?	
Did the CRM Instructor/Facilitator support CRM concepts?	
Did the CRM Instructor/Facilitator encourage trainees to participate, share their experiences and self- analyse?	
Did the CRM Instructor/Facilitator identify and respond to the trainees’ needs relative to expertise/experience?	
Did the CRM Instructor/Facilitator show how CRM is integrated in technical training?	
Did the CRM Instructor/Facilitator incorporate company CRM standards when appropriate?	

Did the CRM Instructor/Facilitator identify and discuss the non-technical reasons involved in accidents, incidents and events included in case studies?	
Did the CRM Instructor/Facilitator regularly check for understanding and resolve ambiguities?	
Did the CRM Instructor/Facilitator demonstrate effective instruction and facilitation skills?	

EQUIPMENT AND PROCEDURE

The following definitions apply for the purpose of training programmes, syllabi and the conduct of training and checking on equipment and procedures:

(a) 'Safety equipment' means equipment installed/carried to be used during day-to-day normal operations for the safe conduct of the flight and protection of occupants (e.g. seat belts, child restraint devices, safety card, safety demonstration kit).

(b) 'Emergency equipment' means equipment installed/carried to be used in case of abnormal and emergency situations that demand immediate action for the safe conduct of the flight and protection of occupants, including life preservation (e.g. drop-out oxygen, crash axe, fire extinguisher, protective breathing equipment, manual release tool, slide-raft).

(c) 'Normal procedures' means all procedures established by the operator in the operations manual for day-to-day normal operations (e.g. pre-flight briefing of cabin crew, pre-flight checks, passenger briefing, securing of galleys and cabin, cabin surveillance during flight).

'Emergency procedures' means all procedures established by the operator in the operations manual for abnormal and emergency situations. For this purpose, 'abnormal' refers to a situation that is not typical or usual, deviates from normal operation and may result in an emergency.

ORO.CC.120 Initial training course

(a) Each new entrant who does not already hold a valid cabin crew attestation issued in accordance with (Part-CC)

(1) shall be provided with an initial training course as specified in CC.TRA 220; and

(2) shall successfully undergo the associated examination before undertaking other training required by this part.

(i) When a new entrant to an operator conducting operations other than CAT is a cabin crew member, not holding a valid cabin crew attestation, who has already acquired experience as cabin crew in operations other than CAT, credit may be granted to the elements of the initial training programme he/she has previously completed if such training elements are documented in his/her training records.

(i) In such a case, the operator shall ensure that:

(A) the full training programme, as specified in Appendix 1 to Part-CC, has been covered, and

(B) the new entrant successfully undergoes the examination required by ORO.CC.120(a)(2).

(b) Elements of the initial training programme may be combined with the first aircraft type specific training and operator conversion training, provided that the requirements of CC.TRA 220 are met and any such element(s) are recorded as elements of the initial training course in the training records of the cabin crew members concerned.

ORO.CC.125 Aircraft type specific training and operator conversion training

(a) Each cabin crew member shall have completed appropriate aircraft type specific training and operator conversion training, as well as the associated checks, before being—

(1) first assigned by the operator to operate as a cabin crew member; or

(2) assigned by that operator to operate as a cabin crew member on another aircraft type.

(b) When establishing the aircraft type specific and the operator conversion training programmes and syllabus, the operator shall include, where available, the mandatory elements as specified in this part.

(c) The aircraft type specific training programme shall—

(1) involve training and practice on a representative training device or on the actual aircraft; and

(2) cover at least the following aircraft type specific training elements:

(i) aircraft description as relevant to cabin crew member duties;

(ii) all safety equipment and systems installed relevant to cabin crew member duties;

(iii) operation and actual opening, by each cabin crew member, of each type or variant of normal and emergency doors and exits in the normal and emergency modes;

(iv) demonstration of the operation of the other exits including flight crew compartment windows;

(v) fire and smoke protection equipment where installed;

(vi) evacuation slide training, where fitted; and

(vii) operation of the seat, restraint system and oxygen system equipment relevant to pilot incapacitation.

(d) The operator conversion training programme for each aircraft type to be operated shall—

(1) involve training and practice on a representative training device or on the actual aircraft;

(2) include training in the operator's standard operating procedures for cabin crew members to be first assigned to duties by the operator;

(3) The following training elements shall be covered as relevant to the aircraft type and the related operator's specifics

(c) The description shall cover all elements specific to the operator's cabin configuration and any differences with those previously covered in accordance with ORO.CC.125(c), including **–**

(1) required and additional cabin crew stations — location (including direct view), restraint systems, control panels;

(2) passenger seats — general presentation and associated operator's specific features and equipment;

(3) designated stowage areas;

(4) lavatories — operator's specific features, equipment and systems additional to the aircraft type specific elements;

(5) galley — location, appliances, water and waste system, including shut-off, sinks, drains, stowage, control panels, calls and signs; and where applicable

(6) crew rest areas — location, systems, controls, safety and emergency equipment;

(7) cabin dividers, curtains, partitions;

(8) lift location, use, controls;

(9) stowage for the containment of waste; and

(10) passenger hand rail system or alternative means.

(d) Safety and emergency equipment

Each cabin crew member shall receive realistic training on and demonstration of the location and use of all safety and emergency equipment carried, including –

(1) life jackets, infant life jackets and flotation devices;

(2) first-aid and drop-out oxygen, including supplementary systems;

(3) fire extinguishers and protective breathing equipment (PBE);

(4) crash axe or crowbar;

(5) emergency lights including torches;

(6) communication equipment, including megaphones;

(7) slide rafts and life rafts' survival packs and their contents;

(8) pyrotechnics (actual or representative devices);

(9) first-aid kits, emergency medical kits and their contents; and

(10) other portable safety and emergency equipment, where applicable.

(e) Normal and emergency procedures

Each cabin crew member shall be trained on the operator's normal and emergency procedures as applicable, with emphasis on the following:

(1) passenger briefing, safety demonstration and cabin surveillance;

(2) severe air turbulence;

(3) non–pressurisation, slow and sudden decompression, including the donning of portable oxygen equipment by each cabin crew member;

(4) other in-flight emergencies; and

(5) carriage of special categories of passengers (SCPs).

(f) Passenger handling and crowd control

Training shall be provided on the practical aspects of passenger preparation and handling, as well as crowd control, in various emergency situations as applicable to the operator's specific aircraft cabin configuration, and shall cover the following –

(1) communications between flight crew and cabin crew and use of all communications equipment, including the difficulties of coordination in a smoke-filled environment;

(2) verbal commands;

(3) the physical contact that may be needed to encourage people out of a door/exit and onto a slide;

(4) redirection of passengers away from unusable doors/exits;

(5) marshalling of passengers away from the aircraft;

(6) evacuation of special categories of passengers with emphasis on passengers with disabilities or reduced mobility; and

(7) authority and leadership.

(g) Fire and smoke training

(1) Each cabin crew member shall receive realistic and practical training in the

use of all fire-fighting equipment, including protective clothing representative of that carried in the aircraft.

(2) Each cabin crew member shall:

(i) extinguish an actual fire characteristic of an aircraft interior fire except that, in the case of halon extinguishers, an alternative extinguishing agent may be used; and

(ii) exercise the donning and use of PBE in an enclosed simulated smoke-filled environment with particular emphasis on identifying the actual source of fire and smoke.

(h) Evacuation procedures

Training shall include all the operator's procedures that are applicable to planned or unplanned evacuations on land and water. It shall also include, where relevant, the additional actions required from cabin crew members responsible for a pair of doors/exits and the recognition of when doors/exits are unusable or when evacuation equipment is unserviceable.

(i) Pilot incapacitation procedures

Unless the minimum flight crew is more than two, each cabin crew member shall be trained in the procedure for pilot incapacitation. Training in the use of flight crew checklists, where required by the operator's standard operating procedures (SOPs), shall be conducted by a practical demonstration.

(j) CRM

(1) The operator shall ensure that all applicable CRM training elements, as specified in Table 1 of ORO.CC.115(e), are covered to the level required in the column 'Operator aircraft type conversion training'.

(2) The operator's CRM training and the CRM training covered during the operator aircraft type conversion training shall be conducted by at least one cabin crew CRM instructor.

ORO.CC.130 Differences training

(a) In addition to the training required in ORO.CC.125, the cabin crew member shall complete appropriate training and checking covering any differences before being assigned on:

(1) a variant of an aircraft type currently operated; or

(2) a currently operated aircraft type or variant with different:

(i) safety equipment;

(ii) safety and emergency equipment location; or

(iii) normal and emergency procedures.

(b) The differences training programme shall:

(1) be determined as necessary on the basis of a comparison with the training programme completed by the cabin crew member, in accordance with ORO.CC.125(c) and (d), for the relevant aircraft type; and

(2) involve training and practice in a representative training device or the actual aircraft as relevant to the difference training element to be covered.

(c) When establishing a differences training programme and syllabus for a variant of an aircraft type currently operated, the operator shall include, where available, the relevant elements defined in the mandatory part of the operational suitability data established.

Reference to be made to ORO.CC.125(b) & ORO.CC.130(c) Aircraft type specific training and operator conversion training & differences training

ORO.CC.135 Familiarisation

After completion of aircraft type specific training and operator conversion training on an aircraft type, each cabin crew member shall complete appropriate supervised familiarisation on the type before being assigned to operate as a member of the

minimum number of cabin crew member required in accordance with ORO.CC.100 of this FOD.

(a) For commercial air transport operations, familiarisation of cabin crew to a new aircraft type or variant shall be completed in accordance with the following, as relevant—

(1) new entrant cabin crew

each new entrant cabin crew member having no previous comparable operating experience shall participate in—

(i) a familiarisation visit, as described in (c), to the aircraft to be operated; and

(ii) familiarisation flights, as described in (b).

(2) cabin crew operating on a subsequent aircraft type—

a cabin crew member assigned to operate on a subsequent aircraft type with the same operator shall participate either in:

(i) a familiarisation flight, as described in (b); or

(ii) a familiarisation visit, as described in (c), to the aircraft type to be operated.

(b) Familiarisation flights

(1) During familiarisation flights, the cabin crew member shall be assigned in addition to the minimum number of cabin crew required in accordance with ORO.CC.100 and if applicable ORO.CC.200.

(2) Familiarisation flights shall be:

(i) conducted under the supervision of the In-charge cabin crew member;

(ii) structured and conducted with the cabin crew member participating in pre-flight, in-flight and post-flight safety duties;

(iii) operated with the cabin crew member wearing the operator's cabin crew uniform; and

(iv) recorded in the training record of the cabin crew member.

(c) Aircraft familiarisation visits—

(1) Aircraft visits shall enable the cabin crew member to become familiar with the aircraft environment and its equipment. Accordingly, aircraft visits shall be conducted by appropriately qualified persons. The aircraft visit shall provide an overview of the aircraft's exterior, interior and aircraft systems with emphasis on the following—

(i) interphone and public address systems;

(ii) evacuation alarm systems;

(iii) emergency lighting;

(iv) smoke detection systems;

(v) Safety and emergency equipment;

(vi) flight crew compartment;

(vii) cabin crew stations;

(viii) lavatories;

(ix) galleys, galley security and water shut-off;

(x) cargo areas if accessible from the passenger compartment during flight;

(xi) circuit breaker panels located in the passenger compartment;

(xii) crew rest areas; and

(xiii) doors/exits location and environment.

(2) An aircraft familiarisation visit may be combined with the aircraft type specific training or operator's conversion training required by ORO.CC.125.

(d) For cabin crew members assigned to operations other than commercial air transport, familiarisation shall be completed by means of an aircraft familiarisation visit, or a familiarisation flight, as appropriate taking into account the aircraft type to be operated by the cabin crew member.

Course Type	Familiarisation Flight
Initial	min 2 to max 5
Conversion	min 2
Abridge	min 2
Requalification or refresher	min 2

Note: Unsatisfactory performance shall be assigned for either retraining or additional Familiarisation flights

ORO.CC.140 Recurrent training

An operator shall establish and maintain a training programme, approved by the CAAM, to be completed by all persons before being assigned as a cabin crew member. Cabin crew members shall complete a recurrent training programme annually as specified in this FOD Part CC. These training programmes shall ensure that each person is—

(a) competent to execute those safety duties and functions which the cabin crew member is assigned to perform in the event of an emergency or in a situation requiring emergency evacuation;

(b) drilled and capable in the use of emergency and life-saving equipment required to be carried, such as life jackets, life rafts, evacuation slides, emergency exits,

portable fire extinguishers, oxygen equipment, first-aid and universal precaution kits, and automated external defibrillators;

(c) when serving on aircraft operated above 3000 m (10000 ft.), knowledgeable as regards the effect of lack of oxygen and, in the case of pressurised aeroplanes, as regards physiological phenomena accompanying a loss of pressurisation;

(d) aware of other cabin crew members' assignments and functions in the event of an emergency so far as is necessary for the fulfilment of the cabin crew member's own duties;

(e) aware of the types of dangerous goods which may, and may not, be carried in a passenger cabin; and

(f) knowledgeable about human performance as related to passenger cabin safety duties including flight crew-cabin crew member coordination.

(g) Each cabin crew member shall complete annually recurrent training and checking.

(h) Recurrent training shall cover the actions assigned to each member of the cabin crew in normal and emergency procedures and drills relevant to each aircraft type and/or variant to be operated.

(i) Aircraft type specific training elements:

(1) Recurrent training shall include annually touch-drills by each cabin crew member for simulating the operation of each type or variant of normal and emergency doors and exits for passenger evacuation.

(i) operation and actual opening by each cabin crew member, in a representative training device or in the actual aircraft, of each type or variant of normal and emergency exits in the normal and emergency modes;

(ii) actual operation by each cabin crew member, in a representative training device or in the actual aircraft, of the flight crew

compartment security door, in both normal and emergency modes, and of the seat and restraint system, and a practical demonstration of the oxygen system equipment relevant to pilot incapacitation;

(II) demonstration of the operation of all other exits including the flight crew compartment window.

(2) Recurrent training shall also include at intervals not exceeding three years (36 months):

(I) demonstration of the use of the life-raft, or slide raft, where fitted.

(II) Fire and smoke evacuation drills

(b) Operator specific training elements:

(1) Recurrent training shall include annually:

(i) by each cabin crew member:

(A) location and handling of all safety and emergency equipment installed or carried on board; and

(B) the donning of life-jackets, portable oxygen and protective breathing equipment (PBE);

(ii) stowage of articles in the passenger compartment;

(iii) procedures related to aircraft surface contamination;

(iv) emergency procedures;

(v) evacuation procedures;

(vi) incident and accident review;

(vii) crew resource management;

(viii) aero-medical aspects and first aid including related equipment;

(ix) security procedures.

(2) Recurrent training shall also include at intervals not exceeding three years (36 months):

(i) use of pyrotechnics (actual or representative devices);

(ii) practical demonstration of the use of flight crew checklists;

(iii) realistic and practical training in the use of all fire-fighting equipment, including protective clothing, representative of that carried in the aircraft;

(iv) by each cabin crew member:

(A) extinguishing a fire characteristic of an aircraft interior fire;

(B) donning and use of PBE in an enclosed simulated smoke-filled environment.

(3) CRM training shall satisfy the following:

(i) the applicable training elements specified in Table 1 of ORO.CC.115(e) shall be covered within a 3-year (36 months) cycle to the level required by column 'Annual Recurrent Training';

(ii) the definition and implementation of the CRM training programme shall be managed by a cabin crew CRM Instructor/Facilitator; and

(iii) when CRM training is provided by stand-alone modules, it shall be conducted by at least one cabin crew CRM Instructor/Facilitator.

Additional triennial elements of recurrent training programme

(1) Training on the operation of normal and emergency doors/exits shall cover failure of power assist systems where fitted. This shall include the actions and forces required to operate and deploy evacuation slides, and additional training when relevant for cabin crew members responsible for a pair of doors/exits.

(2) Training in the use of all firefighting equipment, including protective clothing, representative of that carried in the aircraft shall include individual practice by each crewmember to extinguish a fire characteristic of an aircraft interior fire except that, in the case of halon extinguishers, an alternative extinguishing agent may be used. Training shall place particular emphasis on identifying the actual source of fire or smoke.

The operator may determine that such training is to be completed at shorter intervals, taking into account the route structure, passenger profiles, aircraft types operated, seasonal demands and operations.

(c) periods:

(1) The annual recurrent training validity period shall be 12 calendar months counted from the day of their attendance. As an example, if the crewmembers base month is in October, the crew member remains qualified until the following October (e.g. training commence on 27 October 2018, validity until 26 October 2019), there shall not be any grace month, if the crew members has not attended annual recurrent training, the cabin crew is no longer qualified to fly.

(2) Training on the operation of normal and emergency doors/exits shall cover failure of power assist systems where fitted. This shall include the actions and forces required to operate and deploy evacuation slides, and additional training when relevant for cabin crew members responsible for a pair of doors/exits and shall be conducted annually.

(3) Training in the use of all firefighting equipment, including protective clothing, representative of that carried in the aircraft shall include individual practice by each cabin crew member to extinguish a fire characteristic of an aircraft interior fire except that, in the case of halon extinguishers, an alternative extinguishing agent may be used. Training shall place particular emphasis on identifying the actual source of fire or smoke. Where the validity period shall be 36 months.

Training Type	Validity	Remarks
Safety & Emergency Procedures Training	Initial/Conversion/Recurrent 12 months	Crewmembers are required to complete the training. (if the crew member has not attended annual recurrent training, the cabin crew is no longer qualified to fly.)
Firs Aid and Medical Aspects	Initial/Conversion/Recurrent 12 months	Cabin crew members are required to complete the training (Flight crew subject to operator's requirement as only Initial Training is

		required)
Dangerous Goods (DG)	Initial /Conversion/Recurrent 24 months	Crewmembers are required to complete the training
Aviation Security (AVSEC)	Initial /Conversion/Recurrent 24 months	Crewmembers are required to complete the training
Crew Resource Management (CRM)	Initial /Conversion/Recurrent 36 months	Crewmembers are required to complete the training

PRACTICAL DRILLS

Where possible, Crewmember should participate in a joint training activity or exercises to improve coordination and mutual understanding of human factors involved in addressing emergency situations and security threats**.**

Practical Drill	Validity	Remarks
Aircraft. Evacuation/Slide Drill	12 months	Crewmember shall complete evacuation slide training and participate in the cabin preparation, crowd control, emergency commands and other related duties.
Swimming Drill/ Wet Dinghy Drill	Initial / Conversion/ Recurrent 36 months	Crewmembers are required to complete the swimming drill. A life-raft exercise and wet dinghy shall be completed for crewmembers an aircraft fitted with life- raft or slide-raft
Fire Fighting and Smoke Drill	Initial / Conversion/ Recurrent 36 months	Crewmembers are to undergo a realistic fire drill and the practical use of all firefighting equipment in a simulated condition representative of an aircraft interior fire
Door/Exit Drill	Initial / Conversion/ Recurrent 12 months	Crewmembers are to practice the operation and actual opening of all doors.

		Practical drills is performed with the door in normal and emergency mode
Safety Equipment	Initial / Conversion/ Recurrent 12 months	Crewmembers are required to have hands-on training yearly on portable oxygen cylinders, fire extinguishers, PBE and other appropriate equipment which includes Public Address System
First Aid Practical	Initial / Conversion/ Recurrent 12 months	Cabin crew are required to undergo annual practical training in artificial respiration and Cardiopulmonary Resuscitation (CPR) using a training device designed for the purpose during training e.g. resuscitator, AED

Notwithstanding of the above, the operator may be more stringent on the validity this is to accommodate crew scheduling conflicts.

ORO.CC.145 Refresher / Requalification training

Refresher

(a) When a cabin crew member, during the preceding six (6) months within the validity period of the last relevant recurrent training and checking. The "last required training" may be aircraft type specific/operator conversion training or recurrent training, as relevant to the cabin crew member's particular case. —

(1) has not performed any flying duties, he shall, before being reassigned to such duties, complete refresher training and checking for each aircraft type to be operated; or

(2) has not performed flying duties on one particular aircraft type, he shall, before being reassigned to duties, complete on that aircraft type—

(i) refresher training and checking; or

(ii) two familiarisation flights in accordance with ORO.CC.135 and ORO.CC 145.

(b) The refresher training programme for each aircraft type shall at least cover—

(1) emergency procedures;

(2) evacuation procedures;

(3) operation and actual opening, by each cabin crew member, of each type or variant of normal and emergency exits and of the flight crew compartment security door in the normal and emergency modes;

(4) demonstration of the operation of all other exits including the flight crew compartment windows; and

(5) location and handling of all relevant safety and emergency equipment installed or carried on-board.

(6) Training on emergency procedures include pilot incapacitation procedures and crowd control techniques as applicable to the aircraft type; and

(c) The operator may elect to replace refresher training by recurrent training if the re-instatement of the cabin crew member's flying duties commences within the validity period of the last recurrent training and checking. If that validity period has expired a requalifying training shall be conducted as specified in ORO.CC.125.

FREQUENCY OF REFRESHER TRAINING

For aircraft with complex equipment or procedures, the operator shall consider the need for refresher training to be completed by cabin crew members who have been absent from flying duties for less than 6 months.

Requalifying training

(a) Requalification programmes shall be defined for cabin crew members whose qualifications have expired for any reason (e.g. prolonged absence from flying duties), as part of the process to regain qualification enabling the cabin crew member to perform the required duties and responsibilities. This is determined based on the applicable validity period(s), namely the time elapsed since the cabin crew member's last required training. The cabin crew member may need to follow a specific series of steps in order to regain qualification.

(b) Requalification shall be conducted in accordance with Part CC where applicable. Part CC may require requalification based on different time frames or circumstances. The operator shall establish a process, based on the applicable validity periods of the required training, to monitor when a cabin crew member's qualification(s) expires. The cabin crew member shall complete the training required for requalification prior to being assigned as part of the operating crew.

This training and the associated checking shall be accomplished through classroom instruction, and/or CBT, as well as hands-on and simulated exercises with a representative training device capable of reproducing the appropriate environment and the equipment characteristics, or on an actual aircraft.

Section 2
Additional requirements for commercial air transport operations

ORO.CC.200 In-charge cabin crew member

(a) When more than one cabin crew member is required, the composition of the cabin crew shall include an in-charge cabin crew member nominated by the operator.

(b) The operator shall not nominate cabin crew members to the position of in-charge cabin crew member unless he—

(1) has at least 1 year of experience as operating cabin crew member; and

(2) has successfully completed an in-charge cabin crew member training course and the associated check.

(c) The in-charge cabin crew training course shall cover all duties and responsibilities of in-charge cabin crew and shall include at least the following elements—

(1) pre-flight briefing;

(i) operating as a crew;

(ii) allocation of cabin crew stations and responsibilities; and

(iii) consideration of the particular flight, aircraft type, equipment, area and type of operation, including extended range operations with two-engine aeroplanes (ETOPS) and special categories of passengers with emphasis on passengers with disabilities or reduced mobility, infants and stretcher cases

(2) Cooperation within the crew:

(i) discipline, responsibilities and chain of command;

(ii) importance of coordination and communication; and

(iii) pilot incapacitation.

(3) Review of operator requirements and legal requirements:

(i) passenger briefing, safety briefing cards;

(ii) securing of galleys;

(iii) stowage of cabin baggage;

(iv) electronic equipment;

(v) procedures when fuelling with passengers on board;

(vi) turbulence; and

(vii) documentation.

(d) Accident and incident reporting.

When the level of turbulence so requires, and in the absence of any instructions from the flight crew, the In-charge cabin crew member shall be entitled to discontinue non-safety-related duties and advise the flight crew of the level of turbulence being experienced and the need for the fasten seat belt signs to be switched on. This shall be followed by the cabin crew securing the passenger cabin and other relevant areas.

(e) Human factors and CRM:

The operator shall ensure that all applicable elements specified in Table 1 of ORO.CC.115(e) are integrated into the training and covered to the level required by Column 'In-charge Cabin Crew Course'.

(f) Flight and duty time limitations and rest requirements (FTL).

(g) The in-charge cabin crew member shall be responsible to the PIC for the conduct and coordination of normal and emergency procedures specified in the OM, including for discontinuing non-safety-related duties for safety or security purposes.

(h) An operator shall establish procedures to select the most appropriately qualified cabin crew member to act as in-charge cabin crew member if the nominated in-charge cabin crew member becomes unable to operate. Changes to these procedures shall be notified to the CAAM.

UNABLE TO OPERATE

(a) Replacement of In-charge cabin crew member at a base of the operator

An In-charge cabin crew member who did not report for or cannot commence the assigned flight or series of flights originating from a base of the operator shall be replaced without undue delay.
The flight shall not depart unless another In-charge cabin crew member has been assigned.

(b) Replacement of incapacitated or unavailable In-charge cabin crew member

(1) An In-charge cabin crew member, who becomes incapacitated during a flight or series of flights, or unavailable at a stopover (layover) point, shall be replaced without undue delay by another In-charge cabin crew member qualified on the concerned aircraft type/variant. If there is no other In-charge cabin crew member, the most appropriately qualified cabin crew member shall be assigned to act as In-charge cabin crew member in order to reach a base of the operator.

(2) If during the series of flights, the aircraft transits via a base of the operator, the assigned cabin crew member acting as In-charge cabin crew member shall be replaced by another In-charge cabin crew member.

Selection of the most appropriately qualified cabin crew member shall take into account if the individual's experience as operating cabin crew member is adequate for the conduct of duties required of an In-charge cabin crew member. The selected cabin crew member shall have operational experience on the concerned aircraft type/variant.

REPLACEMENT OF INCAPACITATED OR UNAVAILABLE IN-CHARGE CABIN CREW MEMBER BY ANOTHER IN-CHARGE CABIN CREW MEMBER.

To ensure that another In-charge cabin crew member is assigned without undue delay, the operator shall take appropriate measures. These include, but are not limited to, the following—

(a) to ensure that a flight or series of flights do not depart from an aerodrome where the In-charge cabin crew member is available or can be made available, the operator may –

(i) appoint an in-charge cabin crew member originally assigned to another flight and who is available at the concerned base or stopover (layover) point if the reporting time for that flight provides sufficient time to find a replacement; or

(ii) assign an In-charge cabin crew member who is on standby to operate the flight or to position to the destination where the nominated in-charge cabin crew member has becomeincapacitated or unavailable to operate;

(b) the operator shall utilise another In-charge cabin crew member if he is among the operating crew on the same flight;

(c) in case of unavailable In-charge cabin crew member, the operator shall use the available time and resources to replace him at the stopover (layover) point with another In-charge cabin crew member;

(d) the operator shall consider including the identification of the most appropriately qualified cabin crew member in pre-flight briefings.

Note— Flight or series of flights refers to a period that commences when a cabin crew member is required to report for duty, which includes a sector or a series of sectors, and finishes when the aircraft finally comes to rest and the engines are shut down, at the end of the last sector on which the cabin crew member acts as an operating crew member.

ORO.CC.205 Reduction of the number of cabin crew member during ground operations and in unforeseen circumstances

(a) Whenever any passengers are on board an aircraft, the number of cabin crew member required in accordance with ORO.CC.100 shall be present in the passenger compartment.

(b) Subject to the conditions specified in paragraph (c) below, this number may be reduced—

(1) during normal ground operations not involving refuelling/de-fuelling when the aircraft is at its parking station; or

(2) in unforeseen circumstances if the number of passengers carried on the flight is reduced. In this case a report shall be submitted to the CAAM after completion of the flight.

Unforeseen circumstances in this context refer to incapacitation and unavailability of the In-charge cabin crew member or a cabin crew member as follows—

(i) 'Incapacitation' means a sudden degradation of medical fitness that occurs during flight duty period either in-flight or during a flight transit of the same flight duty period away from operator's base and that precludes the In-charge cabin crew member or cabin crew member from performing his duties. Incapacitation prior to dispatch of the aircraft from a base of the operator does not substantiate a reduction of the cabin crew complement below the minimum required.

(ii) 'Unavailability' means circumstances at a stopover (layover) destination that preclude the in-charge cabin crew member or cabin crew member from reporting for the flight duty period, such as traffic jams that prevent the In-charge cabin crew member or cabin crew member from presenting himself at the crew pick-up point in time, difficulties with local authorities, health problems, death, etc. Unavailability does not refer to insufficient number or absence of cabin crew members on standby, or absence from work due to pregnancy, maternity/paternity leave, parental leave, medical leave, sick leave, or any other absence from work.

Note – This ORO.CC.205 is not applicable for operations originating from the main base or hub.

(c) Conditions are as follows—

(1) procedures ensuring that an equivalent level of safety is achieved with the reduced number of cabin crew member, in particular for evacuation of passengers, are established in the OM;

(2) the reduced cabin crew member includes an In-charge cabin crew member as specified in ORO.CC.200(e);

(3) at least one cabin crew member is required for every 50, or fraction of 50, passengers present on the same deck of the aircraft;

(4) in the case of normal ground operations with aircraft requiring more than one cabin crew member, the number determined in accordance with paragraph (c)(3) above shall be increased to include one cabin crew member per pair of floor level emergency exits.

PROCEDURES WITH REDUCED NUMBER OF CABIN CREW

(a) During ground operations, if reducing the applicable minimum required number of cabin crew, the operator shall ensure that the procedures required by ORO.CC.205(c)(1) specify that –

(1) electrical power is available on the aircraft;

(2) a means of initiating an evacuation is available to the in-charge cabin crew member or at least one member of the flight crew is in the flight crew compartment;

(3) cabin crew stations and associated duties are specified in the operations manual; and

(4) cabin crew remain aware of the position of servicing and loading vehicles at and near the exits.

Additionally, in the case of passengers' embarkation:

(5) the in-charge cabin crew member shall have performed the pre-boarding safety briefing to the cabin crew; and

(6) the pre-boarding cabin checks shall have been completed.

(b) If, in unforeseen circumstances, the number of cabin crew members is reduced below the applicable minimum required number, for example in the event of incapacitation or unavailability of cabin crew, the procedures established for this purpose in the operations manual shall take into consideration at least the following –

(1) reduction of passenger numbers;

(2) reseating of passengers with due regard to doors/exits and other applicable limitations; and

(3) relocation of cabin crew taking into account the factors specified in ORO.CC.100 and any change of procedures.

ORO.CC.210 Additional conditions for assignment to duties

Cabin crew members shall be assigned to duties, and operate, on a particular aircraft type or variant if they –

(a) holds a valid cabin crew attestation;

(b) are qualified on the type or variant in accordance with this Subpart;

(c) comply with the other applicable requirements of this Subpart part and FOD 60CA-16; and

(d) The uniform to be worn shall be such as not to impede the performance of their duties as required for the safety of passengers and flight during operations, and shall allow passengers to identify the operating cabin crew including in an emergency situation.

ORO.CC.215 Training and checking programmes and related documentation

(a) Training and checking programmes including syllabus required by this part shall be approved by the CAAM and specified in the OM.

(b) After a cabin crew member has successfully completed a training course and the associated check, the operator shall—

(1) update the cabin crew member's training records in accordance with ORO.MLR.115; and

(2) provide him with a list showing updated validity periods as relevant to the aircraft type(s) and variant(s) on which the cabin crew member is qualified to operate. When providing the updated validity list of aircraft type/variant qualifications to cabin crew members having successfully completed a training course and the associated checking, the operator shall indicate to show validity of qualification(s).

ORO.CC.250 Operation on more than one aircraft type or variant

(a) A cabin crew member shall not be assigned to operate on more than three aircraft types, except that, with the approval of the CAAM.

(b) For the purpose of paragraph (a), the CAAM may approves the operation of the fourth aircraft types if for at least two of the types—

(1) safety and emergency equipment and type-specific normal and emergency procedures are similar; and

(2) non-type-specific normal and emergency procedures are identical.

(c) For the purpose of (b) and for cabin crew training and qualifications, the operator shall determine—

(1) each aircraft as a type or a variant taking into account, where available, the relevant elements defined in the mandatory part of the operational suitability data established in accordance with Regulation for the relevant aircraft type or variant; and

(2) variants of an aircraft type to be different types if they are not similar in the following aspects:

(i) emergency exit operation;

(ii) location and type of portable safety and emergency equipment; and

(iii) type-specific emergency procedures.

(3) all portable safety and emergency equipment is stowed in the same, or in exceptional circumstances, in substantially the same location;

(4) all portable safety and emergency equipment requires the same method of operation;

(5) portable safety and emergency equipment includes:

(i) fire-fighting equipment;

(ii) protective breathing equipment (PBE);

(iii) oxygen equipment;

(iv) crew life-jackets;

(v) torches;

(vi) megaphones;

(vii) first-aid equipment;

(viii) survival and signalling equipment; and

(ix) other safety and emergency equipment, where applicable.

(d) The type-specific emergency procedures to be considered shall include at least the following:

(1) land and water evacuation;

(2) in-flight fire;

(3) non-pressurisation, slow and sudden decompression; and

(4) pilot incapacitation.

(e) When determining similarity of doors/exits in the absence of operational suitability data for the relevant aircraft type(s) or variant(s), the following factors shall be assessed, except for self-help exits, such as type III and type IV exits, that need not be included in the assessment:

(1) door/exit arming and disarming;

(2) direction of movement of the operating handle;

(3) direction of door/exit opening;

(4) power assist mechanisms; and

(5) assisting evacuation means.

Safety Briefing for Cabin Crew

When changing aircraft type or variant during a series of flight sectors, the cabin crew safety briefing shall include a representative sample of type-specific normal and emergency procedures and safety and emergency equipment applicable to the actual aircraft to be operated for the immediately subsequent flight sector.

ORO.CC.255 Single cabin crew member operations

(a) The operator shall select, recruit, train and check the proficiency of cabin crew members to be assigned to single cabin crew member operations according to criteria appropriate to this type of operation.

(b) Cabin crew members who have no previous operating experience as single cabin crew member shall only be assigned to such type of operation after they have—

(1) completed training as required in (c) in addition to other applicable training and checking required by this part;

(2) successfully passed the checks verifying their proficiency in discharging their duties and responsibilities in accordance with the procedures specified in the OM; and

(3) undertaken familiarisation flying of at least 20 hours and 15 sectors on the relevant aircraft type under the supervision of an appropriately experienced cabin crew member.

(c) The following additional training elements shall be covered with particular emphasis to reflect single cabin crew operations—

(1) responsibility to the PIC for the conduct of normal and emergency procedures;

(2) importance of coordination and communication with the flight crew, in particular when managing unruly or disruptive passengers;

(3) review of operator requirements and legal requirements;

(4) documentation;

(5) accident and incident reporting; and

(6) flight and duty time limitations and rest requirements.

ORO.CC.300 Instructor training and qualification

Operators shall equip the Cabin Safety Instructors their training requirements as follows—

(a) "Train the Trainer" course; and

(b) Instructor Qualification Program (IQP) which is an in- depth coverage of the subject matter on which the instruction is to be conducted.

ORO.CC.301 Area of instruction

The areas of instruction shall be divided as follows—

(a) Civil Aviation Act 1969;

(b) MCAR;

(c) circulars, notices, directives or information as issued by the Chief Executive Officer;

(d) SOP;

(e) Safety Emergency Procedures (SEP);

(1) Human Factors/CRM

(2) Dangerous Goods Regulation (DGR)/Dangerous Goods Awareness (DGA)

(3) Security

(4) SMS

(f) Cabin crew duties and responsibilities;

(g) Computer based training methodology; and

(h) First Aid

ORO.CC.302 Cabin Crew Instructor qualification

(a) Cabin Crew Training shall be conducted by suitably qualified instructors, who have the knowledge, ability and experience to perform such training.

(b) The Cabin crew Instructors shall meet the following criteria and have to be authorized by CAAM before assigning them with any kind of instructional privileges—

(1) Operational Experience

(i) Work Experience

Shall have six (6) years of uninterrupted and active in-flight experience as a cabin crew member, where two (2) years of experience as a cabin crew in charge in an aircraft operated by more than one crew member.

(A) Complete the Initial Qualifying Programme (IQP) for Initial, Conversion and Recurrent Training Programme by stages base on aircraft type as follows –

(B) Attend Class as Course Participant (including Examination and Practical Assessment)

(C) Observers and Participate Partial Instructional Delivery (Theory, Practical Lessons) with the help and guidance of the established/supervisory Instructor

(D) Conduct Class under supervision of established/supervisory Instructor.

(2) Fleet Experience

Fleet Experience (type rating) of each aircraft or successfully complete an approved type course of each aircraft type for which the instructional privilege is sought.

Note – (1) The operational experience can be waived for subject matter expert for conducting cabin crew training on generic subject areas. Example Cabin Familiarization, for those who are current on the particular fleet.

Note: – (2) The operator is to ensure that the participants complete the whole duration and in attendance throughout then IQP. (Initial Qualifying Programme (IQP) for Initial, Conversion and Recurrent Training Programme).

(2) Training/Competencies

(i) Instructor Training

Shall complete an approved “Instructor Training” or “Train the Trainer” course;

(ii) Subject Area-Training

Shall complete intensive coverage of the respective courseware for which the training is to be conducted; and

(iii) Competency

Shall demonstrate satisfactory instructional capabilities while conducting at least one supervision class in the presence of the CAAM Inspector for each instructional privilege is sought.

ORO.CC.303 Additional requirements for specific subject areas

(a) In addition to the above requirements, the complexity of cabin crew training course ware demands additional qualifications in order to exercise the privilege of instruction on certain subject areas as follows—

(1) Cabin Familiarization, Aviation Terminology and SEP Instructors.

(i) Cabin Crew Certificate holders with aircraft type rating for which the instruction is to be conducted; or

(ii) Previous Operational Experience as a cabin crew with approved specific aircraft type course (for Ground Instruction only); or

(iii) Instructor pilots with valid license and type rating of the respective aircraft and have completed an appropriate Cabin Familiarization, Aviation Terminology /SEP Instructor Course.

(2) Human Factors/CRM Instructors

(i) Shall complete an instructional course on CRM and Human Factor principles; and

(ii) Be appropriately qualified to integrate elements of CRM into all the relevant components of a Cabin Crew Training program.

An experienced non-cabin crew CRM instructor may be authorized to be a cabin crew CRM instructor, provided that the instructor demonstrates a satisfactory knowledge of the nature of the operation, the relevant specific aircraft types and company SOPs as applicable to cabin crew duties and responsibilities.

(3) First Aid Instructor

(i) Shall be qualified as an Aviation Medical Instructor/Facilitator; or

(ii) Approved Medical Practitioners; who poses a valid Staff Registered Nurse (SRN) Certificate or Diploma in Nursing or

(iii) Cabin Crew with First Aid training such as Staff Registered Nurse (SRN) Certificate, Diploma in Nursing, First Responder, Life Support Training (FRLS), Basic Life Support Certification Course (BLS) or its equivalent, which is recognized by health ministry.

(4) DGR and Aviation Security Instructor/Facilitator

Authorized DGR and Aviation Security Instructors with adequate knowledge of the operator’s training needs as related to the nature of

operation as well as associated duties and responsibilities of cabin crew. Recurrent Training shall take place within 24 months of previous training to ensure knowledge is current, a test to be undertaken to verify understanding of the regulations and a certificate shall be issued. The operator shall liaise with the relevant CAAM sectors/divisions on the training qualification.

ORO.CC.304 Selection process

Prior to an organization authorizing the provision of instruction within competency base training environments, instructor shall undergo a selection process designed assess that the individual's knowledge, capability and competency are suitable for the instructor role and to determine the person's motivation. In addition, selection of an instructor shall be based on criteria intended to define a proven capability in the subject for which he expected to instruct, in accordance with the competencies described in Part CC.

Operators shall establish selection criteria for Cabin Crew Instructors based upon the above eligibilities. Appropriate trainings shall be arranged for each subject on which the instruction is to be conducted. Candidates are to be assessed for their knowledge and instructional capabilities during the training and at the end shall appear in a written examination. The minimum pass marks shall not be less than 90% on each subject appeared.

ORO.CC.305 Qualification/authorization

(a) Operator may apply for an instructor authorization to their nominated instructors who meet the above criteria. The application shall be supported with all the relevant documents along with company's recommendation letter.

(b) Cabin Crew seeking an instructor authorization shall remain on probation period of at least six months and shall undergo two observation classes before an authorization is issued.

(c) The class shall be supervised by qualified CAAM inspector and will evaluate the proficiency on the following:

(1) Practical and theoretical knowledge of the subject;

(2) Preparation of lesson plan and coverage of the prescribed syllabus;

(3) Developing training material and courseware;

(4) Use of associated training devices including audio-visual aids; and

(5) Presentation skills.

(d) Upon demonstration of a satisfactory level of performance, the applicant shall appear on an oral test to be conducted by CAAM examiners. Cabin Safety Instructors can be authorized to carry out the instructional task in one or more training areas as per their qualification.

ORO.CC.306 Renewal qualifying program

(a) Cabin Safety Instructors are to be updated regularly and have to be assigned with instructional tasks as frequently as possible. They are to be reassessed by the CAAM Inspectors within each 24 months' period to monitor that the required level of knowledge and skills are adequately maintained. Such assessments can be made while conducting the theoretical classes or practical exercises.

(b) Cabin Safety Instructors who have not been engaged in instructional tasks in the preceding 3 months' period shall go through an update/refresher course on the related areas of the instructions.

(c) The operator shall maintain the following records of their instructors—

(1) Training records;

(2) Records of performance review;

(3) Training classes conducted;

(4) Examination conducted;

(5) Observation flights and relevant cabin crew documentation, if applicable;

(6) Checks as carried out by CAAM authorized inspectors; and

(7) Licenses and certificates in accordance with training courses.

ORO.CC.307 Cabin Crew – Instructor/ invigilator

(a) Cabin Crew shall undergo different tests and examinations before being qualified to act as a cabin crew member. These tests are to be designed to check both the theoretical interpretations and practical skills and include written examinations and performance checks as well. The cabin crew training program must contain test and check procedures which are to be carried out periodically in order to ensure that the cabin crew retains required level of knowledge and competencies all the time.

(b) The operators shall designate, qualify and assign different individuals to fulfill distinct roles of cabin safety instructor and/or Invigilator. Both roles may be assigned to same individual to perform the qualifying checks and examinations as appropriate to the type of assignments. If instructor is also invigilator on trainees that he instructed, he shall remain impartial during assessment. Instructors who have imparted the instructional training will be restricted from conducting the invigilation or flight checks

(c) The invigilator shall successfully complete a formal competency assessment in their role of carrying out the prescribed tests to determine all required performance standards have been satisfactorily achieved for which the privilege for invigilating is being sought.

(d) Prior to an organization authorizing the provision of examination within competency –based training environments, invigilators shall undergo a selection process designed to assess the individual's knowledge, capability and competency are suitable for the examiner 's role and to determine the person's motivation.

ORO.CC.308 Qualification of Cabin Safety Examiner and limitation

(a) Authorized Cabin Safety Examiner may be selected and approved by CAAM and will carry out all the required evaluation/assessment, on behalf of CAAM Cabin Inspectors should the need be.

(b) Qualified and authorized examiner may be assigned to carry out instruction, and auditing duties to determine that all require performance standards have been satisfactorily achieved.

(c) The examiner is responsible for the making or determine of the actual standards attained and any recommendation for corrective action, if necessary.

(d) They are to be reassessed by the CAAM Cabin Inspectors in the period of 36 months to monitor that the required level of knowledge and skills are adequately maintained. Such assessments can be made while conducting and evaluation/assessment, or while carrying out duties on behalf of CAAM

ORO.CC.309 Associate instructors

(a) The Associate Cabin Crew Instructors shall meet the following criteria and have to be authorized by CAAM before assigning them with any kind of instructional privileges—

(1) shall have 6 years of uninterrupted and active in-flight experience, as a cabin crew member, where 2 years of experience as a cabin crew in charge; in an aircraft operated by more than one crew member. A cabin crew member instructor authorization that has lapsed may be renewed if the applicant has a valid cabin crew member certificate and has received the applicable Cabin Crew Instructor training acceptable to the CAAM;

(2) cabin crew who had ceased their active flying, with training experience and is from a training department;

(3) shall undergo all required training as an Instructor, in accordance with ORO.CC 302

Note –

(1) The Associate Instructors shall be restricted from conducting/ invigilating any exams.

(2) The Associate Instructors who are not attached to an operator, they shall be required to be on contractual bases with an operator and shall not conduct any regulatory classes to another operator.

Safety Instructor/ Invigilator

S/No	Education	Experience	Qualification Process
1.	Graduate/ Diploma	N/A (Non - Crew)	(a) Attend and successfully complete an Initial and type training with 90% marks in the written exam. (b) Completes the required training in accordance with ORO.CC.302(b)(A-D) (c) Successfully pass the aircraft and classroom viva conducted by the CAAM Cabin inspector (d) 01 year of understudy
2.	Experienced Cabin Crew	02 years of experience as Cabin Crew In-charge	(a) Attend and successfully complete an Initial and type training with 90% marks in the written exam. (b) Completes the required training in accordance with ORO.CC.302(b)(A-D) (c) Successfully pass the aircraft and classroom viva conducted by the CAAM Cabin Inspector (d) Maximum of 6 months or less of understudy

First Aid Instructor/Invigilator

S/No	Education	Experience	Qualification Process
1.	Graduate/ Diploma	N/A (Non - Crew) 05 years of experience	(a) Attend and successfully complete an Initial and type training with 90% marks in the written exam. (b) Completes the required training in accordance with ORO.CC.302(b)(A-D) (c) Successfully pass the aircraft and class room viva conducted by the CAAM Cabin Inspector (d) 01 year of understudy.
2.	Experienced Cabin Crew	02 years of experience as Cabin Crew	(a) Attend and successfully complete an Initial and type training with 90% marks in the written exam. (b) Completes the required training in accordance with ORO.CC.302(b)(A-D) (c) Successfully pass the aircraft and class room viva conducted by the CAAM Cabin Inspector (d) Maximum of 6 months or less of understudy.

(a) On successful completion of understudy period the instructor shall conduct the theoretical classroom viva and practical drills before being granted approval as instructor by the CAAM Cabin Inspector.

(b) The concept of understudy is to ensure that each and every instructor undergo a fixed number of qualification hours thereby acquiring a standard proficiency in conducting classes for the cabin crew. The operator shall maintain records of activities of an instructor during the understudy period.

Safety Instructor/Invigilator understudy for graduate (Non-crew) total 1 year

S/No	Time Period	Action Required
1.	First 03 months	Fly with a valid Attestation certificate in order to gain an in-depth knowledge of cabin crew working.

2.	03 months to 06 months	(1) Undergo a Train the Instructor/Facilitator programme and acquire relevant skills like – the art of presentation, course content development, development of various training modules. (2) Assist the other instructors in module preparation, training plan, and question bank preparation.
3.	06 months to 12 months	(1) Deliver classroom lectures on each training module to the satisfaction of established/supervisory Instructor for a batch with 100% supervision. The performance of the trainee instructor and the batch shall be recorded. (2) Once cleared by the supervisory instructor and/or the training manager, he shall deliver an entire Initial Batch under supervision prior to CAAM certification. Such programmes shall be intimated to CAAM in advance to enable CAAM Cabin Inspectors to assess the performance.

Understudy for experienced cabin crew (total 6 months)

S/No	Time Period	Action Required
1.	06 months	(1) Undergo a Train the Instructor/Facilitator programme and acquire relevant skills like – the art of presentation, course content development, development of various training modules. (2) Assist the other instructors in module preparation, training plan, and question bank preparation. (3) Deliver classroom lectures on each training module to the satisfaction of supervisory Instructor for a batch with 100% supervision. The performance of the instructor and the batch shall be recorded (4) Once cleared by the supervisory instructor and/or the training manager, he shall deliver an entire Initial Batch under supervision prior to CAAM certification. Such programmes shall be intimated to CAAM in advance to enable CAAM Cabin Inspectors to assess the performance.

Note:

(a) Modules shall be prepared of the Initial Training, Type/Conversion Training and Recurrent Training as a minimum requirement. Any subsequent modules may be prepared as required.

(b) For any deviation from the above training program the operator shall specify equivalent training program covering the above time period and including at least 01 Initial batch with 100% supervision in their respective Training Manuals.

Recency of experience: All or a portion of experience described above must have been gained within the last 24 months.

(c) Currency: Instructors are required to maintain their proficiency and skills by conducting a minimum of three (3) related safety and emergency courses per year.

(d) Renewal Qualifying Program: Trainers shall be evaluated once every 2 years by CAAM Authorized Inspectors and/or CAAM Inspector to establish the Cabin Safety Instructors' competency and proficiency level in related Safety and emergency type course.

(e) Undergo a familiarisation flight on each aircraft type that they are qualified on.

ORO.CC.310 Unsatisfactory performance

(a) Initial Viva-Voce: Reappear after corrective training of at least 15 days. An instructor performing unsatisfactory in the second viva shall undergo entire ab-initio course before he can be re-assessed.

(b) CAAM Viva/Presentation: Reappear after corrective training of at least 30 days. An instructor performing unsatisfactory in second attempt shall be required to repeat the qualifying program from Ab-initio course.

(c) Renewal Viva-Voce: Reappear after corrective training of at least 30 days. An instructor performing unsatisfactory in second viva shall be required to repeat the qualifying program from Ab-initio course.

ORO.CC.311 Subsequent approvals on additional aircraft type

(a) For subsequent approvals on additional aircraft, a CAAM approved Instructor shall successfully complete Conversion Course with 90% marks in written examination.

(b) Successfully pass the aircraft viva/Practical examination.

(c) If the operator inducts a new aircraft type, the training obtained at the manufacturer facility is accepted.

ORO.CC.310 Instructor re-approval

For all such cases where an approved instructor seeks employment in another airline or other type of operators, the training programme shall include as in the table below:

Safety Instructor/Invigilator

S/No	Aircraft Type	Course of Action
1.	Same type	Transition Training followed by a classroom viva conducted by the instructor of the Airline prior to CAAM certification. The final approval shall be conducted by the CAAM Cabin Inspector
2.	Different type	Conversion Training followed by an aircraft viva conducted the instructor of the Airline prior to CAAM certification. The final approval shall be conducted by the CAAM Cabin Inspector.

First Aid Instructor/Invigilator

S/No	Course of Action
1.	Transition Training followed by a classroom viva conducted by the instructor of the Airline prior to CAAM certification. The final approval shall be conducted by CAAM Cabin Inspector

This transition training may vary depends on the level of experience and qualification.

ORO.CC.313 Quality of inspectors

(a) The operator shall ensure that Inspectors shall satisfy the following requirements—

(1) Training: Inspectors shall be adequately trained in accordance with the operator's approved program and be appropriately documented in the operator's training records.

(2) Knowledge: Inspectors shall possess comprehensive knowledge as follows –

(i) Cabin safety policy;

(ii) Cabin crew duties and responsibilities;

(iii) Cabin safety and emergency procedures;

(iv) Cabin safety equipment operation and location;

(v) Passenger handling techniques and practices;

(vi) Civil Aviation Act 1969;

(vii) MCAR;

(viii) notices, circulars, directives or information as issued by the Chief Executive Officer; and

(3) Experience: Inspectors shall have experience in the following functions—

(i) as Safety instructor, for a minimum period of two (2) years (24 months), conducting flight safety training for the relevant types of aircraft to be inspected.

(ii) Developing air operator cabin safety emergency procedure, or

(iii) Developing operations and training manuals and policies directly related to air operator cabin and technical crew safety programs.

(4) Qualifying Process shall undergo—

(i) Auditor's course or equivalent; and

(ii) Applicable audit training collaborated with CAAM surveillance programme, when selected as CAAM Authorized Cabin Safety Inspectors.

Recency of experience: A portion of safety instructor experience described in item (3)(i), above must have been gained within the last 24 months.

Currency: Inspectors are required to maintain their knowledge and skills by carrying out a minimum of three (3) inspections per year on each aircraft type that they are qualified to inspect.

(5) Inspectors are required to undergo refresher courses (SEP) annually, with subject matter that is relevant to maintaining standards of inspection on each aircraft type that they are qualified to inspect.

(6) DGR shall have been gained within 24 months by attending the DGR Recurrent.

As a representative of CAAM, it is imperative that the Cabin Safety Inspector maintain the knowledge and skills required to fulfill his responsibilities and maintain qualifications. This is accomplished through attendance at appropriate technical and non-technical training courses. Required training is identified in an annual training plan approved by the CAAM. Training record must be established and maintained for each Cabin Safety Inspector. In addition, he shall carry out the CAAM surveillance or operator's safety audit as approved by the CAAM Head of Surveillance. They are to be reassessed by the CAAM Cabin Inspectors every 36 months to monitor that the required level of knowledge and skills are adequately maintained. Such assessments can be made while conducting an audit or surveillance.

ORO.CC.314 CRM Instructor qualifications

(a) All personnel conducting training shall be appropriately qualified to integrate elements of CRM into all appropriate training programmes.

(b) An operator shall establish a training and standardization programme for CRM instructors.

(c) No person shall act as a cabin crew CRM instructor unless he—

(1) has suitable experience of CAT operations as a cabin crew member;

(2) has received instruction on human factors performance limitations (HPL);

(3) has completed an introductory CRM course as required by Part-CC and all cabin crew CRM training required by Part-ORO;

(4) has received instruction in training skills in order to conduct CRM courses; and

(5) be supervised by an appropriately qualified CRM instructor when conducting their first CRM training course.

(6) have received training in group facilitation skills;

(7) have received additional training in the fields of group management, group dynamics and personal awareness; and

(8) have demonstrated the knowledge, skills and credibility required to train the CRM training elements in the non-operational environment

(d) An experienced non-cabin crew CRM instructor may continue to be a cabin crew CRM instructor, provided that the provisions specified in (c)(2) to (c)(5) are satisfied and that the instructor demonstrates a satisfactory knowledge of

the nature of the operation, the relevant specific aircraft types and the cabin crew working environment.

(e) Instructors integrating elements of CRM into aircraft type training, recurrent training, or In-charge cabin crew training shall have acquired relevant knowledge of human factors and have completed appropriate CRM training.

(f) cabin crew CRM instructors may conduct CRM for Flight Crew, provided he completes an operators initial CRM course; have adequate knowledge of human performance and limitations (HPL), gained by—

(1) having obtained a CPL/ATPL with HPL theory, or

(2) having followed a theoretical HPL course covering the whole HPL syllabus

(g) Assessment of cabin crew CRM Instructor/Facilitator in accordance to ORO.CC 115(e)

(h) Recency and renewal of qualification as cabin crew CRM Instructor shall be in accordance to ORO.CC 115(e)

(i) Minimum training times for cabin crew Instructor/Facilitator shall be in accordance to ORO.CC 115(e)

SUBPART TC
TECHNICAL CREW IN HEMS, HHO OR NVIS OPERATIONS

ORO.TC.100 Scope

This Subpart establishes the requirements to be met by the operator when operating an aircraft with technical crew members CAT helicopter emergency medical service (HEMS), night vision imaging system (NVIS) operations or helicopter hoist operations (HHO).

ORO.TC.105 Conditions for assignment to duties

(a) No person shall act as a technical crew member in CAT HEMS, HHO or NVIS unless he—

(1) is at least 18 years of age;

(2) is physically and mentally fit to safely discharge assigned duties and responsibilities;

(3) has completed all applicable training required by this FOD to perform the assigned duties; and

(4) has been checked as proficient to perform all assigned duties in accordance with the procedures specified in the OM.

(b) In the case of technical crew members who are self-employed and/or working on a freelance or part-time basis, the operator shall verify that all applicable requirements of this FOD are complied with, taking into account all services rendered by the technical crew member to other operator(s) to determine in particular:

(1) the total number of aircraft types and variants operated;

(2) the applicable flight and duty time limitations and rest requirements.

ORO.TC.110 Training and checking

(a) The operator shall establish a training programme in accordance with the applicable requirements of this FOD to cover the duties and responsibilities to be performed by technical crew members.

(b) Following the completion of initial training, operator conversion, differences and recurrent training, each technical crew member shall undergo a check to demonstrate their proficiency in carrying out normal and emergency procedures.

(c) Training and checking shall be conducted by personnel suitably qualified and experienced in the subject to be covered. The operator shall inform the CAAM about the personnel conducting the checks.

ORO.TC.115 Initial training

Before undertaking the operator conversion training, each technical crew member shall complete initial training, including—

(a) general theoretical knowledge on aviation and aviation regulations covering all elements relevant to the duties and responsibilities required of technical crew;

(b) fire and smoke training;

(c) survival training on ground and in water, appropriate to the type and area of operation;

(d) aero-medical aspects and first-aid; and

(e) communication and relevant CRM elements of ORO.FC.115 and ORO.FC.215.

ORO.TC.120 Operator conversion training

Each technical crew member shall complete—

(a) operator conversion training, including relevant CRM elements,

(1) before being first assigned by the operator as a technical crew member; or

(2) when changing to a different aircraft type or class, if any of the equipment or procedures mentioned in (b) are different.

(b) Operator conversion training shall include—

(1) the location and use of all safety and survival equipment carried on the aircraft;

(2) all normal and emergency procedures; and

(3) on-board equipment used to carry-out duties in the aircraft or on the ground for the purpose of assisting the pilot during HEMS, HHO or NVIS operations.

ORO.TC.125 Differences training

(a) Each technical crew member shall complete differences training when changing equipment or procedures on types or variants currently operated.

(b) The operator shall specify in the OM when such differences training is required.

ORO.TC.130 Familiarisation flights

Following completion of the operator conversion training, each technical crew member shall undertake familiarisation flights prior to operating as a required technical crew member in HEMS, HHO or NVIS operations.

ORO.TC.135 Recurrent training

(a) Within every 12 month period, each technical crew member shall undergo recurrent training relevant to the type or class of aircraft and equipment that the technical crew member operates. Elements of CRM shall be integrated into all appropriate phases of the recurrent training.

(b) Recurrent training shall include theoretical and practical instruction and practice.

ORO.TC.140 Refresher training

(a) Each technical crew member who has not undertaken duties in the previous 6 months shall complete the refresher training specified in the OM.

(b) The technical crew member who has not performed flying duties on one particular aircraft type or class during the preceding 6 months shall, before being assigned on that type or class, complete either—

(1) refresher training on the type or class; or

(2) two familiarisation sectors on the aircraft type or class.

SUBPART FTL

FLIGHT AND DUTY TIME LIMITATIONS AND REST REQUIREMENTS

Section 1

General

ORO.FTL.100 Scope

This Subpart establishes the requirements to be met by an operator and its crew members with regard to flight and duty time limitations and rest requirements for crew members.

ORO.FTL.105 Definitions

(a) For the purpose of this Subpart—

(1) 'Acclimatised' means when a crew member has spent 3 consecutive local nights on the ground within a time zone which is 2 hours wide, and is able to take uninterrupted nights sleep. The crew member will remain acclimatised thereafter until a duty period finishes at a place where local time differs by more than 2 hours from that at the point of departure.

(2) 'Contactable' means a short period of time during the day, other than on a `day off', during which the company requires a crew member to be at an agreed location for the purpose of giving notification of a duty period which will commence not less than ten hours ahead. The contactable period will be between [*] and [*] local time and shall not exceed 2½ hours.

* Times to be inserted by the company. If required, the 2½ hours can be split into 2 separate periods. Such arrangements must be agreed by the CAAM.

(3) ‘Flight Crew” or “Cabin Crew Member” has the same meaning assigned in the MCAR.

(4) ‘Days Off' means periods available for leisure and relaxation free from all duties. A single day off shall include 2 local nights. Consecutive days

off shall include a further local night for each additional consecutive day off. A rest period may be included as part of a day off.

(5) ‘Dispatch Crew' means a fully qualified and current flight/cabin crew member authorised to carry out pre- flight duties as defined by an operator.

(6) 'Duty' means any continuous period during which a crew member is required to carry out any task associated with the business of an aircraft operator.

(7) 'Early Start Duty' means a duty is an Early Start Duty if it commences in the period 0500 to 0659 hours local time.

(8) 'Flying Duty Period (FDP)' means any time during which a person operates in an aircraft as a member of its crew. It starts when the crew member is required by an operator to report for a flight, and finishes at on-chocks or engines off, or rotors stopped, on the final sector.

(9) 'Late Finish Duty' means a duty is a Late Finish when the duty finishes in the period 0100 to 0159 hours local time.

(10) 'Local Night' means a period of 8 hours falling between 2200 and 0800 hours local time.

(11) 'Night Duty' means a duty is a Night Duty if any part of that duty falls within the period 0200 to 0459 hours local time.

(12) 'Positioning' means the practice of transferring crew from place to place as passengers in surface or air transport at the behest of an operator.

(13) 'Regular' means when applied to duties that are Late Finishes, Night or Early Starts, means a run of 4 or 5 consecutive duties, not broken by a

period of 34 hours free from such duties, contained in a single 7 consecutive day period.

(14) 'Reporting Time' means the time at which a crew member is required by an operator to report for any duty.

(15) ‘Reserve’ means a period of time during which a crew member is required by the operator to be available to receive an assignment for an FDP, positioning or other duty notified at least 10 hours in advance.

(16) 'Rest Period' means a period of time before starting a flying duty period which is designed to give crew members adequate opportunity to rest before a flight.

(17) 'Rostered/Planned Duty' means a duty period, or series of duty periods, with stipulated start and finish times, notified by the operator to crew in advance.

(18) 'Rostering Period' means a number of consecutive weeks, usually 4, but defined by the operator.

(19) 'Scheduled Duty' means the allocation of a specific flight or flights or other duties to a crew member within the pre notified rostered/planned series of duty periods.

(20) 'Sector' means the time between an aircraft first moving under its own power until it next comes to rest after landing, on the designated parking position.

(21) 'Split Duty' means a flying duty period which consists of two or more sectors, separated by less than a minimum rest period.

(22) 'Standby Duty' means a period during which an operator places restraints on a crew member who would otherwise be off duty. However,

it shall not include any time during which an operator requires a crew member to be contactable for the purpose of giving notification of a duty which is due to start 10 hours or more ahead.

(23) 'Suitable Accommodation' means a well furnished bedroom which is subject to minimum noise, is well ventilated, and has the facility to control the levels of light and temperature.

(24) 'Travelling' means all time spent by a crew member transitting between the place of rest, and the place of reporting for duty.

(25) 'Week' means a period of 7 consecutive days starting at any set time and on any set day as specified and stated by the operator.

ORO.FTL.110 Operator responsibilities

(a) An operator shall publish monthly rosters not less than 7 days in advance before the end of the month.

(b) An operator shall prepare duty rosters sufficiently in advance to provide the opportunity for crew to plan adequate pre-duty rest.

(c) An operator shall establish minimum periods of notification of duty for operating crew, or where this is not practicable due to the nature of the operation, must establish in advance minimum periods of notification of days off, during which a crew member will not be required for any duties.

(d) An operator shall ensure training for Rostering Staff shall include guidance on the effects of disturbing Circadian Rhythms, and sleep deprivation.

(e) Away from base, the operator must provide for crew members both the opportunity and facilities for adequate pre-flight rest, in suitable accommodation.

(f) An operator shall ensure when employment of a crew member on an irregular basis, then such operator shall ensure that the crew member satisfies the provisions of the company approved FTL scheme.

(g) An operator shall satisfy themselves the crew members who undertake other employment, if allowed by the operator, still have the opportunity to enjoy adequate pre-flight rest.

(h) An operator shall change a schedule and/or crew arrangements if the actual operation exceeds the maximum flight duty period on more than 33% of the flight duties in that schedule during a scheduled seasonal period.

ORO.FTL.115 Crew responsibilities

(a) Crew shall ensure that they are not in breach of the Company approved FTL scheme.

(b) Crew who is working on a freelance basis shall maintain an individual record of their flying and duty hours which shall be presented to an operator before undertaking a duty period.

(c) Crew shall make optimum use of the opportunities and facilities for rest provided, and plan and use their rest periods properly.

(d) Before considering additional employment, crew shall recognise that the responsibility for being sufficiently rested before undertaking a flying duty remains with the individual.

(e) A flight crew shall inform anyone who employs his services as a flight crew of all flight times and flying duty periods undertaken, whether professionally or privately, except for flying in aircraft not exceeding 1 600 kg maximum weight and not flying for the purpose of CAT or aerial work. Aerial work includes flying instruction for which the pilot is remunerated. It is also aerial work where valuable consideration is given specifically for flying instruction, even if the pilot receives no reward.

ORO.FTL.125 Flight time specification schemes

(a) The scheme shall be approved by the CAAM and included in the OM, or when an OM is not required, incorporated in a separate document. The OM or separate document shall be readily available to every person employed by the operator as a crew.

(b) An operator shall establish maximum flying duty periods and minimum rest periods appropriate to the nature of flight operations undertaken. Comprehensive guidance and instructions shall be included in the OM for the benefit of all crew and the staff concerned with the preparation and day to day management of rostering and scheduling.

ORO.FTL.200 Home base

(a) An operator shall assign a home base to each crew member. The home base is a single airport location assigned with a high degree of permanence.

(b) In the case of a change of home base, the first recurrent extended recovery rest period prior to starting duty at the new home base is increased to 72 hours, including 3 local nights.

ORO.FTL.205 Flight duty period (FDP)

(a) Calculation of a Flying Duty Period

An operator shall ensure the maximum FDP, in hours and fractions of hours, shall be in accordance with para (e), Table A or B (2 or more flight crew, aeroplanes), Table C (single flight crew aeroplanes) or para (k), Table D (helicopters). The times extracted from the tables may be extended by use of in-flight relief, split duty and PIC's discretion, under the terms of para (g), ORO.FTL.220 and para (h). Where an aeroplane flight crew consists of two pilots only, any FDP involving a sector which is planned to exceed 7 hours must be calculated in accordance with the provisions of para (f).

(b) Additional Limits on Flying

(1) Late Finishes/Early Starts

(i) The conditions set in this paragraph only apply when a crew member is acclimatised.

(2) Sleep deprivation, leading to the onset of fatigue, can arise if a crew member is required to report early for duty, or finishes a duty late, on a number of consecutive days. Therefore, not more than 3 consecutive duties that occur in any part of the period 0100 to 0659 hours local time can be undertaken, nor may there be more than 4 such duties in any 7 consecutive days. Any run of consecutive duties (Late Finishes or Nights or Early Starts) can only be broken by a period of not less than 34 consecutive hours free from such duties. This 34 consecutive hours may include a duty that is not an Early, Late or Night duty.

(i) This paragraph is not applicable to helicopters.

However, crew members who are employed on a regular early morning duty for a maximum of 5 consecutive duties shall work to the following:

(A) The minimum rest period before the start of such a series of duties is 24 hours.

(B) The duty will not exceed 9 hours, irrespective of the sectors flown.

(C) At the finish of such a series of duties, crew members will have a minimum of 63 hours free from all duties.

(3) Should a crew member be scheduled for duty that occurs during any part of the period 0200 to 0459 hours local time, for a minimum of 2 and a maximum of 3 consecutive nights, then crew members must be free from all duties by 2100 hours local time before covering the block of consecutive night duties, such that the crew members can take a rest period during a local night.

Note – Operators may replace the above paragraph with one of the following choices, either Options A and B OR Options B and C. The

operator may roster crew members for either 2 or 3 consecutive nights, but must ensure that the duty preceding this series of duties finishes by 2359 hours local time (2 nights) or 2100 hours local time (3 nights) as appropriate.

If it is preferred to retain the present contents then attention must be paid to the notes attached to the Options listed (below). These notes list the actions to be followed in the event that duty is inadvertently extended beyond the cut-off times (i.e. 2100 or 2359 hours).

Option A

Should any duties be scheduled to be carried out within any part of the period 0200 and 0459 hours local time, for 3 consecutive nights, then crew members will finish the duty preceding this series of duties by 2100 hours local time before commencing the block of consecutive night duties, such that the crew members can take a rest period during a local night. If the duty immediately prior to the 3 consecutive night duties extends beyond 2100 hours local time and the individual crew member is willing to continue with the planned roster, (i.e. 3 consecutive night duties) then provided that duty preceding this series of duties finishes no later than 2359 hours local time, the schedule may continue.

Note – 1. Under this Option, if the crew member chooses not to continue the planned roster (after finishing duty between 2100 and 2359 hours) then only the planned first and second night duties that impinge on any part of the period 0200 to 0459 hours local time may be undertaken.

Note – 2. Under this Option, if the duty finishes after 2359 hours local time, then only the first of the 3 consecutive night duties that impinge on any part of the period 0200 to 0459 hours local time may be undertaken.

Option B - 2 consecutive night duties

Should any duties be scheduled to be carried out within any part of the period 0200 and 0459 hours local time, for 2 consecutive nights, then

crew members will finish the duty preceding this series of duties by 2359 hours local time before commencing the block of 2 consecutive night duties, such that the crew members can take a rest period during a local night.

Note – Under this Option in the event of 2359 hours being exceeded, then only the first of the 2 planned consecutive night duties that impinge on any part of the period 0200 to 0459 hours local time may be undertaken.

Option C - 3 consecutive night duties

Should any duties be scheduled to be carried out within any part of the period 0200 and 0459 hours local time, for 3 consecutive nights, then crew members will finish the duty preceding this series of duties by 2100 hours local time before commencing the block of consecutive night duties, such that the crew members can take a rest period during a local night.

Notes – 1. Under this Option in the event of 2100 hours being exceeded, then only the first of the 3 planned consecutive night duties that impinge on any part of the period 0200 to 0459 hours local time may be undertaken.

2. In all cases the limits in para (b)(2) or para (b)(3) must not be exceeded (i.e. maximum of 3 consecutive nights and 4 in 7 consecutive days).

(i) This paragraph is not applicable to helicopters.

However, crew members who are employed on a regular night duty for a maximum of 5 consecutive nights shall work to the following:

(A) The minimum rest period before the start of such a series of duties is 24 hours.

(B) The duty will not exceed 8 hours, irrespective of the sectors flown.

(C) At the finish of such a series of duties crew members will have a minimum of 54 hours free from all duties.

(A) Options for Night Operations

If an operator elects to roster 4 or 5 consecutive night duties, then the criteria laid down in para (B)(2)(i) must be complied with and must form part of the approved FTL scheme. Operators are reminded that the normal days off requirements must be met (i.e. the 54 hours off between two blocks of 5 nights is only 1 proper day off). However, if operators find that this part of the Scheme is too restrictive then one of the following options may be employed but, if used, must be fully complied with:

(AA) When crew are employed on duty for a total of 20 hours or less during 5 consecutive night duties, (i.e. maximum duty each night is 4 hours) the 54 hours free from all duties will meet the "Days Off" requirements for each 28 consecutive day period. Any positioning flights must be completed within the 20 hours duty.

(BB) When crew are employed on duty for a total of more than 20 hours but not more than 40 hours during 5 consecutive night duties, the first 54 hours (between week 1 and week 2) may be counted as 2 "Days Off". For the 28 consecutive day period that starts on the first night of the first duty, crew must be given a minimum of a further 5 "Days Off" (average of a further 6 days). Any positioning flights must be completed within the 40 hours duty.

(CC) When crew are employed on duty which requires full use of 40 hours duty during 5 consecutive night duties plus a maximum of 3 hours positioning (pre and post- total) then:

a. allowable flying hours (month and year) will be reduced to the following:

1. a maximum of 75 hours in any 28 consecutive days with a maximum of 60 hours in 28 consecutive days averaged over three 28 day periods, and;

2. 600 hours in any 12 consecutive months.

b. a minimum of 9 "Days Off" in any 28 consecutive days will be granted;

c. any increase in duty over 40 hours during the block of 5 consecutive night duties is to be added to the subsequent 54 hours rest period which may not be reduced.

(B) General Rules

To be applied when an operator utilises (AA), (BB) or (CC) of para (A) Options for Night Operations.

(AA) The exercise of "PIC's Discretion" is limited to 1 hour per night with a total of 2 hours allowed during any 5 consecutive night cycle. Any duty worked in excess of 40 hours by use of "PIC's Discretion" must also be added to the subsequent 54 hours rest which may not be reduced.

(BB) The absolute maximum duty permitted during a block of 5 consecutive night duties is 45 hours (40

hours, plus 3 hours positioning, plus 2 hours "PIC's Discretion", as per para (A)(CC) and para (B)(AA) above.

(CC) Crew cannot be rostered for more than 8 hours per night, except when working to paragraph (A)(CC) above.

(DD) Split duties and extension of FDP by in-flight rest are not permitted.

(EE) "PIC's Discretion" to reduce rest is not permitted.

Note **–** For 5 consecutive earlies, the same rule as in paragraph (A)(CC) applies (i.e. maximum 1 hour discretion per day and a total of 2 hours in the 5 day cycle).

(4) Air Taxi/Sole Use Charter/Helicopters - Interrupted Rest

(i) If, prior to the start of an FDP, a crew member's rest period is interrupted for operational reasons between 2300 and 0700 hours local time, the following shall apply:

(A) If the disturbance happens earlier than 1 hour before the planned departure from the crew member's place of rest, the time elapsed between that disturbance and the departure time from the place of rest minus 1 hour, shall count as part of the subsequent FDP.

Note **–** The phrase `operational reasons' applies to such actions as contacting the customer, checking weather, liaison with ATC or any action pertaining to the planned flight. It is anticipated that operators with a 24 hour support organisation will provide these services for crew, leaving their crew members undisturbed.

(c) Mixed Duties

When a crew member is required to report for duty in advance of the stipulated report time for a scheduled flight, to carry out a task at the behest of an employer, then the time spent on that task shall be part of the subsequent FDP.

(1) Fixed and Rotary Wing Flying

When both fixed wing and rotary wing flying is carried out the more restrictive flight and duty time limitations shall apply.

(2) Mixed Simulator and Aircraft Flying

This paragraph does not apply to cabin crew.

When a crew member flies in the simulator, either on a check or training flight, or as a Training Captain or Instructor, and then within the same duty period flies as a crew member on a public transport flight, all the time spent in the simulator is counted in full towards the subsequent FDP, and for helicopters towards the daily flying hour maxima. Simulator flying does not count as a sector, but the FDP allowable is calculated from the report time of the simulator detail.

(3) Mixed Single Pilot/Two Pilot Operations

This paragraph does not apply to cabin crew.

In one duty period a pilot may fly as a single flight crew up to the point where the total flying and duty hours reach the single flight crew FDP limit. During this time the pilot may fly either in command or as a co-pilot on a 2 flight crew aircraft. The pilot may then continue beyond the single flight crew FDP limit in a 2 flight crew operation up to the 2 flight crew FDP and flying hour maxima, but may only fly as a co-pilot.

(d) Delayed Reporting Time in a Single FDP

(1) When a crew member is informed of a delay to the reporting time due to a changed schedule, before leaving the place of rest, 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 report 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.

(2) 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 (d)(1) above shall be applied to the re-arranged reporting time.

(e) Maximum FDP – Aeroplanes

(1) Standard reporting times prior to flight must be specified by an operator. Pre-flight duties are part of the FDP. A period of duty must be allowed for post-flight activities: the minimum for major operators is 30 minutes, 15 minutes for others. If this “period” for post FDP duties is routinely exceeded then the post FDP duty period stated in the scheme must be revised to better represent the actual time taken. The time spent between reporting for a flight and the completion of post-flight tasks determines the length of the subsequent rest period.

(2) The utilisation of a non-standard reporting time, except by use of a dispatch crew, designed to take advantage of an increased FDP from a more favourable time band, must not be used.

(3) Tables A and C apply when the FDP starts at a place where the crew member is acclimatised; Table B applies at other times.

Table A Two or more flight crew - Acclimatised

Local time of start	Sectors							
	1	2	3	4	5	6	7	8 or more
0600-0759	13	12¼	11½	10¾	10	9½	9	9
0800-1259	14	13¼	12½	11¾	11	10½	10	9½
1300-1759	13	12¼	11½	10¾	10	9½	9	9
1800-2159	12	11¼	10½	9¾	9	9	9	9
2200-0559	11	10¼	9½	9	9	9	9	9

Table B Two or more flight crew - Not Acclimatised

Length of preceding rest (hours)	Sectors						
	1	2	3	4	5	6	7 or more
Up to 18 or over 30	13	12¼	11½	10¾	10	9¼	9
Between 18 and 30	11½	11	10½	9¾	9	9	9

Note – The practice of inserting a short duty into a rest period of between 18 and 30 hours in order to produce a rest period of less than 18 hours, thereby taking advantage of the longer FDP contained in Table B, is not permitted.

Maximum FDP - Single Flight Crew

Table C

Local time of start	Sectors				
	Up to 4	5	6	7	8 or more
0600-0759	10	9¼	8½	8	8
0800-1259	11	10¼	9½	8¾	8
1300-1759	10	9¼	8½	8	8
1800-2159	9	8¼	8	8	8
2200-0559	8	8	8	8	8

(4) Report times must not be reduced in order for crew members to achieve their required rest prior to an FDP.

(f) Limits on Two Flight Crew Long Range Operations

This paragraph does not apply to helicopter crew or cabin crew.

(1) When an aeroplane flight crew is only two pilots, the allowable FDP shall be calculated as follows. A sector scheduled for more than 7 hours is considered as a multi-sector flight, as below:

Scheduled Sector Times	**Acclimatised**	**Not Acclimatised**
	Sectors	
Sector Length over 7 hours but not more than 9 hours	2	4
Sector Length over 9 hours but not more than 11 hours	3	4
Sector Length over 11 hours	4	Not Applicable

The appropriate table paragraph (e) is then entered with the start time of the duty period and the `modified' number of sectors, to determine the allowable FDP.

(2) When an additional, current, type rated pilot is a crew member, then these limits do not apply and the permissible FDP is determined by entering Table A or B in paragraph (e) with time of start and the actual sectors planned.

(g) Extension of Flying Duty Period by In-flight Relief

(1) When any additional crew member is carried to provide in-flight relief with the intent of extending an FDP, that individual shall hold qualifications which are equal or superior to those held by the crew member who is to be rested. To take advantage of this facility the division of duty and rest between crew members must be kept in balance. It is

unnecessary for the relieving crew member to rest in between the times relief is provided for other crew members.

(2) When in-flight relief is utilised there must be, for the crew members resting, a comfortable reclining seat, or bunk, separated and screened from the flight deck and passengers.

(3) A total in-flight rest of less than three hours does not allow for the extension of an FDP, but where the total in-flight rest, which need not be consecutive, is three hours or more, then the permitted FDP may be extended as follows:

If rest is taken in a bunk	If rest is taken in a seat
A period equal to one half of the total rest taken, provided that the maximum FDP permissible shall be 18 hours; 19 hours in the case of cabin crew.	A period equal to one third of the total rest taken, provided that the maximum FDP permissible shall be 15 hours; 16 hours in the case of cabin crew.

(h) Aircraft PIC's Discretion to Extend a Flying Duty Period

(1) An aircraft PIC may, at his discretion, and after taking note of the circumstances of other members of the crew, extend an FDP beyond that permitted in para (e), Tables A, B, C, or para (k), Table D, provided he is satisfied that the flight can be made safely. The extension shall be calculated according to what actually happens, not on what was planned to happen. An extension of 3 hours is the maximum permitted, except in cases of emergency (see Note 1).

(2) The operator's scheme shall include guidance to aircraft PIC on the limits within which discretion may be exercised, and shall include specific limits to which a PIC may extend the flying duty period. In a Flying Duty Period involving 2 or more sectors up to a maximum of 2 hours discretion may be exercised prior to the first and subsequent sectors. On a single sector

flight and immediately prior to the last sector on a multi-sector flight, a PIC may utilise the full amount of discretion authorised by the operator.

(3) A PIC may exercise discretion to extend an FDP following a reduced rest period, only exceptionally, and then only to the extent necessary to allow for unforeseen circumstances that become apparent during the last sector.

(4) Whenever a PIC extends an FDP, it shall be reported to his employer on a Discretion Report Form, either in the format of Attachment I1 or on a form acceptable to the CAAM. Any extension or when exercised after any reduced rest period, then the operator shall submit the PIC's written report, together with the operator's comments to the CAAM, within 14 days after the event.

Notes – 1. In respect of an extension of a flying duty period, an emergency is a situation which in the judgement of the PIC presents a serious risk to the health or safety of crew and passengers, or endangers the lives of others.

2. Discretion reports may be used by the CAAM to assess the realism of particular schedules.

(i) Aircraft PIC's Discretion to Reduce a Rest Period

(1) An aircraft PIC may, at his discretion, and after taking note of the circumstances of other members of the crew, reduce a rest period but only insofar as the room allocated to the crew member must be available for occupation for a minimum of 10 hours. The exercise of such discretion shall be considered exceptional and must not be used to reduce successive rest periods. If the preceding FDP was extended, the rest period may be reduced, provided that the subsequent allowable FDP is also reduced by the same amount. In no circumstances may a PIC exercise discretion to reduce a rest period below 10 hours at accommodation.

(2) Whenever a PIC reduces a rest period, it shall be reported to his employer on a Discretion Report Form, in the format of Attachment I2, or on a form acceptable to the CAAM. Any reduction of rest period, the operator shall submit the PIC's written report together with the operator's comments, to the CAAM, within 14 days after the event.

(j) Days Off

This paragraph does not apply to helicopter crew.

(1) Wherever possible and if required by the crew member, days off should be taken in the home environment.

(2) A single day off shall include 2 local nights, and shall be of at least 34 hours duration.

(3) A planned rest period may be included as part of a day off.

(4) Crew members shall:

(i) not be on duty more than 7 consecutive days between days off, but may be positioned to the usual operating base on the eighth day, provided they are then allocated at least 2 consecutive days off;

(ii) have 2 consecutive days off in any consecutive 14 days following the previous 2 consecutive days off;

(iii) have a minimum of 7 days off in any consecutive 4 weeks; and

(iv) have an average of at least 8 days off in each consecutive 4 week period, averaged over 3 such periods.

(k) Limits on Helicopter Flying

(1) Table D Maximum FDP - Helicopters

Local time of start	SINGLE PILOT		TWO PILOTS	
	Max. Length of Flying Duty Period (Hours)	Maximum Flying Time (Hours)	Max. Length of Flying Duty Period (Hours)	Maximum Flying Time (Hours)
0600-0659	9	6	10	7
0700-0759	10	7	11	8
0800-1359	10	7	12	8
1400-2159	9	6	10	7
2200-0559	8	5	9	6

(2) Additional Limits on Helicopter Flying

(i) Repetitive Short Sectors

(A) Crew flying repetitive short sectors, for example pleasure flying, offshore short sector shuttles, at an average rate of 10 or more landings per hour, shall have a break of at least 30 minutes away from the helicopter within any continuous period of 3 hours.

(B) When carrying out the more demanding roles of helicopter flying, for example, winching and external load carrying, operators shall specify maximum periods of continuous operation. The limits set shall not exceed the maximum allowed in para (k)(2)(i), but depending on the nature and circumstances of a particular operation may need to be more restrictive.

(C) After 3 hours shuttle operations between offshore installations in conditions other than day VMC, a rest of 30 minutes free of all duty shall be allowed.

(D) Survival Suits

The wearing of survival suits can prove an irritant and be uncomfortable. Therefore:

(AA) a flight crew member should not participate in moving freight or baggage, or any other activity requiring excessive physical effort. His role should be supervisory.

(BB) Schedules which involve continuous flying in excess of 4½ hours must include provisions for a break free of all duty of at least 30 minutes, not including a total of 30 minutes for immediate post- flight duties and pre-flight duties. The break must be scheduled prior to exceeding a total of 6 hours flying.

(3) Helicopter Crew Days Off

(i) Wherever possible, and if required by the crew member, days off should be taken in the home environment. A single day off for helicopter crew shall include two local nights, and shall be of at least 36 hours duration. A planned rest period may be included as part of a day off.

(ii) Crew members shall:

(AA) not work more than 7 consecutive days;

(BB) have 2 consecutive days off following a period of 7 consecutive days duty;

(CC) have 2 consecutive days off in any consecutive 14 days, and have at least 3 days off in any consecutive 14 days;

(DD) have a minimum of 7 days off in any consecutive 4 weeks; and

(EE) have an average of at least 8 days off in each consecutive 4 week period averaged over 3 such periods.

Note – A single day off can only be allocated when 6 or less consecutive days duty have been worked.

(4) The Maximum number of Flying Hours which a pilot may be permitted to undertake are:

Single Day	Table D
Any 3 consecutive days	18 hours
Any 7 consecutive days	30 hours
Any 3 consecutive 28 day periods	240 hours

(l) Rules Relating to Cabin Crew

(1) The requirements detailed in this paragraph shall be applicable to all cabin crew employed as crew members and are not intended to apply only to those cabin crew carried to meet the provisions of the Civil Aviation Regulations 2016.

(2) The limitations which shall be applied to cabin crew are those applicable to flight crew members contained in para (a) to para (k), but with the following differences:

(i) A flying duty period can be 1 hour longer than that permitted for flight crew. The FDP and limits set on early starts for cabin crew shall be based on the time at which the flight crew report for their flying duty period, but that FDP will start at the report time of the cabin crew.

(ii) For cabin crew the minimum rest period which will be provided before undertaking a flying duty period shall be:

(A) at least as long as the preceding duty period less 1 hour; or

(B) 11 hours;

whichever is the greater.

(iii) The combined sum of standby time and subsequent FDP can be 1 hour longer than that permitted to flight crew.

(iv) The annual and 28 day limits on flying hours appertaining to flight crew need not be applied.

(v) The limits relating to two pilot flight crew long range operations do not apply.

ORO.FTL.210 Flight times and duty periods (Aeroplanes)

(a) A person shall not act as a member of the flight crew of an aircraft if at the beginning of the flight the aggregate of all previous flight times:

(1) during the period of 28 consecutive days expiring at the end of the day on which the flight begins exceeds 100 hours. (This means that on the 28th day a flight crew member may depart on a single sector flight, and may complete that sector, even though at the end of the flight the total flying hours completed in 28 days will exceed 100 hours. Consequently, the flight crew member cannot then continue to operate as a flight crew member on any subsequent sectors during that day); or

(2) during the period of 12 months, expiring at the end of the previous month exceeds 900 hours.

(b) The maximum duty hours for flight crew, excepting helicopters, shall not exceed:

(1) 55 hours in any 7 consecutive days, but may be increased to 60 hours, when a rostered duty covering a series of duty periods, once commenced, is subject to unforeseen delays;

(2) 95 hours in any 14 consecutive days; and

(3) 190 hours in any 28 consecutive days.

(c) When away from base and where an individual crew member separates from the crew, or the crew as a whole splits up, then any use of discretion to reduce rest becomes a decision for an individual crew member. The decision to continue with the next flight and the submission of an associated discretion report is the responsibility of the relevant PIC after the crew member, and operator if in a position to do so, has informed the PIC that a reduced rest period has been taken.

(d) When a crew member is not rostered for either standby or flying duties for 28 or more consecutive days, then any duty hours worked need not be added to cumulative totals. However, when a crew member is anticipated to return to either standby or flying duties the duty hours worked in the 28 days preceding that duty must be recorded. Before allocating a flying duty to a crew member the operator must be satisfied that crew member is in compliance with the scheme.

(e) Calculation of Cumulative Duty Hours (all aircraft)

(1) Duty hours shall be added to cumulative totals in accordance with the following:

(i) To count in full:

(A) Duty periods and flying duty periods, plus subsequent post flight duties.

(B) All standby duty, except that specified in (ii)(A) and (B) below.

(C) The time spent on positioning.

(ii) To count as half the time on duty:

(A) The standby duty, when the period of notice given to the crew member by the operator before reporting for duty, is treble or more than the specified minimum report time.

(B) The standby duty when undertaken at home, or in suitable accommodation provided by the operator, takes place during the period 2200 to 0800 hours, and the crew member can take undisturbed rest and is not called out for duty.

(f) The maximum duty hours for cabin crew shall not exceed:

(1) 60 hours in any 7 consecutive days, but may be increased to 65 hours when a rostered duty covering a series of duty periods, once commenced, is subject to unforeseen delays.

(2) 105 hours in any 14 consecutive days.

(3) 210 hours in any 28 consecutive days.

ORO.FTL.210 Flight times and duty periods (Helicopters)

(a) The maximum flying hours for flight crew will be 90 in any 28 consecutive days, and 800 in any period of 12 months.

(b) Maximum duty hours for flight crew shall not exceed:

(1) 60 hours in any 7 consecutive days; and

(2) 200 hours in any 28 consecutive days.

ORO.FTL.215 Positioning and travelling

(a) All time spent on positioning at the behest of an operator shall count as duty, but positioning does not count as a sector when calculating the FDP. In these circumstances the FDP commences not later than the time at which the crew member reports for the positioning journey, or positions in accordance with ORO.FTL.215(f).

(b) If, after a positioning journey, the crew member spends less than a minimum rest period at suitable accommodation provided by the operator, and then carries out an FDP, the positioning must be counted as a sector if a split duty

is claimed when calculating the allowable FDP. If it is not, then a split duty FDP cannot be used.

(c) On occasion, and when agreed by the CAAM an operator may recover a crew member from an overseas airfield on a positioning flight on the eighth consecutive day of duty.

(d) Travelling time, other than that time spent on positioning, shall not be counted as duty.

(e) Travelling time, from home to departure aerodrome, if long distances are involved, is a factor influencing any subsequent onset of fatigue. If the journey time from home to normal departure airfield is usually in excess of 1½ hours, crew members should consider making arrangements for temporary accommodation nearer to base.

(f) When crew members are required to travel from their home to an aerodrome other than the one from which they normally operate, any travelling time over and above the journey time from home to the usual operating aerodrome shall be classed as positioning. Notional times for any additional travelling shall be agreed between the operator and the CAAM.

ORO.FTL.220 Split duty

(a) When an FDP consists of two or more sectors - of which one can be a positioning journey counted as a sector - but separated by less than a minimum rest period, then the FDP may be extended by the amounts indicated below.

Consecutive Hours Rest	Maximum Extension of the FDP
Less than 3	Nil
3 – 10	A period equal to half the consecutive hours rest taken.

(b) The rest period shall not include the time allowed for immediate post-flight duties and pre-flight duties, a minimum total of 30 minutes. The actual time allowed shall be specified by the operator. When the rest period is 6 hours or less it will suffice if a quiet and comfortable place, not open to the public, is available. If the rest period is more than 6 consecutive hours, then suitable accommodation must be provided.

(c) When rest is taken in the aircraft on the ground, the minimum standards of noise, temperature, light and ventilation are to be specified in the OM. Such arrangements will only be permitted when the crew have adequate control of the temperature and ventilation within the aircraft, and passengers are not on board.

(d) Split duty shall not follow a reduced rest.

ORO.FTL.225 Standby duty and duties at the airport

(a) The time of start, end and nature of the standby duty must be defined and notified to crew members. The time a standby duty starts determines the allowable FDP, except that when the actual FDP starts in a more limiting time band then that FDP limit will apply. However, when standby is undertaken at home, or in suitable accommodation provided by the operator, during the period 2200 to 0800 hours local time and a crew member is given 2 hours or less notice of a report time, the allowable FDP starts at the report time for the designated reporting place.

(b) When a crew member is on standby duty on immediate readiness at an airport, then the allowable FDP is calculated using the start time of the standby duty.

(c) If a crew member is called out from standby, the standby duty will cease when that individual reports at the designated reporting point.

(d) The following limits apply:

Duty	Maximum Duration
Standby Duty (all cases)	12 hours
Standby followed by an FDP	As in Case A and B below

Case A

If a crew member is called out from standby to conduct an FDP before completing 6 hours standby duty then the total duty period allowed is the sum of the time spent on standby and the FDP allowable from para (e), Tables A, B, C, or para (k), Table D.

Case B

If a crew member is called out from standby to conduct an FDP after completing 6 or more hours standby duty, then the total duty period allowed is the sum of all the time spent on standby and the allowable FDP, reduced by the amount of standby worked in excess of 6 hours.

Notes – 1. The method of adding time spent on standby to cumulative totals is stated in ORO.FTL.210.

2. The reference to 'total duty period' applies only to the sum of the standby time achieved + the allowable FDP obtained from para (e). On the day, for cumulative duty totals and for minimum rest purposes, the total duty achieved will be standby time achieved + FDP achieved + post flight duties + any positioning.

(e) When any period of standby finishes, during which a call-out has not occurred, at least 12 hours rest must follow prior to the next duty period. Similarly, following the end of a contactable period or periods, at least 10 hours must elapse prior to the next duty period.

ORO.FTL.230 Reserve

If an operator assigns crew members to reserve, the following requirements shall apply in accordance with the certification specifications applicable to the type of operation:

(a) reserve shall be in the roster;

(b) flight time specification schemes shall specify the following elements:

(1) the maximum duration of any single reserve period;

(2) the number of consecutive reserve days that may be assigned to a crew member.

ORO.FTL.235 Rest periods

(a) The aircraft operator must notify all crew members in good time of a flying duty period so that sufficient and uninterrupted pre-flight rest can be obtained. When away from base the operator must provide the crew with the opportunity and the facilities for adequate pre-flight rest. The operator must provide suitable accommodation. When flights are carried out at such short notice that it is impracticable for an operator to arrange suitable accommodation, then this responsibility devolves to the aircraft PIC.

(b) The minimum rest period which must be provided before undertaking a flying duty period shall be:

(1) at least as long as the preceding duty period, or

(2) 12 hours

whichever is the greater.

(c) When away from base, in the case when the rest period earned by a crew member is 12 hours, and suitable accommodation is provided by the operator, then that rest period may be reduced by one hour. In such circumstances, if the travelling time between the aerodrome and the accommodation is more than 30 minutes each way then the rest period must be increased by the amount the total time spent travelling exceeds one hour. The room allocated to the crew member must be available for occupation for a minimum of 10 hours. This sub- paragraph does not apply to rest periods that exceed 12 hours.

(d) Exceptionally at home base, individual crew members may be asked to exercise their discretion to reduce rest by up to a maximum of one hour but only

to a minimum of 12 hours for flight crew and 11 hours for cabin crew. If discretion is used, it is the responsibility of the operator and the crew member to inform the PIC of the flight immediately following the rest period that a reduced rest period has been taken.

(e) If the preceding duty period, which includes any time spent on positioning, exceeded 18 hours, then the ensuing rest period must include a local night.

(f) The rest period following a sequence of reduced rest and then an extended FDP, cannot be reduced.

(g) After being called out from a standby duty the length of minimum rest shall be determined by the length of standby duty, plus any time spent on positioning, and any FDP completed.

(h) Crew members who inform an operator that they are having difficulty in achieving adequate pre-flight rest must be given the opportunity to consult an aviation medical specialist.

ORO.FTL.240 Nutrition

(a) During the FDP there shall be the opportunity for a meal and drink in order to avoid any detriment to a crew member's performance, especially when the FDP exceeds 6 hours.

(b) An operator shall specify in its OM how the crew member's nutrition during FDP is ensured.

ORO.FTL.245 Records of home base, flight times, duty and rest periods

(a) An operator shall maintain, for a period of 12 months:

(1) individual records for each crew member including:

(i) flight times;

(ii) start, duration and end of each duty period and FDP;

(iii) rest periods and days free of all duties; and

(iv) assigned home base;

(2) reports on extended flight duty periods and reduced rest periods.

(b) Upon request, the operator shall provide copies of individual records of flight times, duty periods and rest periods to:

(1) the crew member concerned; and

(2) to another operator, in relation to a crew member who is or becomes a crew member of the operator concerned.

(c) Records referred to in relation to crew members who undertake duties for more than one operator shall be kept for a period of 12 months.

APPENDIX 1

OPERATIONAL CONTROL

(a) Operational Control Functions

(1) AOC holders conduct operational control by making those decisions and performing those actions on a daily basis that are necessary to operate flights safely and in compliance with the regulations. Operational control functions include crew and aircraft scheduling, accepting charter flights from the public, reviewing weather and notices to airmen (NOTAM), and flight planning. Another aspect consists of developing and publishing flight control policies and procedures for flight crews and other operations personnel to follow in the performance of their duties.

(2) AOC holders are responsible for collecting and disseminating information that is needed to plan and conduct flights safely, including information about enroute and terminal weather conditions, navigation, and aerodrome facilities.

(b) Operational Control System

Operational control systems vary with the kind of operation the operator is authorised to conduct, the complexity of the operations, the means of communication, and with the persons who are involved in preparing for and conducting flights under the AOC holder's system.

(c) Operator Oversight Responsibility

The AOC holder's safety and quality assurance responsibility includes ensuring that both its flight crew and operational control employees comply with published policies and procedures.

(d) AOC Holder's OM

(1) AOC holders prepare and keep current a manual for the guidance of flight, ground and management personnel in the performance of their duties and responsibilities.

AOC holder shall include in its OM the duties and responsibilities of those persons to whom authority to exercise operational control has been delegated, providing the name of each manager responsible for flight operations (operational control) including a description of their duties and functions.

(2) The AOC holder's OM must contain guidance on the conditions that must be met before a flight may be initiated or continued, or under which a flight must be diverted or terminated.

(e) Specific Operational Functions

(1) Operational control includes, but is not limited to, the AOC holder's performance of the following functions:

(i) Ensuring that only those operations authorised by the AOC are conducted.

(ii) Ensuring that only crewmembers trained and qualified in accordance with the applicable regulations are assigned to conduct a flight.

(iii) Ensuring that crewmembers are in compliance with flight and duty time requirements when departing on a flight.

(iv) Designating a PIC for each flight.

(v) Providing the PIC and other personnel who perform operational control functions with access to the necessary information for the safe conduct of the flight (such as weather, NOTAMs, and aerodrome analysis).

(vi) Specifying the conditions under which a flight may be released (weather minima, flight planning, airworthiness of aircraft, aircraft loading, and fuel requirements).

(vii) Ensuring that each flight has complied with the conditions specified for release before it is allowed to depart.

(viii) Ensuring that when the conditions specified for a flight's release cannot be met, the flight is either cancelled delayed, re-routed, or diverted.

(ix) Monitoring the progress of each flight and initiating timely actions when the flight cannot be completed as planned, including diverting or terminating a flight.

(f) Specific Operational Control Systems

The operator must include, in the OM, policies and procedures appropriate to the flight release system used.

Note – The AOC holder's system for exercising operational control may be described in the AOC holder's SOPs.

(g) Operational Structure

(1) An operational control function may be centralised in one individual or diversified throughout an AOC holder's organisation. In practice, it is not feasible for an individual to exercise operational control without assistance in any but the simplest of flight operations. Most AOC holders create specialised departments for crew scheduling, load control, and other functions. These functions may or may not be placed under the management and supervision of the "flight control" department. When these functions are delegated to specialised sections of the AOC holder's organisation, the operator is responsible for the following:

(i) Establishing a means to ensure that all functions have been accomplished before a flight can be authorised to depart.

(ii) Establish effective internal communications, operating procedures, and administrative controls to meet this obligation.

(iii) Ensuring that these procedures are published in the AOC holder's OM.

(iv) Ensuring that all sub-contracted activities are carried out in adherence with its policies and procedures and that its sub-contractors provide timely notification to the operator of any irregularities that will affect the safety and operational status of an aircraft or a flight.

APPENDIX 2

DUTIES OF FLIGHT OPERATIONS OFFICER/FLIGHT DISPATCHER

(a) A flight operations officer/flight dispatcher in conjunction with a method of control and supervision of flight operations in accordance with ORO.GEN.110 shall:

(1) assist the PIC in flight preparation and provide the relevant information;

(2) assist the PIC in preparing the operational and Air Traffic Services (ATS) flight plans, sign when applicable and file the ATS flight plan with the appropriate ATS unit; and

(3) furnish the PIC while in flight, by appropriate means, with information which may be necessary for the safe conduct of the flight.

(b) In the event of an emergency, a flight operations officer/flight dispatcher shall:

(1) initiate such procedures as outlined in the OM while avoiding taking any action that would conflict with ATC procedures; and

(2) convey safety-related information to the PIC 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 PIC also convey similar information to the flight operations officer/flight dispatcher during the course of the flight, particularly in the context of emergency situations.

APPENDIX 3

FLIGHT OPERATIONS OFFICER/FLIGHT DISPATCHER TRAINING PROGRAMME

(a) Operators are required to demonstrate an adequate organisation method of control and supervision of flight operation. A flight operations officer/flight dispatcher is normally employed to provide supervision of flight and to act as a close link between aircraft in flight and the ground services, and also between the aircrew and the operators' ground staff.

Malaysia does not issue flight operations officer/flight dispatcher licences. Flight operations officers/flight dispatcher applicants must meet the requirements specified below:

(1) Age

The applicant shall be not less than 21 years of age.

(2) Knowledge

The applicant shall have demonstrated a level of knowledge appropriate to the privileges granted to the holder of a flight operations officer licence, in at least the following subjects:

(i) Air law

(A) rules and regulations relevant to the holder of a flight operations officer licence; appropriate air traffic services practices and procedures;

(ii) Aircraft general knowledge

(B) principles of operation of aeroplane engines, systems and instruments;

(C) operating limitations of aeroplanes and engines; and

(D) minimum equipment list;

(iii) Flight performance calculation, planning procedures and loading

(E) effects of loading and mass distribution on aircraft performance and flight characteristics; mass and balance calculations;

(F) operational flight planning; fuel consumption and endurance calculations; alternate aerodrome selection procedures; en-route cruise control; extended range operation;

(G) preparation and filing of air traffic services flight plans; and

(H) basic principles of computer-assisted planning systems;

(iv) Human performance

(I) human performance relevant to dispatch duties, including principles of threat and error management;

(v) Meteorology

(J) aeronautical meteorology; the movement of pressure systems; the structure of fronts, and the origin and characteristics of significant weather phenomena which affect take-off, en-route and landing conditions; and

(K) interpretation and application of aeronautical meteorological reports, charts and forecasts; codes and abbreviations; use of, and procedures for obtaining, meteorological information;

(vi) Navigation

(L) principles of air navigation with particular reference to instrument flight;

(vii) Operational procedures

(M) use of aeronautical documentation;

(N) operational procedures for the carriage of freight and dangerous goods;

(O) procedures relating to aircraft accidents and incidents; emergency flight procedures; and

(P) procedures relating to unlawful interference and sabotage of aircraft;

(viii) Principles of flight

(Q) principles of flight relating to the appropriate category of aircraft; and

(ix) Radio communication

(R) procedures for communicating with aircraft and relevant ground stations.

(3) Experience

(i) The applicant shall have gained the following experience:

(A) a total of two years of service in any one or in any combination of the capacities specified in 1) to 3) inclusive, provided that in any combination of experience the period serviced in any capacity shall be at least one year:

(AA) a flight crew member in air transportation; or

(BB) a meteorologist in an organization dispatching aircraft in air transportation; or

(CC) an air traffic controller; or a technical supervisor of flight operations officers or air transportation flight operations systems;

or

(B) at least one year as an assistant in the dispatching of air transport;

or

(C) have satisfactorily completed a course of approved training.

(ii) The applicant shall have served under the supervision of a flight operations officer for at least 90 working days within the six months immediately preceding the application.

(4) Skill

(i) The applicant shall have demonstrated the ability to:

(A) make an accurate and operationally acceptable weather analysis from a series of daily weather maps and weather reports; provide an operationally valid briefing on weather conditions prevailing in the general neighbourhood of a specific air route; forecast weather trends pertinent to air transportation with particular reference to destination and alternates;

(B) determine the optimum flight path for a given segment, and create accurate manual and/or computer generated flight plans;

(C) provide operating supervision and all other assistance to a flight in actual or simulated adverse weather conditions, as appropriate to the duties of the holder of a flight operations officer licence; and

(D) recognize and manage threats and errors.

(b) A flight operations officer/flight dispatcher shall not be assigned to duty unless that person has:

(1) satisfactorily completed an operator-specific training course that addresses all the specific components of its approved method of control and supervision of flight operations specified in ORO.GEN.110(d);

(2) made, within the preceding 12 months, at least a one-way qualification flight in the flight crew compartment of an aeroplane over any area for which that individual is authorized to exercise flight supervision. The flight should include landings at as many aerodromes as practicable;

Note – For the purpose of the qualification flight, the flight operations officer/flight dispatcher must be able to monitor the flight crew intercommunication system and radio communications, and be able to observe the actions of the flight crew.

(3) demonstrated to the operator a knowledge of:

(i) the contents of the operations manual described in Appendix 14 (Content of operations manual);

(ii) the radio equipment in the aeroplanes used; and

(iii) the navigation equipment in the aeroplanes used;

(4) demonstrated to the operator a knowledge of the following details concerning operations for which the officer is responsible and areas in which that individual is authorized to exercise flight supervision:

(i) the seasonal meteorological conditions and the sources of meteorological information;

(ii) the effects of meteorological conditions on radio reception in the aeroplanes used;

(iii) the peculiarities and limitations of each navigation system which is used by the operation; and

(iv) the aeroplane loading instructions;

(5) demonstrated to the operator knowledge and skills related to human performance relevant to dispatch duties; and

(6) demonstrated to the operator the ability to perform the duties specified in Appendix 2.

(c) A flight operations officer/flight dispatcher assigned to duty should maintain complete familiarization with all features of the operation which are pertinent to such duties, including knowledge and skills related to human performance.

(d) A flight operations officer/flight dispatcher shall not be assigned to duty after 12 consecutive months of absence from such duty, unless the provisions of (b) are met.

(e) Flight Operations Officers/Flight Dispatchers training syllabi is provided in Attachment J:

APPENDIX 4

STANDARD OPERATING PROCEDURES (SOPs) AND CHECKLISTS

(a) SOPs - GENERAL

(1) Operators shall establish standard operating procedures (SOPs) that provide guidance to flight operations personnel to ensure safe, efficient, logical and predictable means of carrying out flight procedures.

(2) SOPs OBJECTIVES

(i) SOPs specify a sequence of tasks and actions to ensure that flight procedures can be carried out according to (a). To achieve these objectives, SOPs should unambiguously express:

(A) what the task is;

(B) when the task is to be conducted (time and sequence);

(C) by whom the task is to be conducted;

(D) how the task is to be done (actions);

(E) what the sequence of actions consists of; and

(F) what type of feedback is to be provided as a result of the actions (verbal call-out, instrument indication, switch position, etc.).

(3) SOPs DESIGN

(i) To ensure compatibility with specific operational environments and compliance by flight operations personnel, SOPs design should take into consideration:

(A) the nature of the operator’s environment and type of operation;

(B) the operational philosophy, including crew coordination;

(C) the training philosophy, including human performance training;

(D) the operator's corporate culture, including the degree of flexibility to be built into SOPs design;

(E) the levels of experience of different user groups, such as flight crews, aircraft maintenance engineers and cabin crew members;

(F) resource conservation policies, such as fuel conservation or wear on power plants and systems;

(G) flight deck automation, including flight deck and systems layout and supporting documentation;

(H) the compatibility between SOPs and operational documentation; and

(I) procedural deviation during abnormal/unforeseen situations.

(ii) Flight operations personnel should be involved in the development of SOPs.

(4) SOPs IMPLEMENTATION AND USE

Operators should establish a formal process of feedback from flight operations personnel to ensure standardization, compliance and evaluation of reasons for non-compliance during SOPs implementation and use.

(b) STABILIZED APPROACH REQUIREMENTS

(1) Maintaining a stable speed, descent rate, and vertical/lateral flight path in landing configuration is commonly referred to as the stabilized approach concept.

(2) Any significant deviation from planned flight path, airspeed, or descent rate should be announced. The decision to execute a go-around is no indication of poor performance.

Note – Do not attempt to land from an unstable approach

(3) Recommended Elements of a Stabilized Approach

(i) The following recommendations are consistent with criteria developed by the CAAM.

(ii) All approaches should be stabilized by 1,000 feet above airport elevation in IMC and by 500 feet above airport elevation in VMC. An approach is considered stabilized when all of the following criteria are met:

(A) The aircraft is in the correct flight path.

(B) Only small changes in heading/pitch are required to maintain the correct flight path.

(C) The aircraft speed is not more than VREF+20 knots indicated airspeed and not less than VREF.

(D) The aircraft is in the correct landing configuration.

(E) Sink rate is no greater than 1,000 fpm; if an approach requires a sink rate greater than 1,000 fpm, a special briefing should be conducted.

(F) Power setting is appropriate for the aircraft configuration.

(G) All briefings and checklists have been conducted.

(iii) Specific types of approaches are stabilized if they also fulfilled the following:

(A) ILS approaches should be flown within one dot of the glideslope and localizer.

(B) A category II or category III approach should be flown within the expanded localizer band.

(C) During a circling approach, wings should be level on final when the aircraft reaches 300 feet above airport elevation.

(iv) Unique approach procedures or abnormal conditions requiring a deviation from the above elements of a stabilized approach require a special briefing.

Note – An approach that becomes unstabilized below 1,000 feet above airport elevation in IMC or below 500 feet airport elevation in VMC requires an immediate go-around.

(v) These conditions should be maintained throughout the rest of the approach for it to be considered a stabilized approach. If the above criteria cannot be established and maintained at a below 500 feet AFE (above field elevation), initiate a go-around.

(vi) At 100 feet HAT (height above threshold) for all visual approaches, the aircraft should be positioned so the flight deck is within, and tracking so as to remain within, the lateral confines of the runway extended.

(vii) As the aircraft crosses the runway threshold it should be:

(A) Stabilized on target airspeed to within + 10 knots until arresting descent rate at flare.

(B) On a stabilized flight path using normal manoeuvring.

(C) Positioned to make a normal landing in the touchdown zone (i.e., first 3,000 feet or first third of the runway, whichever is less)

Initiate a go-around if the above criteria cannot be maintained.

(4) Manoeuvring (including runway changes and circling)

(i) When manoeuvring below 500 feet, be cautious of the following:

(A) Descent rate change to acquire glide path.

(B) Runway lateral displacement.

(C) Tailwind/crosswind components.

(D) Runway length available.

(5) Mandatory Missed Approach

(i) On all instrument approaches, execute an immediate missed approach:

(A) If a navigation radio or flight instrument failure occurs this affects the ability to safely complete the approach in instrument conditions.

(B) When on ILS final approach, in instrument conditions, and either the localizer and/or glide slope indicator shows full deflection.

(C) When the navigation instruments show significant disagreement and visual contact with the runway has not been made.

(D) When on a Required Navigation Performance (RNP) based approach, and an Flight Management Computer (FMC) alerting message indicates that Actual Navigation Performance (ANP) exceeds RNP.

(E) When on radar approach and radio communication is lost.

(c) CHECKLISTS - GENERAL

(1) Operators shall establish checklists as an integral part of SOPs. Checklists should describe the actions relevant to specific phases of operations (engine start, taxi, take-off, etc.) that flight crews must perform or verify and which relate to flight safety. Checklists should also provide a framework for verifying aircraft and systems configuration that guards against vulnerabilities in human performance.

(2) CHECKLIST OBJECTIVES

(i) Normal checklists should aid flight crews in the process of configuring the aircraft and its systems by:

(A) providing logical sequences of coverage of the flight deck panels;

(B) providing logical sequences of actions to meet both internal and external flight deck operational requirements;

(C) allowing mutual monitoring among flight crew members to keep all flight crew members in the information loop; and

(D) facilitating crew coordination to assure a logical distribution of flight deck tasks.

(ii) Checklists for use in abnormal situations and those for emergency situations should aid flight crews in coping with malfunctions of aircraft systems and/or emergency situations. They should also guard against vulnerabilities in human performance during high workload situations by fulfilling the objectives in (b)(2)(i) and, in addition, by:

(A) ensuring a clear allocation of duties to be performed by each flight crew member;

(B) acting as a guide to flight crews for diagnosis, decision making and problem solving, (prescribing sequences of steps and/or actions); and

(C) ensuring that critical actions are taken in a timely and sequential manner.

(3) CHECKLIST DESIGN

(i) Order of checklist items

(A) The following factors should be considered when deciding the order of the items in checklists:

(AA) the operational sequence of aircraft systems so that items are sequenced in the order of the steps for activation and operation of these systems;

(BB) the physical flight deck location of items so that they are sequenced following a flow pattern;

(CC) the operational environment so that the sequence of checklists considers the duties of other operational personnel such as cabin crew and flight operations officers;

(DD) operator policies (for example, resource conservation policies such as single-engine taxi)

that may impinge on the operational logic of checklists;

(EE) verification and duplication of critical configuration-related items so that they are checked in the normal sequence and again immediately before the phase of flight for which they are critical; and

(FF) sequencing of critical items in abnormal and emergency checklists so that items most critical are completed first.

(B) Critical items should appear no more than twice on a given checklist (see (3)(i)(A)(EE)). Critical items should be verified by more than one flight crew member.

(ii) Number of checklist items

The number of items in checklists should be restricted to those critical to flight safety.

Note – The introduction of advanced technology in the flight deck, allowing for automated monitoring of flight status, may justify a reduction in the number of items required in checklists.

(iii) Checklist interruptions

SOPs should include techniques to ensure a step-by-step, uninterrupted sequence of completing checklists. SOPs should unambiguously indicate the actions by flight crews in case of checklist interruptions.

(iv) Checklist ambiguity

Checklist responses should portray the actual status or the value of the item (switches, levers, lights, quantities, etc.).

Checklists should avoid non-specific responses such as “set”, “checked” or “completed”.

(v) Checklist coupling

Checklists should be coupled to specific phases of flight (engine start, taxi, take-off, etc.). SOPs should avoid tight coupling of checklists with the critical part of a phase of flight (for example, completing the take-off checklist on the active runway). SOPs should dictate a use of checklists that allows buffers for detection and recovery from incorrect configurations.

(vi) Typography

(A) Checklist layout and graphical design should observe basic principles of typography, including at least legibility of print (discriminability) and readability under all flight deck lighting conditions.

(B) If colour coding is used, standard industry colour coding should be observed in checklist graphical design. Normal checklists should be identified by green headings, system malfunctions by yellow headings, and emergency checklists by red headings.

(C) Colour coding should not be the only means of identifying normal, abnormal and emergency checklists.

(d) CREW BRIEFINGS - GENERAL

(1) Operators shall establish crew briefings as an integral part of SOPs. Crew briefings communicate duties, standardize activities, ensure that a plan of action is shared by crew members and enhance crew situational awareness.

Operators shall establish both individual and combined crew briefings for flight crew and cabin crew.

(2) OBJECTIVES

Crew briefings should aid crews in performing safety-critical actions relevant to specific phases of flight by:

(i) refreshing prior knowledge to make it more readily accessible in real-time during flight;

(ii) constructing a shared mental picture of the situation to support situational awareness;

(iii) building a plan of action and transmitting it to crew members to promote effective error detection and management; and

(iv) preparing crew members for responses to foreseeable hazards to enable prompt and effective reaction.

Note – Without briefings, and under the pressure of time constraints and stress, retrieving information from memory may be an extremely unreliable process.

(3) PRINCIPLES

(i) The following principles should be considered when establishing crew briefings:

(A) crew briefings should be short and should not include more than ten items. If more than ten items are necessary, consideration should be given to splitting the briefing into sequential phases of the flight;

(B) crew briefings should be simple and succinct, yet sufficiently comprehensive to promote understanding of the plan of action among all crew members;

(C) crew briefings should be interactive and where possible should use a question-and-answer format;

(D) crew briefings should be scheduled so as not to interfere with, and to provide adequate time for, the performance of operational tasks; and

(E) crew briefings should achieve a balance between effectiveness and continual repetition of recurring items.

Note – Crew briefings that become routine recitations do not refresh prior knowledge and are ineffective.

(ii) Any intended deviation from SOPs required by operational circumstances should be included as a specific briefing item.

(4) APPLICATION

(i) Operators shall implement flight and cabin crew briefings for specific phases of operations to include actual conditions and circumstances, as well as special aspects of operations.

(ii) Flight crew briefings shall be conducted for, but not be limited to, the following phases of operations:

(A) pre-flight;

(B) departure; and

(C) arrival.

(iii) Cabin crew briefings shall be conducted for, but not be limited to, the following phases of operations:

(A) pre-flight; and

(B) first departure of the day.

(iv) Cabin crew briefings should be conducted following changes of aircraft type or crew and before flights involving a stop of more than two hours.

(5) SCOPE

(i) Pre-flight briefings shall include both flight crew and cabin crew.

(ii) Pre-flight briefings should focus on crew coordination as well as aircraft operational issues. They should include, but not be limited to:

(A) any information necessary for the flight, including unserviceable equipment or abnormalities that may affect operational or passenger safety requirements;

(B) essential communications, and emergency and safety procedures; and

(C) weather conditions.

(iii) Flight crew departure briefings should prioritize all relevant conditions that exist for the take-off and climb. They should include, but not be limited to:

(A) runway in use, aircraft configuration and take-off speeds;

(B) taxi-out route and relevant hot spots;

(C) departure procedures;

(D) departure routes;

(E) navigation and communications equipment set-up;

(F) aerodrome, terrain and performance restrictions, including noise abatement procedures (if applicable);

(G) take-off alternates (if applicable);

(H) any item(s) included in the minimum equipment list (if applicable);

(I) review of applicable emergency procedures; and

(J) applicable standard call-outs.

(M) Flight crew arrival briefings should prioritize all relevant conditions that exist for the descent, approach and landing. They should include, but not be limited to:

(A) terrain restrictions and minimum safe altitudes during descent;

(B) arrival routes;

(C) instrument or visual approach procedures and runway in use;

(D) operational minima, aircraft configuration, and landing speeds;

(E) navigation and communications equipment set-up;

(F) taxi-in route and relevant hot spots;

(G) missed approach procedures;

(H) alternate aerodromes and fuel considerations;

(I) review of applicable emergency procedures;

(J) applicable standard call-outs; and

(K) cold temperature correction.

(v) Cabin crew briefings should prioritize all relevant conditions that exist for the departure. They should include, but not be limited to:

(A) assignment of take-off/landing positions;

(B) review of emergency equipment;

(C) passengers requiring special attention;

(D) the silent review process;

Note – The silent review process is the self-review of individual actions in the event of emergencies.

(E) review of applicable emergencies;

(F) security or service-related topics that may impact on passenger or crew safety; and

(G) any additional information provided by the operator, including review of new procedures, equipment and systems.

APPENDIX 5

OPERATIONAL FLIGHT PLAN (OFP)

(a) The operator shall complete and file to the appropriate ATS unit an ATS flight plan for each intended flight. Such ATS flight plan shall be approved and signed by the PIC, and, where applicable, the flight operations officer/flight dispatcher. A copy shall be kept by the operator or designated agent.

(b) The operator shall complete an operational flight plan for each intended flight, and supply for the use of the flight crew operational flight plan forms or prepared flight plan/logs to be used on all flights. The operational flight plan is the operator's plan for the safe conduct of the flight based on considerations of aircraft performance, other operating limitations and relevant expected conditions on the route to be followed and at the aerodromes (or heliports, as appropriate) concerned.

(c) The operational flight plan shall be approved and signed by the pilot-in-command, and where applicable, the flight operations officer/flight dispatcher. A copy of the operational flight plan shall be filed with the operator or a designated agent, or left on record in a suitable place at the point of departure. The following entries should be provided for:

(1) Name of flight deck crew;

(2) Flight number (or other designation), date, aircraft type and registration;

(3) Names of reporting and turning points together with codings and frequencies of radio aids;

(4) Tracks and distances;

(5) Flight times between reporting and turning points;

(6) ETA, revised ETA and ATA at each reporting and turning point;

(7) Minimum safe altitude for each stage of the flight;

(8) Altimeter settings at points of departure and destination;

(9) Cleared cruising altitudes or flight levels;

(10) Destination alternate aerodrome and en-route alternate aerodromes for extended range operations by aeroplanes with two engines extended diversion time operations (EDTO);

(11) EDTO; Reduced Vertical Separation Minimum (RVSM); Minimum Navigation Performance Specification (MNPS); RNP; Area Navigation (RNAV);

(12) Information from meteorological broadcasts;

(13) A brief and simple statement of the fuel requirement and the manner in which it was computed (e.g. three figures – fuel to destination, fuel for diversion and holding, fuel for contingencies and total fuel – would suffice);

(14) If not maintained separately, a fuel log in which to record in-flight fuel checks;

(15) Space for noting ATC clearances;

(16) Taxi, airborne, landing and engine-off times.

(d) Operators should ensure that the forms are properly completed for each flight and retained for a period of three months.

(e) For scheduled journeys it is desirable that operators should use a prepared navigational flight plan on which tracks, distances, minimum safe altitudes, etc

are printed. Special precautions will be necessary, of course, to ensure that amendments are incorporated as they become effective.

APPENDIX 6

FLIGHT FOLLOWING OR AIRCRAFT TRACKING

(a) An AOC holder shall establish policy, procedures and requirements for flight following as a method of flight supervision and notification to the management and search and rescue authorities if the flight is overdue or missing. To ensure successful flight supervision, the operator needs to establish the following:

(1) The dispatcher's flight-following requirements and procedures should be clearly identified;

(2) The operator must show that a two way radio communication system or other means of communication is available and reliable under normal operating conditions over entire route between aircraft and air traffic control unit and appropriate dispatch centre;

(3) The proper monitoring of the progress of each flight with respect to its departure at the point of origin and arrival at its destination, including intermediate stops and diversions;

(4) Policy and guidance should be provided to flight crews and dispatchers for monitoring fuel en-route;

(5) Flight crew reporting requirements and procedures should be clearly stated;

(6) There shall be specific procedures for dispatchers to follow when a required report is not received;

(7) The operator should maintain a record of communications between the dispatcher and the flight;

(8) Procedures shall be established to notify flights en route concerning hazardous conditions relating to aerodromes, navigations aids, etc., and to report changes in forecast weather. The PIC is provided with all information necessary for the safety of the flight; and

(9) While carrying out the flight following, the operator shall ensure that the flight operations officer/flight dispatcher avoid taking any action that would conflict with the procedures established by:

(i) Air Traffic Control;

(ii) The meteorological service; or

(iii) The communication service.

(b) An AOC holder conducting charter/lease operations may arrange to have flight following facilities provided by persons other than its employees, but in such a case the AOC holder continues to be primarily responsible for operational control of each flight.

(1) Each AOC holder conducting charter/lease operations using a flight following system shall show that the system has adequate facilities and personnel to provide the information necessary for the initiation and safe conduct of each flight to:

(i) The flight crew of each aircraft; and

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

(2) Each AOC holder conducting charter/lease operations shall show that the personnel required to perform the function of operational control are able to perform their duties.

(c) Flight following procedures and the standards of qualifications for the individual performing this function shall be described in the operator's OM.

APPENDIX 7

DEVELOPMENT AND ORGANIZATION OF FLIGHT SAFETY DOCUMENTS SYSTEM

(a) Introduction

(1) It should be understood that the development of a flight safety documents system is a complete process, and changes to each document comprising the system may affect the entire system.

(2) The operational documents developments tend to focus on a single aspect of documents design, for example, formatting and typography. It rarely covers the entire process of operational documents development. It is important for operational documents to be consistent with each other, and consistent with regulations, manufacturer requirements and Human Factors principles. It is also necessary to ensure consistency across departments as well as consistency in application. Hence the emphasis on an integrated approach, based on the notion of the operational documents as a complete system.

(b) Organization

(1) A flight safety documents system should be organized according to criteria which ensure easy access to information required for flight and ground operations contained in the various operational documents comprising the system and which facilitate management of the distribution and revision of operational documents.

(2) Information contained in a flight safety documents system should be grouped according to the importance and use of the information, as follows:

(i) time critical information, e.g., information that can jeopardize the safety of the operation if not immediately available;

(ii) time sensitive information, e.g., information that can affect the

level of safety or delay the operation if not available in a short time period;

(iii) frequently used information;

(iv) reference information, e.g., information that is required for the operation but does not fall under b) or c) above; and

(v) information that can be grouped based on the phase of operation in which it is used.

(3) time critical information should be placed early and prominently in the flight safety documents system.

(4) time critical information, time sensitive information, and frequently used information should be placed in cards and quick-reference guides.

(c) Validation

(1) The flight safety documents system should be validated before deployment, under realistic conditions. Validation should involve the critical aspects of the information use, in order to verify its effectiveness. Interactions among all groups that can occur during operations should also be included in the validation process.

(d) Design

(1) A flight safety documents system should maintain consistency in terminology and in the use of standard terms for common items and actions.

(2) Operational documents should include a glossary of terms, acronyms and their standard definition, updated on a regular basis to ensure access to the most recent terminology. All significant terms, acronyms and abbreviations included in the flight documents system should be defined.

(3) A flight safety documents system should ensure standardization across document types, including writing style, terminology, use of graphics and symbols, and formatting across documents. This includes a consistent location of specific types of information, consistent use of units of measurement and consistent use of codes.

(4) A flight safety documents system should include a master index to locate, in a timely manner, information included in more than one operational document.

Note – The master index must be placed in the front of each document and consist of no more than three levels of indexing. Pages containing abnormal and emergency information must be tabbed for direct access.

(5) A flight safety documents system should comply with the requirements of the operator's quality system, if applicable.

(e) Deployment

(1) Operators should monitor deployment of the flight safety documents system, to ensure appropriate and realistic use of the documents, based on the characteristics of the operational environment and in a way which is both operationally relevant and beneficial to operational personnel. This monitoring should include a formal feedback system for obtaining input from operational personnel.

(f) Amendment

(1) Operators should develop an information gathering, review, distribution and revision control system to process information and data obtained from all sources relevant to the type of operation conducted, including, but not limited to, the CAAM, State of design, State of Registry, manufacturers and equipment vendors.

Note – Manufacturers provide information for the operation of specific

aircraft that emphasizes the aircraft systems and procedures under conditions that may not fully match the requirements of operators. Operators should ensure that such information meets their specific needs and those of the CAAM.

(2) Operators should develop an information gathering, review and distribution system to process information resulting from changes that originate within the operator, including:

(i) changes resulting from the installation of new equipment;

(ii) changes in response to operating experience;

(iii) changes in an operator's policies and procedures;

(iv) changes in an operator certificate; and

(v) changes for purposes of maintaining cross fleet standardization.

Note – Operators should ensure that crew coordination philosophy, policies and procedures are specific to their operation.

(3) A flight safety documents system should be reviewed:

(i) on a regular basis (at least once a year);

(ii) after major events (mergers, acquisitions, rapid growth, downsizing, etc.);

(iii) after technology changes (introduction of new equipment); and

(iv) after changes in safety regulations.

(4) Operators should develop methods of communicating new information. The specific methods should be responsive to the degree of communication urgency.

Note – As frequent changes diminish the importance of new or modified procedures, it is desirable to minimize changes to the flight safety documents system.

(5) New information should be reviewed and validated considering its effects on the entire flight safety documents system.

(6) The method of communicating new information should be complemented by a tracking system to ensure currency by operational personnel. The tracking system should include a procedure to verify that operational personnel have the most recent updates.

APPENDIX 8

AIRCRAFT OBSERVATIONS AND REPORTS

(a) Obligations of Operator

The operator shall arrange in accordance to these FOD the observations to be made by aircraft operating on international air routes and for the recording and reporting of these observations.

(b) Types of aircraft observations

The following aircraft observations shall be made:

(1) routine aircraft observations during en-route and climb-out phases of the flight; and

(2) special and other non-routine aircraft observations during any phase of the flight.

(c) Routine aircraft observations — designation

(1) When air-ground data link is used and automatic dependent surveillance (ADS) or secondary surveillance radar (SSR) Mode S is being applied, automated routine observations should be made every 15 minutes during the en-route phase and every 30 seconds during the climb-out phase for the first 10 minutes of the flight.

(2) For helicopter operations to and from aerodromes on offshore structures, routine observations should be made from helicopters at points and times as agreed between the meteorological authorities and the helicopter operators concerned.

(3) In the case of air routes with high-density air traffic (e.g. organized tracks), an aircraft from among the aircraft operating at each flight level shall be designated, at approximately hourly intervals, to make routine observations in accordance with para (c)(1). The designation procedures shall be subject to regional air navigation agreement.

(4) In the case of the requirement to report during the climb-out phase, an aircraft shall be designated, at approximately hourly intervals, at each aerodrome to make routine observations in accordance with para (c)(1).

(d) Routine aircraft observations — exemptions

Aircraft not equipped with air-ground data link shall be exempted from making routine aircraft observations.

(e) Special aircraft observations

Special observations shall be made by all aircraft whenever the following conditions are encountered or observed:

(1) moderate or severe turbulence; or

(2) moderate or severe icing; or

(3) severe mountain wave; or

(4) thunderstorms, without hail, that are obscured, embedded, widespread or in squall lines; or

(5) thunderstorms, with hail, that are obscured, embedded, widespread or in squall lines; or

(6) heavy duststorm or heavy sandstorm; 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.

(f) Other non-routine aircraft observations

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

Note — 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 available evidence.

(g) Reporting of aircraft observations during flight

(1) Aircraft observations shall be reported by air-ground data link. Where air-ground data link is not available or appropriate, special and other non-routine aircraft observations during flight shall be reported by voice communications.

(2) Aircraft observations shall be reported during flight at the time the observation is made or as soon thereafter as is practicable.

(3) Aircraft observations shall be reported as air-reports (AIREP) in accordance to the form in Attachment K.

(h) Relay of air-reports by air traffic services units

The meteorological authority concerned shall make arrangements with the appropriate ATS authority to ensure that, on receipt by the air traffic services units of:

(1) special air-reports by voice communications, the air traffic services units relay them without delay to their associated meteorological watch office; and

(2) routine and special air-reports by data link communications, the air traffic services units relay them without delay to their associated meteorological watch office and World Area Forecast System (WAFC)s.

(i) Recording and post-flight reporting of aircraft observations of volcanic activity
Special aircraft observations of pre-eruption volcanic activity, a volcanic eruption or volcanic ash cloud shall be recorded on the special air-report of volcanic activity form. A copy of the form shall be included with the flight documentation provided to flights operating on routes which, in the opinion of the meteorological authority concerned, could be affected by volcanic ash clouds.

REPORTING, RECORDING AND POST-FLIGHT REPORTING OF AIRCRAFT OBSERVATIONS OF VOLCANIC ACTIVITY

SPECIFIC PROVISIONS RELATED TO REPORTING VOLCANIC ASH

(a) Observations and reports of volcanic activity
The occurrence of pre-eruption volcanic activity, volcanic eruptions and volcanic ash cloud should be reported without delay to the associated air traffic services unit, aeronautical information services unit and meteorological watch office. The report should be made in the form of a volcanic activity report comprising the following information in the order indicated:

(1) message type, VOLCANIC ACTIVITY REPORT;

(2) station identifier, location indicator or name of station;

(3) date/time of message;

(4) location of volcano and name if known; and

(5) concise description of event including, as appropriate, level of intensity of volcanic activity, occurrence of an eruption and its date and time, and the existence of a volcanic ash cloud in the area together with direction of ash cloud movement and height.

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

(b) Post-Flight Reporting of Volcanic Activity

(1) On arrival of a flight at an aerodrome, the completed report of volcanic activity shall be delivered by the operator or a flight crew member, without delay, to the aerodrome meteorological office, or if such office is not easily accessible to arriving flight crew members, the completed form shall be dealt with in accordance with local arrangements made by the meteorological authority and the operator in accordance to the form in Attachment K.

(2) The completed report of volcanic activity received by an aerodrome meteorological office shall be transmitted without delay to the meteorological watch office responsible for the provision of meteorological watch for the flight information region in which the volcanic activity was observed.

(c) IMPLEMENTATION

(1) Air Operator Certificate holders operating an international CAT are to include in their OM the provisions related to reporting volcanic activity (as described in paragraph (a) and (b)).

The detailed instructions for recording and reporting volcanic activity observations are given in the PANS-ATM (Doc 4444), Appendix 1.

APPENDIX 9

ROUTE QUALIFICATION REQUIREMENT

(a) GENERAL

(1) A flight is authorized to operate on a route or within an area covered in the Air Operator Certificate.

(2) The aircraft's navigation equipment serviceability status is equal to or better than the minimum specified for the flight to or within the area.

(3) A station inspection shall be conducted prior to the approval for the new route if the destination airport is new or the type of aircraft to be used which requires special equipment, ground support or special procedure.

(b) ROUTE REQUIREMENTS

(1) The operator seeking a route qualification must show its ability to conduct satisfactorily a schedule or ad-hoc operation by submitting the documentation of the proposed operation.

(2) The facilities and services required to support the operation for the route are available, serviceable and adequate for the proposed operation.

(3) An actual flight may not be required before a proposed schedule or ad-hoc operation provided a satisfactory level of safety of the operation is assured. This shall be considered through the availability and adequacy of airports, en-route communication, navigation aids, aircraft and ground radio facilities, lightings, fuelling, maintenance and the ability of personnel.

(4) A proving flight may be conducted simultaneously with the inaugural flight after an evaluation by the CAAM.

(5) The designated routes or airways including advisory routes shall take into consideration the followings:

(i) Navigation specification;

(ii) EDTO or non EDTO segment;

(iii) Reduced Vertical Separation Minimum (RVSM);

(iv) Terrain clearance;

(v) Minimum en-route altitude;

(vi) Air traffic density;

(vii) Air traffic procedure;

(viii) Oxygen requirement; and

(ix) Escape procedure;

(c) AIRPORT REQUIREMENTS

(1) The operator shall ensure that the intended route has sufficient airports that are properly equipped for the proposed operation.

(2) The operator must demonstrate that it has a system for obtaining, maintaining and distributing to appropriate personnel current aeronautical data for each airport it uses to ensure a safe operation at that airport. The aeronautical data must include the following:

(i) Airport

(A) Facilities;

(B) Public protection;

(C) Navigation and communication aids;

(D) Construction affecting takeoff, landing or ground operations;

(E) Air traffic facilities; and

(F) Noise abatement procedures.

(ii) Runway, clearway and stop way

(A) Dimension;

(B) Surface;

(C) Marking and lighting system; and

(D) Elevation and gradient.

(iii) Displaced threshold

(A) Location;

(B) Dimension; and

(C) Takeoff or landing or both.

(iv) Obstacle

(A) Those affecting takeoff and/or landing performance;

(B) Instrument flight procedure;

(C) Departure procedure;

(D) Approach procedure; and

(E) Missed approach procedure.

(v) Special information

(A) Runway visual range if applicable;

(B) Low visibility operation advisory if applicable; and

(C) Special operation procedures peculiar to the airport.

(d) COMMUNICATION FACILITY

(1) The operator must show that a two way radio communication system or other means of communication is available and reliable under normal operating conditions over entire route between aircraft and air traffic control unit and appropriate dispatch centre.

(e) WEATHER REPORTING FACILITY

(1) The operator must show that adequate weather reporting services are available along each route to ensure weather reports and forecast necessary for operation.

(2) The operator shall establish a system and procedure to update weather report and forecast to ensure current and valid reporting for adverse weather phenomena such as clear air turbulence and thunderstorm that may affect safety of the flight on the route to be flown and at the airport to be used.

(f) NAVIGATION FACILITY

(1) The operator must show that for each route that non visual ground aids are available within the degree of accuracy required for Air Traffic Control; or

(2) If the route is specified under special navigation operation, the relevant navigation requirement must be met such as required navigation performance, minimum navigation performance specification or random route utilizing latitude and longitude waypoint.

(3) Non visual ground aid is not required for day VFR and night VFR provided it is shown that it can be conducted safely by pilotage due characteristic of the terrain or reliably lightedlandmark for safe operation.

(g) MAINTENANCE FACILITY

(1) The operator must show that it has competent personnel and adequate facility and equipment available at the intended airport for properservicing and maintenance of the aircraft and auxiliaryitems.

(h) DISPATCH CENTER

(1) The operator must show that it has adequate dispatch centre with qualified dispatch personnel for the operation to ensure proper operational control for each flight.

(i) RESCUE AND FIRE FIGHTING SERVICES (RFFS)

(1) The operator must ensure that relevant RFFS category must be met for applicable aircraft at the airport of operation. However certain countries adopted its own requirement especially for EDTO operation. Therefore an operator may exercise its requirement whenever applicable if operating into their Flight Information Region (FIR).

(j) AERODROME

(1) Aerodromes are classified according to certain criteria to determine its category.

(i) Category A

These are simple and straightforward aerodromes that have no factors requiring special procedure to enhance the safety aspect of operation. The safety level of operations can be assured and ascertained by the crew through the study of relevant en-route and approach charts. The aerodrome is not closely surrounded by mountainous terrain or obstacle.

(ii) Category B

These are aerodromes that do not satisfy the conditions of the Category A. It requires a written Aerodrome Brief disseminated to crew for proper study and understanding to ensure safe level of operations.

(iii) Category C

These aerodromes are subject to special procedures whereby prior knowledge or experience is required. It requires a written Aerodrome Brief and prior visit as an operating crewor as an observer and/or a simulator exercise. The special procedures must be detailed in the Aerodrome Brief such as follows:

(A) Complicated ATC procedures with high density traffic;

(B) Difficult or non-standard departure and/or approach pattern;

(C) Hazardous local weather condition;

(D) Hazardous local terrain surrounding the area; and

(E) Other peculiar subject that affect normal performance on ground, departure and/or arrival.

(k) THE CREW

(1) The operator shall establish a policy and procedure to ensure that the crews are adequately trained and qualified with currency to operate into the specified aerodrome.

(2) The flight crew are current, qualified and certificated if required to operate to the route or into the area.

(3) If it is a training flight then the trainee must be current and has successfully completed the route brief and assimilated himself with the area of operation.

(4) The operator shall keep and update the records of qualification for its crew.

(l) APPLICATION PROCESS

(1) The operator must submit the application not lesser than 30 days prior to the intended date of operation.

(2) A station inspection if necessary will be conducted at least two weeks prior to the intended date of operation.

(3) The operator must furnish with the submission for route details including risk assessment and management of change (MOC) of the intended operation following the requirements in para (b) to (k).

APPENDIX 10

OPERATIONS OF SINGLE ENGINE TURBINE POWERED AEROPLANES AT NIGHT AND/OR IN INSTRUMENT METEROLOGICAL CONDITIONS

(a) An operator intending to operate single-engine turbine-powered aeroplanes at night and/or in IMC shall satisfy the Authority that the airworthiness certification of the aeroplane is appropriate and that the overall level of safety is ensured by:

(1) the reliability of the turbine engine;

(2) the operator's maintenance procedures, operating practices, flight dispatch and crew training programmes;

(3) equipment and other requirements provided in accordance with this Appendix; and

(4) automatic engine trend monitoring system.

(b) Flight crew training and checking for operation at night and/or IMC by single engine turbine-powered aeroplane

(1) The minimum flight crew experience required for night/IMC operations by single engine turbine-powered aeroplanes shall be as prescribed in ORO.FC.202(e).

(2) An operator's 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 forced landing in night and/or in IMC conditions.

(c) Turbine Engine Reliability

(1) Turbine engine reliability shall be shown to have a world fleet power loss rate of less than 1 per 100,000 engine hours.

(i) Power loss rate should be determined as a moving average over a specified period (e.g. a 12-month moving average if the sample is large). Power loss rate, rather than in-flight shut-down rate, is used as it is considered to be more appropriate for single-engine aeroplane.

(ii) In determining power loss rate the actual period selected should reflect the global utilisation and the relevance of the experience included (e.g. early data may not be relevant due to subsequent mandatory modifications which affected the power loss rate). After the introduction of a new engine variant and whilst global utilisation is relatively low, the total available experience may have to be used to try to achieve a statistically meaningful average.

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.

(iii) A reliability programme should be established covering the engine and associated systems. The engine programme should include engine hours flown in the period and in-flight shutdown rate for all causes and the unscheduled engine removal rate, both on a 12-month moving average basis. The event reporting process should cover all items relevant to the ability to operate safely at night and/or IMC. Any sustained adverse trend should result in an immediate evaluation by the operator in consultation with the Authority and the manufacturer with a view to determining actions to restore the intended safety level. The operator should develop a parts control programme with support from the manufacturer that ensures that the proper parts and configuration are maintained for single engine turbine-powered aeroplanes approved to conduct these operations. The programme includes

verification that parts placed on an approved single engine turbine-powered aeroplane during parts borrowing or pooling arrangements, as well as those parts aeroplane approved for single engine operations.

(iv) In assessing turbine engine reliability, evidence should be derived from world fleet database covering as large a sample as possible of operations considered to be representative. Data from engine trend monitoring and event reports should also be monitored to ensure that there is no indication that the operator's experience is unsatisfactory.

(2) The operator shall be responsible for engine trend monitoring which should include the following:

(i) an oil consumption monitoring programme based on manufacturers' recommendations; and

(ii) an engine condition monitoring programme describing the parameters to be monitored, the method of the data collection and corrective action process, based on the manufacturer's recommendations. The monitoring is intended to detect turbine engine deterioration at an early stage before safe operation is affected.

(3) To minimise the probability of in-flight engine failure, the engine shall be equipped with:

(i) an ignition system that activates automatically, or is capable of being operated manually, for take-off and landing, and during flight in visible moisture;

(ii) 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

(iii) 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) System and equipment

(1) 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:

(i) 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;

(ii) a radio altimeter;

(iii) an emergency electrical supply system of sufficient capacity and endurance following loss of all generated power to, as a minimum:

(A) maintain the operation of all essential flight instruments, communication and navigation systems during a descent from the maximum certificated altitude in a glide configuration to the completion of a landing;

(B) lower the flaps and landing gear, if applicable;

(C) provide power to one pitot heater, which must serve an air speed indicator clearly visible to the pilot;

(D) provide for operation of the landing light specified in subparagraph (x) below;

(E) provide engine restart, if applicable; and

(F) provide for the operation of the radio altimeter;

(iv) two attitude indicators, powered from independent sources;

(v) a means to provide for at least one attempt at engine re-start;

(vi) airborne weather radar;

(vii) a certified area navigation 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;

(viii) for passenger operations, passenger seats and mounts which 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;

(ix) 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;

(x) 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

(xi) an engine fire warning system.

(e) Operational and maintenance programme requirements

(1) The approval to undertake operations by single-engine turbine-powered aeroplanes at night and/or in IMC specified in the air operator certificate will include the particular airframe/engine combinations, including the

current type design standard for such operations, the specific aeroplane approved, and the areas or routes of such operations.

(2) The operator's Continuing Airworthiness Management Exposition shall include a statement of certification of the additional equipment required, and of the maintenance and reliability programme for such equipment, including the engine.

(f) OM and route planning

(1) The flight manual shall include limitations, procedures, approval status and other information relevant to operations by single-engined turbine-powered aeroplanes at night and/or in IMC.

(2) The OM shall include all necessary information relevant to operations by single-engine turbine-powered aeroplanes at night and/or IMC. This shall include all of the additional equipment, procedures and training required for such operations, route and/or area of operation and aerodrome information (including planning and operating minima).

(3) Route planning should take account of all relevant information in the assessment of intended routes or areas of operations, including the following:

(i) the nature of the terrain to be flown, including the potential for carrying out a safe forced landing in the event of an engine failure or major malfunction;

(ii) weather information, including seasonal and other adverse meteorological influences that may affect the flight; and

(iii) other criteria and limitations as specified by the CAAM.

(4) An operator should 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 area navigation system.

Note 1 – A safe forced landing in this context means a landing 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 – 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 this Appendix.

(g) Route limitations over water

(1) Operators of single-engine turbine-powered aeroplanes carrying out operations at night and/or in IMC should make an assessment of the route limitations over water.

The distance from an area suitable for forced landing/ditching that the aeroplane may be operated should be determined, which equates to the glide distance from the cruise altitude to the forced landing area, following engine failure, assuming still air conditions. Additional distance may be included taking into account the likely prevailing conditions and the type of operation. This should include considerations for sea conditions, the survival equipment carried, the achieved engine reliability and the search rescue services available.

(2) Any additional distance allowed beyond the glide distance should not exceed a distance equivalent to 15 minutes at the aeroplane's normal cruise speed.

(h) Minimum Equipment List

(1) The minimum equipment list of an operator approved in accordance with regulation 110 CAR 2016 shall specify the operating equipment required for night and/or IMC operations, and for day/VMC operations.

(i) Event reporting

(1) An operator approved for operations by single-engined turbine-powered aeroplanes at night and/or in IMC shall report all significant failures, malfunctions or defects to the CAAM

.

(j) Operator certification or validation

(1) The operator shall demonstrate the ability to conduct operations by single engine turbine-powered aeroplanes at night and/or in IMC to the CAAM.

(2) The certification process should include the operator's ability to ensure adequacy of its procedures for normal, abnormal and emergency operations, including actions following engine, systems or equipment failures. In addition to the normal requirements for operator certification or validation, the following items should be addressed in relation to operations by single engine turbine-powered aeroplanes:

(i) proof of the achieved engine reliability of the aeroplane engine combination referred to in paragraph (c) above;

(ii) specific and appropriate training and checking procedures including those to cover engine failure/malfunction on the ground, after take-off and en- route and descend to a forced landing from the normal cruising altitude;

(iii) a maintenance programme which is extended to address the equipment and systems referred to in paragraph (d) above;

(iv) an MEL modified to address the equipment and system necessary for operations at night and/or in IMC;

(v) planning and operating minima appropriate to the operations at night and/or in IMC;

(vi) departure and arrival procedures and any route limitations;

(vii) pilot qualifications and experience; and

(viii) the OM, including limitations, emergency procedures, approved routes or areas of operation, the MEL and normal procedures related to the equipment.

APPENDIX 11

CONTINUED SURVEILLANCE

(a) GENERAL

(1) The areas to be covered in the surveillance activities will be essentially the same as those examined during the original certification process and will include at least a re-evaluation of the operator's organization, management of effectiveness and control, facilities, equipment, aircraft maintenance, operational control, maintenance of flight crew standards, passenger cargo safety procedures, security precautions, cross checking of operations and personnel records, training, company manuals, specific operating provisions and pertinent CAAM regulations.

(b) CONDUCT OF SURVEILLANCE

(1) It is essential that surveillance be conducted to a common standard. Inspections therefore will be carried out in accordance with established methods and criteria. The paragraph, which follow in this section provide the description of the routine inspection or surveillance checks that the Inspectorate would conduct.

(2) Station Facility Inspection

(i) This inspection will be conducted periodically at every location where the operator uses facilities and services in connection with his operations. Its purpose is to assess the acceptability as it pertains to the operation under consideration of various navigation, communications, meteorological facilities and equipment, related operational control procedures, and ground services and evaluate the competency of the assist staff to operate them.

(ii) The inspection is to ascertain that these facilities meet established requirements, that qualified staff properly manages them and the required records are properly maintained.

(3) Ramp Inspection

(i) The ramp inspection is an evaluation actually being conducted so that the procedures employed as well as the competency of the personnel involved can be assessed. Ramp inspections may be conducted at originating, en-route or destination stops. These inspections should normally be made without prior notice to the operator and consist of selective inspections of aircraft and crews to determine the availability and/or validity of required documents.

(ii) Ramp inspectors will also include the Inspector's assessment on the operator's methods and procedures used for complying with the CAR 2016. The CAR 2016 and procedures for the approval, surveillance and resolution of safety issues, associated with CAT operations by an operator from another State (herein after referred to as a “foreign state”) should be in conformity with the Annexes to the Convention.

(4) Enroute Inspection

(i) The Inspector will observe the flight deck and cabin during revenue flight operations. It is to evaluate the performance and overall competency of the flight crew and other crew members, observe crew co-ordination, vigilance, adherence to appropriate CAAM regulations and OM instructions.

(ii) The primary purpose of enroute inspections is to assess the adequacy and suitability of operational control procedures and practices, related facilities, equipment and services involved, and the capability of flight and ground personnel to conduct operations as authorized.

(5) Base Inspection

(i) The base inspection will be performed at the operator's principal base of operations, sub-bases and separate maintenance

facilities.

(ii) The inspection is to assess the compliance of the operator on the regulations and rules applicable to the proposed operation and inspection related to the required manuals, training programmes, operational and maintenance facilities, aircraft, support equipment, record keeping, dangerous goods programme, security programme, flight crew and key management personnel, including the functioning of the administrative and operational organization.

(c) FREQUENCY OF INSPECTION

(1) The following are the minimum requirements with respect to the frequency to conducting the various inspections:

Type	**Frequency**
Station facility inspection	quarterly
Regular aerodrome inspections	annually
Apron inspection	quarterly
En-route inspection	quarterly
Base inspections	semi-annually

(2) The frequency may be modified depending upon the scope and diversification of the operator's flights and staffing limitations.

(d) INSPECTORS CREDENTIAL

(1) Admission to Pilot's compartment forward observer seat.

(i) Operators and persons employed shall allow the CAAM Inspectors or its authorised personnel any time to make inspections or tests including en-route inspection to determine the operator's compliance with CAR 2016 and other rules.

(ii) Whenever, in performing the duties of conducting an inspection, a CAAM Inspector or CAAM authorised personnel will present

their Inspector Credential, to the PIC of an aircraft. The Inspector must be given free and uninterrupted access to the pilot's compartment and cabin of the aircraft.

(iii) A forward observer's seat on the flight desk or forward passenger seat with headset or speaker must be provided for use while conducting enroute inspections.

(e) ACTION ARISING FROM CONTINUING SURVEILLANCE AND INSPECTION

(1) When in the course of the operator surveillance programme deficiencies are observed, the operator will be advised accordingly for remedial actions. Additional inspections will be conducted whenever particular problem areas repeatedly recur. Stern action will be taken including imposing restriction on the operations if the operator continues to ignore the said advice.

APPENDIX 12

SAFETY MANAGEMENT SYSTEM (SMS)

(a) This appendix specifies the framework for the implementation and maintenance of an SMS. The framework comprises four components and twelve elements as the minimum requirements for SMS implementation:

(1) Safety policy and objectives

(i) Management commitment and responsibility

(ii) Safety accountabilities

(iii) Appointment of key safety personnel

(iv) Coordination of emergency response planning

(v) SMS documentation

(2) Safety risk management

(i) Hazard identification

(ii) Safety risk assessment and mitigation

(3) Safety assurance

(i) Safety performance monitoring and measurement

(ii) The management of change

(iii) Continuous improvement of the SMS

(4) Safety promotion

(i) Training and education

(ii) Safety communication

(b) Safety policy and objectives

(1) Management commitment and responsibility

The operator shall define its safety policy in accordance with international and the CAAM's requirements. The safety policy shall:

(i) reflect organizational commitment regarding safety;

(ii) include a clear statement about the provision of the necessary resources for the implementation of the safety policy;

(iii) include safety reporting procedures;

(iv) clearly indicate which types of behaviours are unacceptable related to the operator's aviation activities and include the circumstances under which disciplinary action would not apply;

(v) be signed by the accountable executive of the organization;

(vi) be communicated, with visible endorsement, throughout the organization; and

(vii) be periodically reviewed to ensure it remains relevant and appropriate to the operator.

(2) Safety accountabilities

The operator shall:

(i) identify the accountable executive who, irrespective of other functions, has ultimate responsibility and accountability, on behalf of the organization, for the implementation and maintenance of the SMS;

(ii) clearly define lines of safety accountability throughout the organization, including a direct accountability for safety on the part of senior management;

(iii) identify the accountabilities of all members of management, irrespective of other functions, as well as of employees, with respect to the safety performance of the SMS;

(iv) document and communicate safety responsibilities, accountabilities and authorities throughout the organization; and

(v) define the levels of management with authority to make decisions regarding safety risk tolerability.

(3) Appointment of key safety personnel

The operator shall appoint a safety manager who is responsible for the implementation and maintenance of an effective SMS.

(4) Coordination of emergency response planning

The operator shall ensure that an emergency response plan is properly coordinated with the emergency response plans of those organizations it must interface with during the provision of its products and services.

(5) SMS documentation

(i) The operator shall develop an SMS implementation plan, formally endorsed by the organization, that defines the organization's approach to the management of safety in a manner that meets the organization's safety objectives.

(ii) The operator shall develop and maintain SMS documentation that describes its:

(A) safety policy and objectives;

(B) SMS requirements;

(C) SMS processes and procedures;

(D) accountabilities, responsibilities and authorities for SMS processes and procedures; and

(E) SMS outputs.

(iii) The operator shall develop and maintain an SMS manual as part of its SMS documentation.

(c) Safety risk management

(1) Hazard identification

(i) The operator shall develop and maintain a process that ensures that hazards associated with its aviation products or services are identified.

(ii) Hazard identification shall be based on a combination of reactive, proactive and predictive methods of safety data collection.

(2) Safety risk assessment and mitigation

The operator shall develop and maintain a process that ensures analysis, assessment and control of the safety risks associated with identified hazards.

(d) Safety assurance

(1) Safety performance monitoring and measurement

(i) The operator shall develop and maintain the means to verify the safety performance of the organization and to validate the effectiveness of safety risk controls.

(ii) The operator’s safety performance shall be verified in reference to the safety performance indicators and safety performance targets of the SMS.

(2) The management of change

The operator shall develop and maintain a process to identify changes which may affect the level of safety risk associated with its aviation products or services and to identify and manage the safety risks that may arise from those changes.

(3) Continuous improvement of the SMS

The operator shall monitor and assess the effectiveness of its SMS processes to enable continuous improvement of the overall performance of the SMS.

(e) Safety promotion

(1) Training and education

(i) The operator shall develop and maintain a safety training programme that ensures that personnel are trained and competent to perform their SMS duties.

(ii) The scope of the safety training programme shall be appropriate to each individual's involvement in the SMS.

(2) Safety communication

The operator shall develop and maintain a formal means for safety communication that:

(i) ensures personnel are aware of the SMS to a degree commensurate with their positions;

(ii) conveys safety-critical information;

(iii) explains why particular safety actions are taken; and

(iv) explains why safety procedures are introduced or changed.

APPENDIX 13

REQUIREMENT FOR THE ESTABLISHMENT OF FLIGHT DATA ANALYSIS PROGRAMME (FDAP)

(a) FDAP

(1) Flight Data Analysis (FDA), sometimes referred to as flight data monitoring or flight operational quality assurance (FOQA), provides a systematic tool for the proactive identification of hazards.
"flight data analysis" is defined as a process of analysing recorded flight data in order to improve the safety of flight operations.

(2) An FDAP may be described as a non-punitive programme for routine collection and analysis of flight data to develop objective and predictive information for advancing safety, e.g. through improvements in flight crew performance, training effectiveness, operational procedures, maintenance and engineering, and air traffic control (ATC) procedures.

(3) FDA involves:

(i) capturing and analysing flight data to determine if the flight deviated from a safe operating envelope;

(ii) identifying trends; and

(iii) promoting action to correct potential problems.

(4) Periodically, flight data are transferred from the aircraft and analysed by the ground analysis system at a centralized location.

(5) Deviations of more than certain predetermined values, called "exceedances", are flagged and evaluated.
The FDA team will propose and evaluate corrective actions, as well as produce exceedances aggregation over time to determine and monitor

trends. FDA also allows for early identification of aircraft system degradation for maintenance action.

(6) In summary, FDAPs offer a wide spectrum of applications for safety management, the benefit of improving operational efficiency and economy. The objective is to:

(i) determine operating norms;

(ii) identify potential and actual hazards in operating procedures, fleets, aerodromes, ATC procedures, etc.;

(iii) identify trends;

(iv) monitor the effectiveness of corrective actions taken;

(v) provide data to conduct cost-benefit analyses;

(vi) optimize training procedures; and

(vii) provide actual rather than presumed performance measurement for risk management purposes.

(7) It is important that FDAPs are non-punitive and contain adequate safeguards to protect the source(s) of the data.

(8) A FDAP integrated within a SMS

(i) FDA aims at continuous improvement of the overall safety performance of an operator and it should be integrated in the safety assurance component of the operator’s SMS.

(ii) As part of an operator's SMS safety assurance processes, an FDAP will have identified indicators or parameters chosen for measuring and monitoring the operator's safety performance, including “operational events”. These events may be low

consequence (deviation, non-compliance events) or high consequence safety performance indicators (accident and serious incident rates). Such data are routinely fed into or part of the Safety Data Collection and Processing System (SDCPS).

(iii) The operator's SMS assurance processes would also have procedures for corrective or follow-up action to be taken when targets are not achieved and/ or alert levels are breached that are set for each of the performance indicators/parameters.

(iv) Alert and target levels serve as markers to define what is the abnormal/unacceptable occurrence rate as well as the desired target (improvement) rate for the indicator. The alert level for a particular safety indicator is the demarcation line between the acceptable trending region and the unacceptable region and it becomes apparent that a qualitative/quantitative performance outcome can be derived at the end of any given monitoring period. This may be done by counting the number of alert breaches and/ or the number of targets achieved for an individual indicator and/or a package of safety indicators.

(v) Under such an assurance programme, the management would also be responsible for setting procedures to review new and existing aviation safety-related facilities and equipment, including operations and processes for hazards/risks before they are established or when changes to operations are introduced.

(vi) Where an FDAP is in place but not integrated in the SMS, the operator will need to develop the processes to assure effective meansof safety performance measurement and corrective action plans in order to maintain continuous improvement of the operations.

(b) FDAP Description

(1) FDAP Overview

The quality and capability of an operator's FDAP will be dependent on the selection, availability of flight parameters, and the Quick Access Recorder's (QAR's) availability. The selected flight parameters should be relevant and appropriate to reflect the safety, quality or risk level of the process thereby providing a performance track. It is important to note that the programme description herewith provides baseline components. Therefore, depending on availability of resources, technology, complexity and size of operation, the programme will need to be modified to suit the needs of the operator.

(2) FDA Equipment

(i) FDAPs generally involve systems that capture flight data, transform the data into an appropriate format for analysis, for generating reports and for visualization to assist in assessing the data. The level of sophistication of the equipment can vary widely. Typically, however, the following equipment capabilities are required for effective FDAPs:

(A) an on-board device to capture and record data on a wide range of flight parameters. These flight parameters should include, but not be limited to, the flight parameters recorded by the flight data recorder (FDR) or Aircraft Data Recording Systems (ADRS). The flight parameter performance (range, sampling rate, accuracy, recording resolution) should be as good as or better than the performance specified for FDR parameters;

(B) a means to transfer the data recorded on board the aircraft to a ground-based processing station. In the past, this largely involved the physical movement of the memory unit from the QAR. To reduce the physical effort required, more modern transfer methods utilize wireless technologies;

(C) a ground-based computer system (using specialized software) to analyse the data (from single flights and/ or in an aggregated format), identify deviations from expected performance, generate reports to assist in interpreting the read-outs, etc.; and

(D) optional software for a flight animation capability to integrate all data, presenting it as a simulation of in-flight conditions, thereby facilitating visualization of actual events for analysis and crew debriefing.

(ii) Airborne equipment

(A) Modern glass-cockpit and fly-by-wire aircraft are equipped with the necessary digital data-buses from which information can be captured by a recording device for subsequent analysis. Older, non-digital, aircraft are capable of capturing a limited set of data, but may be retrofitted to record additional parameters. Nevertheless, a limited parameter set will allow for a useful, basic FDAP.

(B) The flight parameters recorded by the FDR or ADRS may determine a minimum set for an FDAP. In some cases, the flight parameters and FDR/ADRS recording duration required by law to support accident and incident investigations may be insufficient to support a comprehensive FDAP. Thus, many operators are opting for additional recording capacity, capable of being easily downloaded for analysis.

(C) QARs are optional non-crash protected recorders installed on the aircraft and record flight data in a low cost removable medium. They are more accessible and record the same parameters for a longer duration than the FDR.

New technology QARs and new flight data acquisition systems offer the possibility to capture and record thousands of flight parameters. They also allow for increasing the sampling rate or the recording resolution of specific flight parameters to values appropriate for advanced flight data analysis.

In other systems, the recorded data is analysed on board while the aircraft is airborne. The relevant encrypted data are then transmitted to a ground station using satellite communications. Fleet composition, route structure and cost considerations will determine the most cost-effective method of removing the data from the aircraft.

(iii) Ground-based computer system for flight data analysis

(A) Flight data are downloaded from the aircraft recording device into a ground-based computer system including analysis software, where the data are held securely to protect this sensitive information. Such computer systems are commercially available; however, the computer platform will require appropriate front-end interfaces to cope with the variety of recording inputs available today.

(B) FDAPs generate large amounts of data requiring specialized analysis software. This analysis software facilitates the routine analysis of flight data in order to identify situations that may require corrective action.

(C) The analysis software checks the downloaded flight data for abnormalities. The exceedance detection typically includes a large number of trigger logic expressions derived from a variety of sources such as flight performance curves, SOPs, engine manufacturers' performance data, airfield layout and approach criteria.

Trigger logic expressions may be simple exceedances such as redline values.

(D) Exceedances and routine measurements can be displayed on a ground computer screen in a variety of formats. Recorded flight data are usually shown in the form of color-coded traces and associated engineering listings, cockpit simulations or animations of the external view of the aircraft.

(c) Processing FDA Data

(1) Exceedance detection

(i) Exceedance detection, such as deviations from flight manual limits or SOPs, is one way of extracting information from flight data. A set of core events/parameters establishes the main areas of interest to an operator.

(ii) data provides factual information which complement crew and engineering reports.

(iii) Operators may also modify the standard set of core events to account for unique situations they regularly experience or for the SOPs they use.

(2) Routine measurements

(i) Data can be retained from all flights, not just those producing significant events. A selection of parameters is retained that is sufficient to characterize each flight and allow a comparative analysis of a wide range of operational variability. Emerging trends and tendencies are monitored before the trigger levels associated with exceedances are reached.

(3) Incident investigation

(i) FDAPs provide valuable information for incident investigations and for follow-up of other technical reports. Quantifiable recorded data have been useful in adding to the impressions and information recalled by the flight crew. FDAP data also provide an accurate indication of system status and performance, which may help in determining cause and effect relationships.

(4) Continuing airworthiness

(i) Both routine measurements and exceedances can be utilized to assist the continuing airworthiness function such as engine-monitoring programmes look at measures of engine performance to determine operating efficiency, predict impending failures and assist in maintenance scheduling.

(5) Integrated safety analysis

(i) All the data gathered in an FDAP should be integrated in a central safety database. By linking an FDAP database to other safety databases (such as incident reporting systems and technical fault reporting systems), a more complete understanding of events becomes possible through cross-referencing the various sources of information. Care should be taken, however, to safeguard the confidentiality of FDA data when linking the data to identified data. The flight crew report provides the context, the FDA exceedance provides the quantitative description and the engineering report provides the result.

(d) ANALYSIS AND FOLLOW-UP

(1) Overviews and summaries of FDA data are compiled on a regular basis, usually weekly or bi-weekly, whilst individual significant events would be expected to be more timely followed up. All data should be reviewed to identify specific exceedances and emerging undesirable trends and to disseminate the information to flight crews.

(2) If deficiencies in the flight technique are recognized, the information is de-identified in order to protect the identity of the flight crew. The information on specific exceedances is passed to a flight crew contact person. This person provides the necessary contact with the flight crew (see para (j) on The FDAP team) in order to clarify the circumstances, obtain feedback and give advice and recommendations for appropriate action, such as flight crew re-training (carried out in a positive and non-punitive way), revisions to operating and flight manuals or changes to ATC and aerodrome operating procedures.

(3) All events are archived in a database. The database is used to sort, validate and display the data in easy to understand management reports. Over time, this archived data can provide a picture of emerging trends and hazards which would otherwise go unnoticed.

(4) Lessons learned from an FDAP may warrant inclusion in the company's safety promotion activities. Care is required, however, to ensure that any information acquired through FDA is de-identified before using it in any training or promotional initiative unless permission is given by all the crew members involved. Care should also be taken that, in order to avoid an exceedance, flight crews do not attempt to "fly the FDA profile" rather than follow SOPs. Such a behaviour would have a negative impact on safety.

(5) A proper value should be programmed for trigger and exceedance and designed to include an acceptable buffer that will disregard minor deviation, spurious events, as well as introduce an adequate operational margin to fly the aeroplane through SOPs, instead of leading the flight crew to focus on FDA parameters in order to avoid deviations.

(6) As in any closed-loop process, follow-up monitoring is required to assess the effectiveness of any corrective actions taken.

(7) All successes and failures should be recorded, comparing planned programme objectives with expected results. This provides a basis for review of an FDAP and the foundation for future programme development.

(e) Prerequisites for an Effective FDAP

(1) Protection of FDA Data

(i) Overall approach

(A) The operator's management, flight crews and the CAAM have legitimate concerns regarding the protection of FDA data, which include:

(AA) use of data for disciplinary purposes;

(BB) use of data for enforcement actions against individuals or against the company, except in cases of criminal intent or willful misconduct;

(CC) disclosure to the media and the general public under the provisions of State laws regarding access to information; and

(DD) disclosure during civil litigation.

(B) However, the integrity of an FDAP rests upon protection of the FDA data. Any disclosure for purposes other than safety management can compromise the required cooperation of the affected flight crew in clarifying and documenting an event. Thus, preventing the misuse of FDA data is a common interest of the CAAM, the operator and the flight crews.

(C) Data protection can be optimized by:

(AA) adhering to the agreement between management and the flight crews, where available;

(BB) strictly limiting data access to selected individuals;

(CC) maintaining tight control to ensure that data identifying a specific flight are kept secure;

(DD) ensuring that operational problems are promptly addressed by management; and

(EE) to the extent possible, non-reversible de- identification of the flight data files after a time appropriate for their analysis.

(ii) Policy on retention of data

(A) Because of the large volumes of data involved, it is important that a strategy for data access, both online and offline, is carefully developed to meet the needs of FDAP users.

(B) The most recent flight data and exceedances are normally kept readily available to allow fast access during the initial analysis and interpretation stages. When this process is completed, it is less likely that additional data from the flights will be required so the flight data can be archived. Exceedances are usually kept online for a much longer period to allow trending and comparison with previous events.

(iii) De-identification policy and procedures

(A) Policy on FDA data de-identification is an absolutely critical area that should be carefully written down and agreed to before it is needed in extreme circumstances. Management assurance on the nondisclosure of individuals must be very clear and binding. The one exception is when the

operator/flight crew believes that there is a continuing unacceptable safety risk if specific action regarding the flight crew is not taken, an identification and follow-up action procedure, previously agreed to before the particular event, can be brought into play.

(B) There should be an initial stage during which the data can be identified to allow confidential follow-up by the crew representative or trusted individual agreed to by the operator and the flight crews. Strict rules of access should be enforced during this period. In the case of a mandatory occurrence or accident, any data retained by the programme may not be de-identified or removed from the system prior to the investigation or for confirmation that it is not required.

This will allow the safety investigators access to all relevant information.

(iv) Set authorized access levels

(A) The FDA ground-based computer system must have the ability to restrict access to sensitive data and also control the ability to edit data. For example, the FDA flight crew contact person could have full access, while operations management would only have access to de-identified data and the ability to add comments and edit a few appropriate fields.

(f) Involvement of Flight Crews

(1) As with successful incident reporting systems, the trust established between management and its flight crews is the foundation for a successful FDAP. For most operators this will be accomplished through an association, while for others the CAAM may be the custodian of flight crew involvement under the limitation of the due “duty of care”. Here it is

incumbent upon management to provide assurance of the FDAP intent, conditions of use and protection given to its employees. This trust can be facilitated by:

(i) early participation of the flight crew representatives and or the CAAM representatives in the design, implementation and operation of an FDAP; and

(ii) a formal agreement between management and the flight crews, and or the CAAM identifying the procedures for the use and protection of data.

(g) Safety Culture

(1) Consistent and competent programme management characterizes successful FDAPs. Indications of an effective safety culture of an operator include:

(i) top management's demonstrated commitment to promoting a proactive safety culture;

(ii) the cooperation and accountability of all organizational levels and relevant personnel representatives, meaning that anyone believing to have identified a potential risk should feel able to report and expect follow-up action to be considered. From the line pilot to the fleet manager all have responsibility to act;

(iii) a written non-punitive company policy that covers FDA and makes clear that the main objective of an FDAP should be to improve safety, and not to allocate blame or liability;

(iv) an identified safety manager whose role and functions are defined following the recommendations of the Safety Management Manual;

(v) FDAP management by a dedicated staff under the authority of the safety manager, with a high degree of specialization and logistical support;

(vi) involvement of persons with appropriate expertise when identifying and assessing risks;

(vi) a focus on monitoring fleet trends aggregated from numerous operations, rather than on specific events. The identification of systemic issues adds more value for safety management than isolated events;

(vii) a well-structured de-identification system to protect the confidentiality of the data; and

(viii) an efficient communication system, to permit timely safety action, for disseminating hazard information and subsequent risk assessments internally and to other organizations.

(h) Establishing and implementing an FDAP

(1) Implementation Plan

(i) Typically, the following steps are required to implement an FDAP:

(A) management approval of the programme;

(B) implementation of a formal agreement between management and flight crews;

(C) identification of an FDAP implementation committee, including the future FDA team members; this committee should be involved in all of the following steps;

(D) development of a business plan, including processes, software and hardware and assignment of adequate resources;

(E) establishment and verification of operational and security procedures;

(F) development of an FDAP procedures manual;

(G) assessment of possible interfaces between an FDAP and other safety data sources (i.e. SDCPS) and of integration of an FDAP into the SMS;

(H) selection of equipment (airborne, ground-based computer system, interface with other data sources and the SMS);

(I) selection and training of the FDA team members, according to their respective roles;

(J) testing of data transfer; testing of the ground-based computer system (including data acquisition, definition of trigger logic expressions, data analysis and visualization, data de-identification, final storage of data);

(K) testing of data security, including security procedures;

(L) identification of areas of interest that should be first looked at in the data;

(M) checking of the proper decoding and of the quality of flight parameters used by an FDAP; and

(N) start of data analysis and validation, focused on key areas in operation.

(i) Aims and Objectives

(1) A phased approach is recommended so that the foundations are in place for possible subsequent expansion into other areas. Using a building

block approach will allow expansion, diversification and evolution through experience.

(2) A staged set of objectives starting from the first week's replay and moving through early production reports into regular routine analysis will contribute to a sense of achievement as milestones are met.

Examples:

Short-term goals:

(i) establish data download procedures, test analysis software and identify aircraft defects;

(ii) validate and investigate exceedance data; and

(iii) establish a user-acceptable routine report format to highlight individual exceedances and facilitate the acquisition of relevant statistics.

Medium-term goals:

(i) produce annual report — include key performance indicators;

(ii) add other modules to analysis (e.g. continuing airworthiness); and

(iii) plan for the next fleet to be added to the programme.

Long-term goals:

(i) network FDA information across all company safety information systems and integrate an FDAP into the SMS;

(ii) ensure FDA provision for any proposed advanced training programme; and

(iii) use utilization and condition monitoring to reduce spares holdings.

(3) Initially focusing on a few known areas of interest will help prove the system's effectiveness.

(j) The FDAP Team

(1) Experience has shown that the "team" required to run an FDAP can vary in size from one person for a small fleet, to a dedicated section for large fleets. The descriptions below identify various functions to be fulfilled, not all of which need a dedicated position.

(i) **Team leader**. It is essential that the team leader earns the trust and full support of both management and flight crews. He/she acts independently of others in line management to make recommendations that will be seen by all to have a high level of integrity and impartiality. The individual requires good analytical, presentation and management skills. He/she should be the safety manager or placed under the authority of the safety manager.

(ii) **Flight operations interpreter**. This person is usually an experienced pilot in the type and operation who knows the operator's route network and aircraft. This team member's in-depth knowledge of SOPs, aircraft handling characteristics, airports and routes will be used to place the FDA data in a credible context.

(iii) **Technical interpreter**. This person interprets FDA data with respect to the technical aspects of the aircraft operation and is familiar with the power plant, structures and systems departments' requirements for information and any other engineering monitoring programmes in use by the operator.

(iv) **Flight crew contact person**. This is a person usually assigned by the operator for this responsibility (safety manager, agreed flight crew representative, honest broker), or a mutually acceptable substitute, for confidential discussion with flight crews involved in events highlighted by FDA. The position requires good

people skills and a positive attitude towards safety education. The flight crew contact person should be the only person permitted to connect the identifying data with the event. The flight crew contact person requires the trust of both flight crew members and managers for his/her integrity and good judgement.

(v) **Engineering technical support**. This person is usually an avionics specialist, involved in the supervision of FDR serviceability. Indeed, an FDAP can be used to monitor the quality of flight parameters sent both to the FDR and to the FDA recorder, and thus ensure the continued serviceability of the FDR.

This team member should be knowledgeable about FDA and the associated systems needed to run the programme.

(vi) **Air safety coordinator**. This person cross-references FDA information with other safety data sources (such as the company's mandatory or confidential incident reporting programme) and with the operator's SMS, creating a credible integrated context for all information. This function can reduce duplication of follow-up investigations.

(vii) **Replay operative and administrator**. This person is responsible for the day-to-day running of the system, producing reports and analyses. Methodical, with some knowledge of the general operating environment, this person keeps the programme moving. Operators may utilize the services of a specialist contractor to operate an FDAP.

(2) All FDAP team members need appropriate training or experience for their respective area of data analysis and should be subject to a confidentiality agreement.

(3) Each team member should be allocated a realistic amount of time to regularly spend on FDA tasks. With insufficient human resources, the entire programme will underperform or even fail.

(k) Continuous Improvement

(1) New safety issues identified and published by other organizations, such as safety investigation reports, safety bulletins by the aircraft manufacturer or safety issues identified by aviation authorities, should be assessed for inclusion in a corresponding monitoring activity of an FDAP.

(2) The FDA processes and procedures will need to be amended when an FDAP matures and each time there are changes in the operations, the internal organization of the aircraft operator or the interface with other data sources and processes.

(3) In order to assess the general effectiveness of an FDAP, a periodic review or an audit may be beneficial.
Such a review could determine:

(i) if anticipated safety benefits are being realized;

(ii) if the FDA procedures reflect the actual operation of an FDAP, and if they have been followed;

(iii) whether the information provided to FDAP users is accurate, timely, and useable; and

(iv) if the tools employed to collect and present data are still adequate and if other technology would be more effective.

APPENDIX 14

CONTENT OF OPERATIONS MANUAL (OM)

The OM referred to in Part ORO.MLR.101 shall contain at the least the following:

(a) General

(1) Instructions outlining the responsibilities of operations personnel pertaining to the conduct of flight operations.

(2) Information and policy relating to fatigue management including:

(i) rules pertaining to flight time, flight duty period, duty period limitations and rest requirements for flight and cabin crew members in accordance with Subpart FTL; and

(ii) policy and documentation pertaining to the operator's FRMS.

(3) A list of the navigational equipment to be carried including any requirements relating to operations where performance-based navigation is prescribed.

(4) Where relevant to the operations, the long-range navigation procedures, engine failure procedure for EDTO and the nomination and utilization of diversion aerodromes.

(5) The circumstances in which a radio listening watch is to be maintained.

(6) The method for determining minimum flight altitudes.

(7) The methods for determining aerodrome operating minima.

(8) Safety precautions during refueling with passengers on board.

(9) Ground handling arrangements and procedures.

(10) Procedures, as prescribed in Part CAT, for pilots-in-command observing an accident.

(11) The flight crew for each type of operation including the designation of the succession of command.

(12) Specific instructions for the computation of the quantities of fuel and oil to be carried, taking into account all circumstances of the operation including the possibility of loss of pressurization and the failure of one or more engines while enroute. Operational procedure for maintaining fuel and oil records.

(13) The conditions under which oxygen shall be used and the amount of oxygen determined in accordance with Part CAT.

(14) Instructions for mass and balance control.

(15) Instructions for the conduct and control of ground de-icing/anti-icing operations.

(16) The specifications for the operational flight plan.

(17) SOPs for each phase of flight.

(18) Instructions on the use of normal checklists and the timing of their use.

(19) Departure contingency procedures.

(20) Instructions on the maintenance of altitude awareness and the use of automated or flight crew altitude call-out.

(21) Instructions on the use of autopilots and auto-throttles in IMC.

Note – Instructions on the use of autopilots and auto-throttles, together with (26) and (30), are essential for avoidance of approach and landing accidents and controlled flight into terrain accidents.

(22) Instructions on the clarification and acceptance of ATC clearances, particularly where terrain clearance is involved.

(23) Departure and approach briefings.

(24) Procedures for familiarization with areas, routes and aerodromes.

(25) Stabilized approach procedure.

(26) Limitation on high rates of descent near the surface.

(27) Conditions required to commence or to continue an instrument approach.

(28) Instructions for the conduct of precision and non-precision instrument approach procedures.

(29) Allocation of flight crew duties and procedures for the management of crew workload during night and IMC instrument approach operations.

(30) Instructions and training requirements for the avoidance of controlled flight into terrain and policy for the use of the ground proximity warning system (GPWS).

(31) Policy, instructions, procedures and training requirements for the avoidance of collisions and the use of the airborne collision avoidance system (ACAS).

(32) Information and instructions relating to the interception of civil aircraft including:

(i) procedures, as prescribed in Part CAT, for pilots-in-command of intercepted aircraft; and

(ii) visual signals for use by intercepting and intercepted aircraft, as contained in Part CAT.

(33) For aeroplanes intended to be operated above 15 000 m (49 000 ft):

(i) information which will enable the pilot to determine the best course of action to take in the event of exposure to solar cosmic radiation; and

(ii) procedures in the event that a decision to descend is taken, covering:

(A) the necessity of giving the appropriate ATS unit prior warning of the situation and of obtaining a provisional descent clearance; and

(B) the action to be taken in the event that communication with the ATS unit cannot be established or is interrupted.

(34) Details of the SMS provided in accordance with Appendix 12.

(35) Information and instructions on the carriage of dangerous goods, including action to be taken in the event of an emergency.

Note – Guidance material on the development of policies and procedures for dealing with dangerous goods incidents on board aircraft is contained in Emergency Response Guidance for Aircraft Incidents involving Dangerous Goods (Doc 9481).

(36) Security instructions and guidance.

(37) The search procedure checklist provided in accordance with Part CAT.

(38) Instructions and training requirements for the use of head-up display (HUD) and enhanced vision systems (EVS) equipment as applicable.

(39) Instructions and training requirements for the use of the EFB, as applicable.

(b) Aircraft operating information

(1) Certification limitations and operating limitations.

(2) The normal, abnormal and emergency procedures to be used by the flight crew and the checklists relating thereto.

(3) Operating instructions and information on climb performance with all engines operating.

(4) Flight planning data for pre-flight and in-flight planning with different thrust/power and speed settings.

(5) The maximum crosswind and tailwind components for each aeroplane type operated and the reductions to be applied to these values having regard to gusts, low visibility, runway surface conditions, crew experience, use of autopilot, abnormal or emergency circumstances, or any other relevant operational factors.

(6) Instructions and data for mass and balance calculations.

(7) Instructions for aircraft loading and securing of load.

(8) Aircraft systems, associated controls and instructions for their use.

(9) The minimum equipment list and configuration deviation list for the aeroplane types operated and specific operations authorized, including any requirements relating to operations where performance-based navigation is prescribed.

(10) Checklist of emergency and safety equipment and instructions for its use.

(11) Emergency evacuation procedures, including type-specific procedures, crew coordination, assignment of crew's emergency positions and the emergency duties assigned to each crew member.

(12) The normal, abnormal and emergency procedures to be used by the cabin crew, the checklists relating thereto and aircraft systems information as required, including a statement related to the necessary procedures for the coordination between flight and cabin crew.

(13) Survival and emergency equipment for different routes and the necessary procedures to verify its normal functioning before take-off, including procedures to determine the required amount of oxygen and the quantity available.

(14) The ground-air visual signal code for use by survivors in accordance with Part CAT.

(c) Routes and aerodromes

(1) A route guide to ensure that the flight crew will have, for each flight, information relating to communication facilities, navigation aids, aerodromes, instrument approaches, instrument arrivals and instrument departures as applicable for the operation, and such other information as the operator may deem necessary for the proper conduct of flight operations.

(2) The minimum flight altitudes for each route to be flown.

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

(4) The increase of aerodrome operating minima in case of degradation of approach or aerodrome facilities.

(5) Instructions for determining aerodrome operating minima for instrument approaches using HUD and EVS as applicable.

(6) The necessary information for compliance with all flight profiles required by regulations, including but not limited to, the determination of:

(i) take-off runway length requirements for dry, wet and contaminated conditions, including those dictated by system failures which affect the take-off distance;

(ii) take-off climb limitations;

(iii) en-route climb limitations;

(iv) approach climb limitations and landing climb limitations;

(v) landing runway length requirements for dry, wet and contaminated conditions, including systems failures which affect the landing distance; and

(vi) supplementary information, such as tire speed limitations.

(d) Training

(1) Details of the flight crew training programme.

(2) Details of the cabin crew duties training programme.

(3) Details of the flight operations officer/flight dispatcher training programme when employed in conjunction with a method of flight supervision in accordance with ORO.GEN.110(d) and Subpart AOC.

Note – Details of the flight operations officer/flight dispatcher training programme are contained in Attachment J.

ATTACHMENT A1

OPERATOR'S AOC AUDIT REPORT FORMAT

CAAM-AOC/RP

Flight Operations Sector,
No. 27 Persiaran Perdana,
Level 2, Block Podium B, Presint 4,
62618, PUTRAJAYA Tel. 603 8871 4000, Fax. 603 8871 4334
Email address: [Name of POI]@caam.gov.my

SECTION 1 – AUDIT/INSPECTION DETAILS		
OPERATOR	AOC NUMBER	DATE
[Operator's Name]	[Operator's AOC Number]	[Date of Audit]

CODE	SUMMARY OF CHECKS
BSE	An AOC Renewal Audit was conducted at the base facility at [location]. The audit was conducted based on MCAR and FOSI Handbook checklist.

Findings: [Number of Findings]	**Observations:** [Number of Observations]

DETAILS OF INSPECTION	LOCATION
Operations Manual Operational Control Operations and Flight Records Flight and Duty Time Records Training Program Training and Qualification Records Ground Operations Safety Management System (SMS) **Present** CAAM [Name of Flight Operations Inspectors] [Operator] [Name of Operator's Management Personnel]	[location]

STATEMENT OF RECORD
This report represents an indication of what was observed on this occasion as a result of the

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audit/inspection, the scope of which is detailed above. This report alone should not be regarded as a determination of total compliance.			
	[Operator's NPH Name]	[Operator's NPH Position]	[Date of Signing Audit Report]
Signature	Name	Position	Date
I have carried out the audit/inspection in accordance with the current instructions.			
	[Lead Auditor's Name]	[Lead Auditor's Position]	[Date of Signing Audit Report]
Signature	Name	Position	Date

FINDINGS	DEFINITIONS
Level 1 **(L1)**	Where the CAAM determine that the level of compliance and/or safety performance of an organisation or individual has fallen to the extent that there is a potential or significant risk to flight safety, a Level 1 finding will be made. The CAAM will take action in accordance with the relevant regulation, which may result in provisional or substantive suspension or variation of the approval, or a proposal to revoke the approval. The CAAM may also consider the need for possible prosecution. Corrective action will be required before the suspension is lifted and before the activity giving rise to the finding is recommenced.
Level 2 **(L2)**	This action may be taken where the CAAM identify a non-compliance with a regulation but determine that the nature of that non-compliance is such that there is no immediate risk to safety. The CAAM will require the organisation or individual to develop an action plan acceptable to the CAAM that will restore compliance within an agreed timescale.
Observation **(OBS)**	The CAAM may provide advice and guidance to industry on how non-compliance might be avoided. The CAAM expect industry to take this advice seriously and act on it appropriately. Observations will usually be raised as the result of an audit or inspection when best practice is not being followed, or when it is anticipated that the auditee, although currently in compliance, is unlikely to remain so unless appropriate action is taken.
Maximum timescale for Corrective Action is recommended as Immediate to 90 days. Failure to take appropriate action could adversely affect the operator's ability to continue to satisfy the CAAM in accordance with MCAR.	

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Email address: [Name of POI]@caam.gov.my

SECTION 2 – FINDINGS/OBSERVATIONS (PREVIOUS)				
CODE	FINDINGS/OBSERVATIONS	REQUIREMENT	LEVEL	DAYS
BSE	OPERATIONS MANUAL			
	[Previous Findings/Observations]	[MCAR, FOD]	[Refer to Findings Definition Table]	[Number of days for closure of findings]
BSE	OPERATIONAL CONTROL			
	[Previous Findings/Observations]			
BSE	OPERATIONS AND FLIGHT RECORDS			
	[Previous Findings/Observations]			
BSE	FLIGHT AND DUTY TIME RECORDS			
	[Previous Findings/Observations]			
BSE	TRAINING PROGRAM			
	[Previous Findings/Observations]			
BSE	TRAINING AND QUALIFICATION RECORDS			
	[Previous Findings/Observations]			
BSE	GROUND OPERATIONS			
	[Previous Findings/Observations]			
SMS	SAFETY MANAGEMENT SYSTEM			
	[Previous Findings/Observations]			

SECTION 3 – FINDINGS/OBSERVATIONS (CURRENT)				
CODE	FINDINGS/OBSERVATIONS	REQUIREMENT	LEVEL	DAYS
BSE	OPERATIONS MANUAL			
	[Current Findings/Observations]	[MCAR, FOD]	[Refer to Findings Definition	[Number of days for closure

Flight Operations Sector,
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62618, PUTRAJAYA Tel. 603 8871 4000, Fax. 603 8871 4334
Email address: [Name of POI]@caam.gov.my

			Table]	of findings]
BSE	OPERATIONAL CONTROL			
	[Current Findings/Observations]			
BSE	OPERATIONS AND FLIGHT RECORDS			
	[Current Findings/Observations]			
BSE	FLIGHT AND DUTY TIME RECORDS			
	[Current Findings/Observations]			
BSE	TRAINING PROGRAM			
	[Current Findings/Observations]			
BSE	TRAINING AND QUALIFICATION RECORDS			
	[Current Findings/Observations]			
BSE	GROUND OPERATIONS			
	[Current Findings/Observations]			
SMS	SAFETY MANAGEMENT SYSTEM			
	[Current Findings/Observations]			

Lead Auditor's Remarks and Recommendations	
Signature:	**Name:** [Lead Auditor's Name] **Date:** [Date of Lead Auditor's Remark]

SECTION 4A – OPERATOR'S AOC AUDIT RESPONSE (ATTACHMENT A)
SECTION 4B – REMARKS BY CAAM (TO BE COMPLETED BY PRINCIPAL OPERATIONS INSPECTOR AFTER REVIEWING OPERATOR'S FEEDBACK)

Flight Operations Sector,
No. 27 Persiaran Perdana,
Level 2, Block Podium B, Presint 4,
62618, PUTRAJAYA Tel. 603 8871 4000, Fax. 603 8871 4334
Email address: [Name of POI]@caam.gov.my

SECTION 5 – REMARKS BY CAAM	
Head of Operation's Remarks	
	[Date of Head of Operation's Remarks]
Signature	Date
Director of Flight Operation's Remarks	
	[Date of Director of Flight Operation's Remarks]
Signature	Date

ATTACHMENT A2

OPERATOR'S AOC AUDIT RESPONSE FORMAT

60OR-16-AOC/OAAR

OPERATOR	AOC NUMBER	DATE

CODE	FINDING/OBSERVATION	REMARKS
	Finding/Observation	
	OPERATOR'S FEEDBACK	
	Immediate Corrective Action	
	Root Cause Analysis	
	Root Cause Correction	
	Follow Up	
	Closure	
Name: Designation: Date:		

OPERATOR RESPONSES TO FINDINGS

(a) With regards to the responses to the CAAM findings, the operator should respond to non-compliances using the following five point closure plan:

(1) IMMEDIATE CORRECTIVE ACTION

Action taken by the responsible manager has in the short term at least contained the non-compliance and stopped it from continuing.

(2) ROOT CAUSE ANALYSIS

Sufficient root cause analysis by the responsible person to identify the origin of the finding.

(3) ROOT CAUSE CORRECTION

Sufficient root cause correction by the responsible person that should significantly reduce or eliminate the chance of recurrence.

(4) FOLLOW UP

Timely follow up by line management or the quality assurance programme to verify the effectiveness of the corrective action taken.

(5) CLOSURE

A statement from the Head of Quality Assurance/Quality Manager or equivalent stating his/her reasons for acceptance of the corrective actions taken.

ATTACHMENT B

CAAM Form – AOC (AM)

CIVIL AVIATION AUTHORITY OF MALAYSIA

APPLICATION FOR NOMINATION OF AN ACCOUNTABLE MANAGER FOR THE PURPOSE OF AIR OPERATOR CERTIFICATION AND SUPERVISION

Note: The operator must have nominated an Accountable Manager, approved by the CAAM, who has corporate authority for ensuring that all operations activities can be financed and carried out to the standard required by the CAAM.

1	**Name of Organisation:**	
2	**Address:**	
3	**Name of Executive Chairman/ Accountable Manager:**	
4	**Telephone No.:**	
5	**Facsimile No.:**	
6	**Email:**	

Names of Senior Member(s) delegated by Executive Chairman/Accountable Manager if any:

	Name of Senior Member	**Designation**
1		
2		
3		

Signed: Date:

(Executive Chairman/Accountable Manager) Company Stamp:

FOR CAAM USE ONLY

Approved for the position of.....

..

Signed: Date:

CAAM Stamp:

Note: The Director of Flight Operations Sector, Civil Aviation Authority of Malaysia must be given at least 10 days prior notice of a proposed change of an Accountable Manager.

CIVIL AVIATION AUTHORITY OF MALAYSIA

APPLICATION FOR NOMINATION OF POST HOLDERS FOR THE PURPOSE OF AIR OPERATOR CERTIFICATION AND SUPERVISION

Note: The operator must have Nominated Post Holders, approved by the CAAM, who are responsible to the Accountable Manager for Flight Operations, Crew Training and Flight Safety.

Nomination for the following posts is required:

(a) Director of Flight Operations/Flight Operations Manager or equivalent.

(b) Chief Pilot Operations or equivalent.

(c) Cabin Crew Manager or equivalent.

(d) Operation Control Centre Manager or equivalent.

(e) Crew Training Manager or equivalent.

(f) Ground Handling Manager or equivalent.

(g) Safety Manager or equivalent.

(h) Others (as required by the CAAM)

BIOGRAPHICAL DETAILS (This form must be completed in duplicate)

1	**Organisation:**	
2	**Address:**	
3	**Position nominated:**	
4	**Full name of person nominated:**	
5	**Date of birth:**	

Please attach with this application giving details in date sequence the following:

(1) General education and technical qualifications.

(2) Full details of employment with positions held during the past ten years.

Signed: Date:

(Executive Chairman/Accountable Manager) Company Stamp:

FOR CAAM USE ONLY

Approved for the position of.....

..

Signed: Date:

CAAM Stamp:

Note: The Director of Flight Operations Sector, Civil Aviation Authority of Malaysia must be given at least 14 days prior notice of a proposed change of a Nominated Post Holder.

ATTACHMENT C

CAAM Form – AOC (App/Ren)

	CIVIL AVIATION AUTHORITY OF MALAYSIA (CAAM) **MALAYSIA**

AOC APPLICATION [(√) as applicable)]

Please check appropriate items ☐ **Initial** ☐ **Renewal**	☐ **New: Route/equipment/Ac Type** ☐ **New Operating Base/Station**
1. Name and mailing address of company	**2. Address of principal base where the operations will be conducted (do not use post office box)**
3. Proposed startup date	

4. Management personnel with resume and organization structure

Full Name	**Title**	**Telephone**

5. Proposed type of operation [(√) as many as possible)]

☐ **Schedule** ☐ **Non-Schedule**	☐ **Passenger** ☐ **Charter**	☐ **Cargo** ☐ **Aerial Work**

6. Proposed type of Maintenance Accomplishment

☐ **Own**	**Sub-Contract** Name of Maintenance Organization

7. Aircraft Data		**8. Geographical area of intended operations and airports**
Numbers and types of aircraft (by make, model and series)	Number of passenger seats or cargo payload capacity	

9. Additional information that provides a better understanding of the proposed operation or business including training of personnel and leasing contract (attach additional sheets, if necessary)		
Signature	**Name and Title**	**Date**
To be Completed by CAAM Office		
Remarks:		
Signature	**Name and Title**	**Date**

ATTACHMENT D

LAYOUT OF AN AOC

(2)

CIVIL AVIATION AUTHORITY OF MALAYSIA

(1)

AIR OPERATOR CERTIFICATE

<table>
<tr><td>AOC NO. (3)</td><td rowspan="3">OPERATOR NAME
(5)

Dba trading name:
(6)

OPERATOR ADDRESS
(7)

Telephone: (8)
Fax:
Email:</td><td rowspan="3">OPERATIONAL POINTS OF CONTACT (9)
Contact details, at which operational management can be contacted without undue delay, are listed in:
(10)

POINT OF CONTACT:

Telephone:</td></tr>
<tr><td>Expiry date:
(4)</td></tr>
<tr><td></td></tr>
<tr><td colspan="3">This certificate certifies that
(11)
is authorised to perform commercial air transport under regulation 110 of the Civil Aviation Regulations 2016 as defined in the attached operations specification, in accordance with the operations manual and subject to the terms and conditions attached hereto.</td></tr>
<tr><td>Date of issue:
(12)</td><td colspan="2">Signature:
(13)
Name:
Title:</td></tr>
</table>

Notes –

(1) Name of the State of the Operator.

(2) Logo of the State of the Operator.

(3) Unique AOC number, as issued by the State of the Operator.

(4) Date after which the AOC ceases to be valid (dd-mm-yyyy).

(5) Replace by the operator's registered name

(6) Operator's trading name, if different, Insert "dba" before the trading name (for "doing business as"). Any changes in Operator's trading name shall require approval from the Companies Commission of Malaysia and changes in "dba" shall require approval from the Intellectual Property Corporation of Malaysia (MyIPO) to be provided to the CAAM for the changes to be made.

(7) Operator's principal place of business address.

(8) The contact details include the telephone and fax numbers, including the country code, and the email address (if available) at which operational management can be contacted without undue delay for issues related to flight operations, airworthiness, flight and cabin crew competency, dangerous goods and other matters, as appropriate.

(9) The contact details include the telephone and fax numbers, including the country code, and the email address (if available) at which operational management can be contacted without undue delay for issues related to flight operations, airworthiness, flight and cabin crew competency, dangerous goods and other matters, as appropriate.

(10) Insert the controlled document, carried on board, in which the contact details are listed, with the appropriate paragraph or page reference.

(11) Operator's registered name.

(12) Issuance date of the AOC (dd-mm-yyyy).

(13) Title, name and signature of the authority representative.

ATTACHMENT E

LAYOUT AN OPERATIONS SPECIFICATION

CIVIL AVIATION AUTHORITY OF MALAYSIA

OPERATIONS SPECIFICATIONS

(Subject to the approved conditions in the Operations Manual)

Tel: 603 8871 / 603 8871 4103 Fax: 603 8871 4334 / 603 8890 1641 **(1)** E-Mail: /janimd@caam.gov.my

AOC # : **(2)** Operator Name : **(3)** Dba Trading Name : **(4)**	Signature: *Director Flight Operations* *Civil Aviation Authority of Malaysia* Date: **(5)**
Aircraft Model **(6)**	
Types Of Operation: Commercial Air Transportation ☐ Passengers ☐ Cargo ☐ Other: **(7)**	
Area(s) Of Operation: **(8)**	
Special Limitations: **(9)**	

SPECIFIC APPROVAL	YES	NO	DESCRIPTION (10)	REMARKS
Dangerous Goods	☐	☐		
Low visibility operations Approach and Landing	☐	☐	CAT: RVR: m DH: ft **(11)**	
Take Off	☐	☐	RVR: m **(12)**	
Operational Credit(s) **(13)**	☐	☐		
RVSM (14) ☐ N/A	☐	☐		
EDTO (15) ☐ N/A	☐	☐	Threshold Time: **(16)** Maximum Diversion Time: **(16)** minutes	
AR navigation specifications for PBN operations (17)	☐	☐		
Continuing Airworthiness (18)				
EFB (19)	☐	☐		
Other (20)	☐	☐		

Revision No: **(21)**

Notes –

(1) Telephone and fax contact details of the authority, including the country code. Email to be provided if available.

(2) Insert the associated AOC number.

(3) Insert the operator's registered name.

(4) Insert the operator's trading name, if different. Insert "dba" before the trading name (for "doing business as").

(5) Issuance date of the operations specifications (dd-mm-yyyy) and signature of the authority representative.

(6) Insert the aircraft model and registration.

(7) Other type of transportation to be specified (e.g. mail, emergency medical service).

(8) List the geographical area(s) of authorized operation (by geographical coordinates or specific routes, flight information region or national or regional boundaries).

(9) List the applicable special limitations (e.g. VFR only, day only).

(10) List in this column the most permissive criteria for each approval or the approval type (with appropriate criteria).

(11) Insert the applicable precision approach category (CAT II, IIIA, IIIB or IIIC). Insert the minimum RVR in metres and decision height in feet. One line is used per listed approach category.

(12) Insert the approved minimum take-off RVR in metres. One line per approval may be used if different approvals are granted.

(13) List the airborne capabilities (i.e. automatic landing, HUD, EVS, SVS, CVS) and associated operational credit(s) granted.

(14) "Not applicable (N/A)" box may be checked only if the aircraft maximum ceiling is below FL 290.

(15) If extended diversion time operations (EDTO) approval does not apply, select "N/A". Otherwise a threshold time and maximum diversion time must be specified.

(16) The threshold time and maximum diversion time may also be listed in distance (NM), as well as the engine type.

(17) Performance-based navigation (PBN): one line is used for each PBN navigation specification approval.

(18) Insert the name of the person/organization responsible for ensuring that the continuing airworthiness of the aircraft is maintained.

(19) List the EFB functions with any applicable limitations.

(20) Other authorizations or data can be entered here, using one line (or one multi-line block) per authorization (e.g. special approach authorization, MNPS, approved navigation performance).

(21) Reflect the revision control number.

ATTACHMENT F

LIST OF MANDATORY MANUALS/DOCUMENTS

No		Main Base	Hub	Station	Notes	Remarks
REGULATORY						
1	Civil Aviation Regulation (CAR 2016)	/	/	/	H/S	Latest Update
2	Malaysia AIP	/	/		S	
3	Malaysia FOD or Notices	/	/		S	
4	Foreign AIP	/	/		S	Overseas flight
5	Foreign AIC	/	/		S	Overseas flight
6	Relevant Local AIP			/	S	
7	Relevant Local AIC			/	S	
8	Relevant Local Civil Aviation Regulations	/	/	/	H/S	Link address
9	Dangerous Goods Handbook (Emergency Response Guidance)	/	/	/	H	DG operator only
10	Dangerous Goods Regulations (IATA)	/	/	/	S	
11	Live Animal Regulations (IATA)	/	/	/	S	Carriage of live animal
12	Perishable Cargo Regulations	/	/	/	S	
13	Annex 1-19	/			H/S	
FLIGHT OPERATIONS						
1	OM-A	/	/	/	H	
2	OM-B (No 5 – 11)	/	/		H	
3	OM-C	/	/		H	
4	OM-D	/			H	
5	Aircraft Flight Manual (AFM)	/			H/S	
6	Flight Crew Operations Manual (FCOM)	/			H/S	
7	Flight Crew Training Manual (FCTM)	/			H/S	
8	Flight Dispatch Manual	/	/	/	H	If applicable
9	Runway Take-off Analysis Chart	/	/	/	H	
10	Safety Emergency Procedures Manual (SEP)	/			H	
11	Standard Operating Procedures	/	/		H	
12	Cabin Crew Policy Manual	/			H	If applicable
13	Cabin Crew Operating Manual	/			H	If applicable
14	Safety Management System Manual	/	/	/	H	
15	RouteManual (Jeppessen/Lido/Naviga/etc)	/	/		H	
16	Flight Data Analysis Manual	/			H	
CERTIFICATES						
1	Malaysia AOC	/	/	/	H	Certified True Copy
2	Foreign AOC Validation	/	/	/	H	If applicable
GROUND OPERATIONS						

1	Ground Operations Manual	/	/	/	H	
2	Cargo Manual	/	/	/	H	If applicable
3	Security Programme Manual	/	/	/	H	
4	Corporate Emergency Operations Manual	/	/		H	
5	Station Emergency Response Plan	/	/	/	H	
6	Local Airport Emergency Plan/Manual	/	/	/	H	
7	Aircraft Weight and Balance (B)	/	/	/	H	
8	De-icing Procedures (B)	/	/	/	H	Winter operation
9	MEL (B)	/	/		H	
10	CDL (B)	/	/		H	If applicable
OTHERS						
1	First Aid Booklet/Poster/References	/	/	/	H	
2	Emergency Telephone List	/	/	/	H	
3	Station Head Handbook	/	/	/	H	

ATTACHMENT G

JOURNEY LOG BOOK

(a) The aeroplane journey log book shall contain but not limited to the following items and the corresponding roman numerals:

I — Aeroplane nationality and registration.
II — Date.
III — Names of crew members.
IV — Duty assignments of crew members.
V — Place of departure.
VI — Place of arrival.
VII — Time of departure.
VIII — Time of arrival.
IX — Hours of flight.
X — Nature of flight (private, aerial work, scheduled or non-scheduled).
XI — Incidents, observations, if any.
XII — Signature of person in charge.

(b) Entries in the journey log book shall be made currently and in ink or indelible pencil.

(c) Completed journey log book shall be retained to provide a continuous record of the last six months' operations.

TABLE OF RECORD RETENTION

Flight Crew Records	
Flight, duty and rest time	1 year
Licence and medical certificate	As long as the crew member is exercising the privileges of the licence for the operator.
Ground and flight training (all types)	
Route and aerodrome/heliport qualification training	
Dangerous good training	Until 12 months after the flight crew member has left the employment of the operator
Security training	Until 12 months after the flight crew member has left the employment of the operator
Proficiency and qualification checks (all types)	As long as the crew member is exercising the privileges of the licence for the operator.
Cabin Crew Records	
Flight, duty and rest time	1 year
Attestation, if applicable	As long as the crew member is exercising the privileges of the attestation for the operator.
Ground and flight training (all types) and qualification checks	
Dangerous good training	Until 12 months after the cabin crew member has left the employment of the operator
Security training	Until 12 months after the cabin crew member has left the employment of the operator
Competency checks	As long as the crew member is exercising the privileges of the licence for the operator.
Records for other AOC Personnel	

Training/qualification of other personnel for whom an approved training programme is required in these regulations	Until 12 months after the employee has left the employment of the operator
Licence, if required, and medical certificate if required	Until 12 months after the employee has left the employment of the operator
Proficiency or competency checks, if required	Until 12 months after the employee has left the employment of the operator
Flight Preparation Forms/ Trip Records	
Completed load manifest	3 months after the completion of the flight
Mass and balance reports	
Dispatch releases	
Operational flight plan	
Passenger manifests	
Weather reports	
Fuel and oil records	
Flight Recorder Records	
Cockpit voice recordings	Preserved after an accident or incident for 60 days or longer if requested by the CAAM
Flight data recordings	Preserved after an accident or incident for 60 days or longer if requested by the CAAM or AAIB
Aircraft Technical Logbook	
Journey records section	2 years
Maintenance records section	2 years
Other Records	
Quality system records	5 years
Dangerous goods transport document	6 months after the completion of the flight
Dangerous goods acceptance checklist	6 months after the completion of the flight

Records on cosmic and solar radiation dosage, if AOC holder operates aircraft that fly above 15 000 m (49 000 ft)	Until 12 months after the crew member has left the employment of the AOC holder

TRAINING FILE CONTENT AND ARRANGEMENT

(a) The requirement for training file content and arrangement shall be as follows:

(1) Biodata

(2) Employment Letter

(3) Job Specifications (Management only)

(4) Mandatory courses attended

(5) Training document:

(i) Initial Type Rating/Endorsement/Differences Course/Course

(ii) Line Oriented Flying Training (LOFT)

(iii) Certificate of Test (COT)

(iv) Instrument Rating Test/Renewal

(v) Line Check

(vi) Upgrading/Command

(vii) Others (related to operations- cabin crew, ground operations staff)

(6) Training/Courses/TRI/TRE Certificates

(7) Licence or Certificate. (Pilot licence, Cabin crew members attestation, dispatcher, loadmaster, driving licence – ramp staff and et cetera)

(8) Yearly Training Programme

Note – Courses are categories as but not limited to CRM, SEP, Recurrent Courses, DGR/DGA, etc.

ATTACHMENT I1

PILOT-IN-COMMAND'S DISCRETION REPORT-EXTENSION OF FLYING DUTY PERIOD/FLYING HOURS

Part A Operator Aircraft Type

Flight Number Pilot-in-Command

Date

Note If discretion exercised for part crew or individuals state name (s) and operating capacity below.

Part B Voyage Details

1. Crew acclimatised YES/NO
2. Length of preceding rest-18 to 30 hrs/under
   18 or over 30 hrs Hrs Mins
3. Allowable FDP from Table A or B
4. Split Duty: actual time off……time on…..……...credit……
5. In-flight relief; rest taken……bunk/seat……credit……
6. Revised allowable FDP ……..

Voyage Details						
Schedule (Planned)				Actual		
	Place	UTC	Local		UTC	Local
Duty to start				Duty started		
Depart				Departed		
Arrive				Arrived		
Depart				Departed		
Arrive				Arrived		
Depart				Departed		
Arrive				Arrived		

Depart				Departed		
Arrive				Arrived		
Depart				Departed		
Arrive				Arrived		
FDP to end				FDP ended		
				Actual FDP		

Amount of Pilot-in-Command's Discretion Exercised - Hrs Mins

Maximum Flying Hours Permitted…....in 28 days/1 year period. Hours Flown……..

Part C Pilot-in-Command's Report

Signed ……... ……..

Date ……..

Operator’s Remark/Action Taken

Signed ……..……..

Date ……..

Forwarded to **CAAM**

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Attachment I2

PILOT-IN-COMMAND'S DISCRETION REPORT-REDUCTION OF REST

NOTE: All times to be recorded as date/time six-figure groups, expressed in both UTC and Local time

Part A	Operator	Aircraft Type
	Flight Number	Pilot-in-Command
	Date	

NOTE: If discretion exercised for part crew or individuals state name (s) and operating capacity below.

Part B	Last duty started	UTC/Local
	Last duty ended	UTC/Local
	Rest earned	Hours
	Calculated earliest next available	UTC/Local
	Actual start of next FDP	UTC/Local
	Rest period reduced by	
	Crew affected:	

Part C **Pilot-in-Command's Report**

Signed ……..……

Date ……

Operator’s Remark/Action Taken

Signed ……... ……..

Date ……..

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PHASE ONE – BASIC KNOWLEDGE

Subject Matter	Recommended Duration (hours)		Degree of Expertise
	Trainees without previous aviation experience	Trainees with previous aviation experience	
Civil Air Law and Regulations	30	18	
Certification of Operators			2
The Convention on International Civil Aviation (The Chicago Convention)			2
International air transport issues addressed by the Chicago Convention			2
The International Civil Aviation Organization (ICAO)			2
Responsibility for aircraft airworthiness			3
Regulatory provisions of the flight manual			3
The aircraft minimum equipment list (MEL)			3
The operations manual			3
Aviation Indoctrination	12	6	
Regulatory			3
Aviation terminology and terms of reference			3
Theory of flight and flight operations			2
Aircraft propulsion systems			2
Aircraft systems			2
Aircraft Mass (weight) and Performance	27	15	
Basic principles for flight safety			3
Basic mass (weight) and speed limitations			3
Take-off runway requirements			3
Climb performance requirements			3
Landing runway requirements			3
Buffet boundary speed limitations			3
Navigation	24	12	
Position and distance; time			3
True, magnetic and compass direction; gyro heading reference and grid direction			2

Introduction to chart projections: The gnomonic projection; the Mercator projection; great circles on Mercator charts; other cylindrical projections; Lambert conformal conic projection; the polar stereographic projection			2
ICAO chart requirements			3
Charts used by a typical operator			3
Measurement of airspeeds; track and ground speed			3
Use of slide-rules, computers and scientific calculators			3
Measurement of aircraft altitude			3
Point of no return; critical point; general determination of aircraft position			3
Introduction to radio navigation; ground-based radar and direction-finding stations; relative bearings; VOR/DME - type radio navigation; instrument landing systems.			2
Navigation procedures			3
ICAO CNS/ATM systems (an overview)			1
Air Traffic Management	39	21	
Introduction to air traffic management			2
Controlled airspace			3
Flight rules			3
ATC clearance; ATC requirements for flight plans; aircraft reports			3
Flight information service (FIS)			3
Alerting service and search and rescue			3
Communications services (mobile, fixed)			3
Aeronautical information service (AIS)			3
Aerodrome and airport services			3
Meteorology	42	21	
Atmosphere; atmospheric temperature and humidity			2
Atmospheric pressure; pressure-wind relationships			2
Winds near the Earth's surface; wind in the free atmosphere; turbulence			3
Vertical motion in the atmosphere; formation of clouds and precipitation			2
Thunderstorms; aircraft icing			3
Visibility and RVR; volcanic ash			3
Surface observations; upper-air observations; station model			3
Air masses and fronts; frontal depressions			2
Weather at fronts and other parts of the frontal depression; other types of pressure systems			2
General climatology; weather in the tropics			1

Aeronautical meteorological reports; analysis of surface and upper-air charts			3
Prognostic charts; aeronautical forecasts			3
Meteorological service for international air navigation on			4
Field trip to local meteorological office			2
Mass (weight) and balance control	27	15	
Introduction to mass and balance			3
Load planning			3
Calculation of payload and loadsheet preparation			3
Aircraft balance and longitudinal stability			3
Moments and balance			3
The structural aspects of aircraft loading			3
Dangerous goods and other special cargo			3
Issuing loading instructions			3
Transport of Dangerous Goods by Air	9	9	
Introduction			
Dangerous goods, emergency and abnormal situations			3
Source documents			3
Responsibilities			3
Emergency procedures			3
Flight Planning	18	9	
Introduction to flight planning			2
Turbo-jet aircraft cruise control methods			3
Flight planning charts and tables for turbo-jet aircraft			3
Calculation of flight time and minimum fuel for turbo-jet aircraft			3
Route selection			3
Flight planning situations			3
Reclearance			3
The final phases			3
Documents to be carried on flights			3
Flight planning exercises			3
Threats and hijacking			3
EDTO			2
Flight Monitoring	16	16	
Position of aircraft			3
Effects of ATC reroutes			3
Flight equipment failures			3
En-route weather changes			3
Emergency situations			3
Flight monitoring resources			3
Position reports			3
Ground resource availability			3

Communications – Radio	18	6	
International aeronautical telecommunications service			2
Elementary radio theory			2
Aeronautical fixed service			2
Aeronautical mobile service			2
Radio navigation service			2
Automated aeronautical service			2
Human Factors	15	15	
The meaning of Human Factors			3
Dispatch resource management (DRM)			4
Awareness			3
Practice and feedback			3
Reinforcement			3
Security (emergencies and abnormal situations)	8	6	
Familiarity			3
Security measures taken by airlines			3
Procedures for handling threats, bomb scares, etc.			3
Emergency due to dangerous goods			3
Hijacking			3
Emergency procedures			3
Personal security for the FOO/FD			3

PHASE TWO – APPLIED PRACTICAL TRAINING

Subject Matter	Recommended Duration
Applied Practical Training	
Applied practical flight operations	25 hours
Simulator LOFT observation and synthetic flight training	4 hours
Flight dispatch practices (on-the-job training)	13 weeks
Route familiarization	1 week

ATTACHMENT K

Reporting instructions

MODEL AIREP SPECIAL

ITEM	PARAMETER	TRANSMIT IN TELEPHONY as appropriate
-	Message-type designator: • special air-report	[AIREP] SPECIAL

Section 1	1	Aircraft identification	*(aircraft identification)*
	2	Position	POSITION *(latitude and longitude)* OVER *(significant point)* ABEAM *(significant point)* *(significant point) (bearing) (distance)*
	3	Time	*(time)*
	4	Level	FLIGHT LEVEL *(number)* or *(number)* METRES *or* FEET CLIMBING TO FLIGHT LEVEL *(number)* or *(number)* METRES *or* FEET DESCENDING TO FLIGHT LEVEL *(number)* or *(number)* METRES *or* FEET
	5	Next position and estimated time over	*(position) (time)*
	6	Ensuing significant point	*(position)* NEXT
Section 2	7	Estimated time of arrival	*(aerodrome) (time)*
	8	Endurance	ENDURANCE *(hours and minutes)*

ection 3	9	Phenomenon encountered or observed, prompting a special air-report: • Moderate turbulence • Severe turbulence • Moderate icing • Severe icing • Severe mountain wave • Thunderstorms without hail • Thunderstorms with hail • Heavy dust/sandstorm • Volcanic ash cloud • Pre-eruption volcanic activity or volcanic eruption	TURBULENCE MODERATE TURBULENCE SEVERE ICING MODERATE ICING SEVERE MOUNTAINWAVE SEVERE THUNDERSTORMS THUNDERSTORMS WITH HAIL DUSTSTORM *or* SANDSTORM HEAVY VOLCANIC ASH CLOUD PRE-ERUPTION VOLCANIC ACTIVITY *or* VOLCANIC ERUPTION

Position reports and special air reports

(a) Section 1 is obligatory for position reports and special air-reports, although Items 5 and 6 thereof may be omitted when prescribed in *Regional Supplementary Procedures*; Section 2 shall be added, in whole or in part, only when so requested by the operator or its designated representative, or when deemed necessary by the PIC; Section 3 shall be included in special air-reports.

(b) Special air-reports shall be made whenever any of the phenomena listed under Item 15 are observed or encountered. Items 1 to 4 of Section 1 and the appropriate phenomenon specified in Section 3, Item 15, are required from all aircraft. The phenomena listed under “SST” shall be reported only by supersonic transport at transonic and supersonic cruising levels.

(c) In the case of special air-reports containing information on volcanic activity, a post-flight report shall be made on the volcanic activity reporting form. All elements which are observed shall be recorded and indicated respectively in the appropriate places on the form.

(d) Special air-reports shall be made as soon as practicable after a phenomenon calling for a special air-report has been observed.

(e) If a phenomenon warranting the making of a special air-report is observed at or near the time or place where a routine air-report is to be made, a special air-report shall be made instead.

VOLCANIC ACTIVITY REPORT (to be used for post-flight reporting)

Air-reports are critically important in assessing the hazards which volcanic ash cloud presents to aircraft operations.

OPERATOR:			A/C IDENTIFICATION: (as indicated on flight plan)		
PILOT-IN-COMMAND:					
DEP FROM:	DATE:	TIME; UTC:	ARR AT:	DATE:	TIME; UTC:
ADDRESSEE:			AIREP SPECIAL:		
Items 1-8 are to be reported immediately to the ATS unit that you are in contact with.					
1) AIRCRAFT IDENTIFICATION			2) POSITION		
3) TIME			4) FLIGHT LEVEL OR ALTITUDE		
5) VOLCANIC ACTIVITY OBSERVED AT (position or bearing, estimated level of ash cloud and distance from aircraft)					
6) AIR TEMPERATURE			7) SPOT WIND		
8) SUPPLEMENTARY INFORMATION SO_2 detected Yes O No O Ash encountered Yes O No O			Other _____ (Brief description of activity especially vertical and lateral extent of ash cloud and, where possible, horizontal movement, rate of growth, etc.)		
After landing complete items 9-16 then fax from to: (Fax number to be provided by the meteorological authority based on local arrangements between the meteorological authority and the operator concerned.)					
9) DENSITY OF ASH CLOUD	O (a) Wispy		O (b) Moderate dense		O (c) Very dense
10) COLOUR OF ASH CLOUD	O (a) White		O (b) Light grey		O (c) Dark grey
	O (d) Black		O (e) Other _____		
11) ERUPTION	O (a) Continuous		O (b) Intermittent		O (c) Not visible
12) POSITION OF ACTIVITY	O (a) Summit		O (b) Side		O (c) Single
	O (d) Multiple		O (e) Not observed		
13) OTHER OBSERVED FEATURES OF ERUPTION	O (a) Lightning		O (b) Glow		O (c) Large rocks
	O (d) Ash fallout		O (e) Mushroom cloud		O (f) All
14) EFFECT ON AIRCRAFT	O (a) Communication		O (b) Navigation systems		O (c) Engines
	O (d) Pitot static		O (e) Windscreen		O (f) Windows
15) OTHER EFFECTS	O (a) Turbulence		O (b) St. Elmo's Fire		O (c) Other fumes
16) OTHER INFORMATION (Any information considered useful.)					