CIVIL AVIATION GUIDANCE MATERIAL – 6004

GUIDANCE ON ISSUANCE AND RENEWAL REQUIREMENTS FOR AOC

CIVIL AVIATION AUTHORITY OF MALAYSIA

ISSUE 01
REVISION 01 – 15th NOVEMBER 2021

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Introduction

This Civil Aviation Guidance Material 6004 (CAGM - 6004) is issued by the Civil Aviation Authority of Malaysia (CAAM) to provide guidance for Air Operator Certificate, pursuant to Civil Aviation Directives 6004 – Issuance and Renewal Requirements for AOC(CAD 6004 - AOC). Organisations may use these guidelines to ensure compliance with the respective provisions of the relevant CAD's issued. Notwithstanding the Regulation 204 and Regulation 205 of the Malaysian Civil Aviation Regulations 2016 (MCAR 2016), when the CAGMs issued by the CAAM are complied with, the related requirements of the CAD's may be deemed as being satisfied and further demonstration of compliance may not be required.

(Captain Chester Voo Chee Soon)

Chief Executive Officer

Civil Aviation Authority of Malaysia

Civil Aviation Guidance Material components and Editorial practices

This Civil Aviation Guidance Material is made up of the following components and are defined as follows:

Standards: Usually preceded by words such as *"shall"* or *"must"*, are any specification for physical characteristics, configuration, performance, personnel or procedure, where uniform application is necessary for the safety or regularity of air navigation and to which Operators must conform. In the event of impossibility of compliance, notification to the CAAM is compulsory.

Recommended Practices: Usually preceded by the words such as "*should"* or "*may*", are any specification for physical characteristics, configuration, performance, personnel or procedure, where the uniform application is desirable in the interest of safety, regularity or efficiency of air navigation, and to which Operators will endeavour to conform.

Appendices: Material grouped separately for convenience but forms part of the Standards and Recommended Practices stipulated by the CAAM.

Definitions: Terms used in the Standards and Recommended Practices which are not self-explanatory in that they do not have accepted dictionary meanings. A definition does not have an independent status but is an essential part of each Standard and Recommended Practice in which the term is used, since a change in the meaning of the term would affect the specification.

Tables and Figures: These add to or illustrate a Standard or Recommended Practice and which are referred to therein, form part of the associated Standard or Recommended Practice and have the same status.

Notes: Included in the text, where appropriate, Notes give factual information or references bearing on the Standards or Recommended Practices in question but not constituting part of the Standards or Recommended Practices;

Attachments: Material supplementary to the Standards and Recommended Practices or included as a guide to their application.

The units of measurement used in this document are in accordance with the International System of Units (SI) as specified in CAD 5. Where CAD 5 permits the use of non-SI alternative units, these are shown in parentheses following the basic units. Where two sets of units are quoted it must not be assumed that the pairs of values are equal and interchangeable. It may, however, be inferred that an equivalent level of safety is achieved when either set of units is used exclusively.

Any reference to a portion of this document, which is identified by a number and/or title, includes all subdivisions of that portion.

Throughout this Civil Aviation Guidance Material, the use of the male gender should be understood to include male and female persons

Record of Revisions

Revisions to this Guidance Material shall be made by authorised personnel only. After inserting the revision, enter the required data in the revision sheet below. The *'Initials'* has to be signed off by the personnel responsible for the change.

ISS/REV No.	Revision Date	Revision Details	Initials
ISS01/REV01	15TH November 2021	Refer to Summary of changes	CAAM

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Summary of Changes

ISS/REV no.	Item no.	Revision Details
ISS01/REV01	Paragraph 4.1.3	Added “Acceptance letter”
	Subchapter 10.1	Change of title to “Leasing”
	Subchapter 10.2	Change of title to “Charter”
	Paragraph 10.2.1	Change to whole para.
	Appendix 2	Removed and reference out to the CAAM Website.
	Appendix 4	Change of the sample “Operations Specification”
	Appendix 9	Updated “List of Mandatory Documents and Manuals.
	Appendix 10	Incorporated changes from CAC 01/2021 on Dangerous goods training
	Attachment D	Removed and reference out to the CAAM Website.
	Attachment E	Removed and reference out to the CAAM Website.
	Attachment F	Removed and reference out to the CAAM Website.

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1 Introduction to Air Operator Certification

1.1 Nature of the responsibilities of The State

1.1.1 As a signatory to the ICAO Convention on International Civil Aviation, Malaysia has an obligation to promulgate regulations and standards in accordance with the ICAO Standards and Recommended Practices (SARPs) as outlined in the ICAO Annexes. In this regard, Civil Aviation Act 1969 (Act 3) authorised the Chief Executive Officer (CEO) to issue and amend regulations, orders and procedures in the interest of safety.

1.2 Discharge of State responsibilities

1.2.1 In order to discharge its responsibility, Malaysia has enacted the Act 3 that provides for the development and promulgation of Malaysia Civil Aviation Regulations (MCAR 2016) consistent with ICAO Annexes. The State regulatory system enables Malaysia to maintain continuing regulation and oversight of the activities of air operators without unduly inhibiting the operator's effective direction and control of the organisation. While ICAO Annex 6 — Operation of Aircraft requirements are applicable to international commercial air transport, in the interest of consistency and to ensure an equivalent level of safety for all commercial air transport operations, the MCAR 2016 and these policies and procedures are applicable as well for domestic commercial air transport operations

1.2.2 An essential element in the regulatory system is the certification of air operators. The requirement that an operator shall be in possession of an Air Operator Certificate (AOC) issued by Civil Aviation Authority of Malaysia (CAAM) in order to engage in commercial air transport operations is contained in regulation 110 of MCAR 2016. The system for both the initial inspection and certification and the continued safety oversight of air operators is outlined in this Guidelines Material (GM).

1.2.3 In accordance with the provisions of Regulation 110 of the Malaysian Civil Aviation Rules 2016 (MCAR 2016), no commercial air transport shall be established or shall operate services to, within and from Malaysia without permission of the Civil Aviation Authority, Malaysia. The Air Operator Certificate (AOC) issued by the CEO to the competent and eligible applicant, authorises the holder to conduct operation in accordance with the conditions and limitations mentioned in the Operations Specifications of the AOC. At present, CAAM issues AOC for operating the following types of Commercial Air Transport (combination of operations are acceptable) to applicants who request and meet the laid down requirements as specific to the type of Commercial Air Transport:

a) Scheduled;

b) Non-scheduled;

c) Cargo or Mail;

d) Passenger;

e) Others as required by the CAAM.

1.2.4 CAAM will issue the Air Operator's Certificate in accordance with the provisions of CAD 6 Part 1 and/or Part 3 as applicable. Permits for any other special type of operation can be granted subject to the applicant showing satisfactory capability to undertake the type of operations.

1.2.5 This 'Guidance Material' on Air Operator Certification, published as an equivalent document to Civil Aviation Directives (CAD) explains the procedure to be followed for issue or renewal of AOC and the various requirements which an applicant shall fulfil for obtaining an AOC.

1.2.6 The issuance of AOC shall be dependent upon the applicant demonstrating an adequate organisation, method of control and supervision of flight operations, training programme as well as ground handling, maintenance management, maintenance arrangements and finances consistent with the nature and extent of the operations specified. In compliance of the requirements to the best satisfaction of CAAM, the applicant may be issued with AOC, setting forth the operational authorisation and limitations to carry out the specified commercial air transport and/or special operations. Subsequent to the issuance of an AOC, CAAM will continue to monitor the operation through a systematic programme of safety oversight inspections.

1.2.7 With the the subsequent continuing safety oversight, CAAM will be able to ensure the protection of public interest and will be able to exercise indirect influence and control without encroaching upon the direct responsibility of the operator for the safety of the operation. The granting of an AOC by CAAM establishes that the operator has met the criteria for an acceptable operation and that the operator is capable of providing a safe commercial air transport service.

1.3 Applicable Rules and Requirements

1.3.1 In discharge of its responsibilities for regulating air transportation and ensuring safety of aircraft operations, CAAM has laid down detailed rules, regulations, requirements and procedures under the provisions of Civil Aviation Act 1969. The main responsibility for the safe conduct of the operations and compliance with the laws, rules regulations, requirements and directions issued from time to time by CAAM lies with the operator. Since the laws and regulations established by CAAM may not themselves provide the operator with comprehensive and detailed instructions as to the base of operations, the operator should, therefore, develop its own detailed operating procedures necessary for safety, regularity and efficiency of operations within the frame work of the laws, rules, regulations, requirements and directions issued by CAAM from time to time.

1.3.2 The requirements on various aspects relating to Commercial Air Transport are laid down in the Malaysian Civil Aviation Regulation 2016 and Civil Aviation Directives.

Malaysia being signatory to Chicago Convention, it is obligatory on all Malaysian operators to comply with the provisions of the ICAO Annexes. ICAO Annex 1, 6 and 8 together with ICAO Doc 8335, in particular, provide the requirements relating to air transport operations and licensing of personnel. The Standards in ICAO Annexes has been promulgated in the Civil Aviation Directives.

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2 Air Operator Certificate (AOC)

2.1 General

2.1.1 The AOC provides the basis for Malaysia to regulate the activities of operators and the means for the CAAM to authorise an air operator to commence operations and to exercise the continued safety oversight of the operator. Airworthiness Division and Flight Operation Division will be involved in the AOC certification process.

2.1.2 Airworthiness assessment will be focusing on applicant capability to ensure that the aircraft they operate are maintained in an airworthy condition and can conduct safe operation for AOC. Continuing Airworthiness Management Organisation approval forms part of AOC approval. This assessment measures the competence of the operator thereby provides the basis on which to issue, renew, suspend, revoke or vary the certificate.

2.1.3 The AOC and the associated operations specifications are briefly introduced in this chapter. Detailed requirements and guidance for the AOC and the operations specifications can be found in subsequent chapters.

2.1.4 The AOC and the associated operations specifications issued to an air operator by the CAAM are also intended to provide a basis for another State to authorise operations in its territory by that air operator, as the requirements under which the certificate is issued will be at least equal to the applicable Standards specified in ICAO Annex 6, Part I — International Commercial Air Transport — Aeroplanes and Part III — International Operations — Helicopters, Section II.

2.2 The AOC

2.2.1 Aircrafts engaged in commercial operations are required by MCAR 2016 to carry a certified true copy of the AOC (refer paragraph 2.4) and a copy of the associated operations specifications relevant to the aircraft type. The AOC certifies that the operator is authorised to perform commercial air transport operations, as defined in the associated operations specifications, in accordance with the operations manual and the MCAR 2016.

2.2.2 The information on the AOC shows Malaysia as the State of the Operator, the identity CAAM as the responsible authority, and the certificate number with its expiration date. It also shows the name of the operator and any other trading name relevant to the particular certificate, with the address of the operator’s principal place of business.

2.2.3 The contact details where 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, are required to be provided on board the aircraft and shall include names, telephone and fax numbers, with country codes and e-mail addresses.

2.2.4 An AOC and associated operations specification validity is as per paragraph 3.7 of CAD 6004.

2.3 Operations Specifications

2.3.1 The operations specifications associated with an AOC are an integral part of the authorisation under which an operator conducts operations.

2.3.2 The specifications cover all aspects of the operation and include special limitations, conditions and authorisations with criteria as appropriate. Detailed conditions applicable to operations specifications may also be approved by the CAAM in the operations manual.

2.4 Certified True Copy of the AOC

2.4.1 Each aircraft must have on board a certified true copy of the AOC. The certification statement shall attest that the copy is a true copy of the original and shall be signed by the official entitled to certify a true copy and display an official stamp of that official.

3 Certification Procedures – General

3.1 Introduction

3.1.1 The purpose of an AOC is to certify that specified commercial air transport operations are authorised by the CAAM and are in conformance with applicable regulations. The procedures contained in this Guidance Material will be utilised by the applicant for the issuance of an AOC and for the continuing safety of the operations conducted in accordance with the AOC and the related operations specifications.

3.1.2 During the certification process, CAAM is to be satisfied that the applicant, who will have the ultimate responsibility for the safety of the operation, is eligible for the issuance of an AOC and has the ability and competence both to conduct safe and efficient operations and to comply with applicable regulations. CAAM, in addition to assessing the ability and competence of the applicant, will also endeavour to guide the applicant in organisational and procedural matters which will result in a safe operation. Thus, if the objectives of both the CAAM and the applicant are achieved in the certification process, they will have commenced their shared responsibility for safety, regularity and efficiency of operations, which will in turn enhance the public confidence in the operations conducted by the applicant as an operator and holder of an AOC.

3.1.3 The issue of an air operator certificate by CAAM shall be dependent upon the operator demonstrating an adequate organisation, method of control and supervision of flight operations, training programme as well as ground handling and maintenance arrangements consistent with the nature and extent of the operations specified.

3.1.4 For the purpose of issuance of an AOC, fleet requirements are stated in paragraph 1.6 of CAD 6004. It is aimed at the case of operators of a single aircraft which needs repairs, modifications or a long maintenance check.

3.1.5 At the commencement of the certification process, a CAAM inspector will be appointed as the project manager (PM) and a certification team will be established consisting of qualified and experienced inspectors of the necessary specialisations, such as operations, airworthiness, cabin safety and dangerous goods. The PM will be responsible for coordinating all aspects of the certification process and will be the focal point for dealing with all matters and correspondence between the applicant and the CAAM. The safety oversight workload of the PM and team members may need to be adjusted in order that enough time is provided for the certification of a new air operator.

3.1.6 The applicant should address all findings and discrepancies to the satisfaction of the CAAM before the issue of the AOC.

3.1.7 Since each operation may differ significantly in complexity and scope, the PM and the certification team have considerable latitude in taking decisions and making recommendations during the certification process. The ultimate recommendation by the PM and decision by the CAAM regarding certification and awarding of an AOC are to be based on the determination of whether or not the applicant meets the CAAM's requirements and is adequately equipped and capable of conducting the proposed operation in a safe and efficient manner.

3.2 Certification Procedure

3.2.1 The procedure for the application and granting of an AOC by the CAAM will be organised in phases and will take the following sequence:

a) pre-application phase;

b) formal application phase;

c) document evaluation phase;

d) demonstration and inspection phase; and

e) certification phase.

3.2.2 Each of these phases is briefly introduced below and each will be dealt with in greater detail in the succeeding chapters of this CAGM.

3.3 Pre-application phase

3.3.1 A prospective operator who intends to apply for an AOC shall enter into preliminary discussions with the CAAM and will be provided with complete information concerning the type of operations which may be authorised, the data to be provided by the applicant and the procedures which will be followed in the processing of the application. It is essential that the applicant has, in this pre-application phase, a clear understanding of the form, content and documents required for the formal application.

3.3.2 The CAAM will advise the prospective operator on the approximate period of time that will be required to conduct the certification process, subsequent to the receipt of a complete and properly executed application considering also the complexity of the proposed type of operation. The prospective operator will then submit a schedule of events (Attachment G – Schedule of Events) to CAAM which are agreeable to both parties to demonstrate that the prospective operator has the capability and competency to comply with all the requirements for issuance of AOC. This advice is of particular importance in the case of new operators so that such applicants may avoid undue financial outlays during the certification period.

3.3.3 In those cases, where an applicant's organisation is in the formative stage, and the applicant has little or no operating experience, the applicant shall be advised that it may not be possible to judge the organisation's operating competency until

a sufficient period of operational proving, including proving flight operations, have been carried out and that the overall period required to reach a final decision on the application may be protracted and considerable financial outlays unavoidable.

3.3.4 The importance of a thorough and careful preliminary assessment of the application cannot be overemphasized. The more thoroughly the applicant's competence is established at this stage, the less likelihood there will be of having serious problems in the document evaluation and the demonstration and inspection phases preceding certification or during the course of subsequent operations. Analysis of the application will indicate either that it is acceptable on a preliminary basis or that it is unacceptable.

3.3.5 If the application is acceptable to the CAAM on the basis of the preliminary assessment, the applicant should be encouraged to proceed with preparations for the commencement of operations on the basis that an AOC will be issued subject to satisfactory completion of the remainder of the certification procedure.

3.3.6 The pre-application phase will also include a parallel assessment of the financial, and economic status of the applicant and the proposed operation. The financial viability of the operation may be the most critical factor in reaching a decision on whether or not an AOC should be awarded. The determination of the financial resources of the applicant is usually based on an audit of the operator's assets and liabilities and a thorough evaluation of all financial information and other pertinent data such as proposed arrangements for the purchase or lease of aircraft and major equipment.

3.3.7 The financial and economic assessment of the applicant will be carried out by the CAAM or an appropriate organisation accepted by the CAAM and be assigned responsibility to provide an assessment related to economic aspects of the proposed operation.

3.4 Formal application phase

3.4.1 Upon completion of the assessment concerning the financial and economic aspects of the application and after any deficiencies have been corrected, a provisional determination shall be made regarding the general feasibility of the operation. If the operation is found to be provisionally acceptable, the second phase of the certification process, the formal application phase, can be undertaken.

3.4.2 The formal application for an AOC, accompanied by the required documentation, shall be submitted in the manner prescribed in Chapter 5 of this CAGM.

3.4.3 The submission of a formal application is interpreted by the CAAM to mean that the applicant is aware of the regulations applicable to the proposed operation, is prepared to show the method of compliance and is prepared for an in depth evaluation, demonstration 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 organisation.

3.5 Document evaluation phase

3.5.1 The document evaluation phase involves the detailed examination of all documentation and manuals provided by the applicant to establish that every aspect required by the regulations is included and adequately covered.

3.5.2 In order to facilitate this phase of the certification process, the applicant shall coordinate all aspects of the development of the required documentation with the CAAM certification team, prior to the submission of the formal application.

3.6 Demonstration phase

3.6.1 Inspections in this phase will involve base and station facility inspections, inspection of the operational control and supervision facilities and inspection of training programmes and training facilities.

3.6.2 Demonstrations will involve demonstration of the operational control system and may involve demonstration flights.

3.7 Certification phase

3.7.1 The certification phase is the conclusion of the certification process when the PM has determined that all certification requirements, both operational and economic, have been completed in a satisfactory manner and that the operator will comply with the applicable regulations and is fully capable of fulfilling its responsibilities and conducting a safe operation.

3.7.2 The culmination of this phase is the issuance of the AOC and its associated operations specifications authorising the conduct of the specified operations.

3.7.3 Subsequent to the issuance of an AOC, CAAM inspector will be responsible for continued surveillance and for conducting periodic inspections, to ensure the operator’s continued compliance with the CAAM regulations, authorisations, limitations and provisions of its AOC and operations specifications. These periodic inspections are components of a continuing safety oversight programme.

4 Pre-application Phase

4.1 Initial inquiry and CAAM response

4.1.1 The pre-application phase commences with the applicant making an initial inquiry by letter, telephone call or personal visit to the CAAM.

4.1.2 A form for the prospective operator's pre-assessment statement (POPS) is to be completed by the applicant. The purpose of the POPS is to establish the intent of the applicant to continue with the process for certification and thus enable the CAAM to commit resources and plan the certification process.

4.1.3 The POPS form and instructions for its completion are provided in Appendix 1 – Instructions for the Completion of the Prospective Operator's Pre-Assessment Statement and Appendix 2 – Prospective Operator's Pre – assessment Statement (POPS). An applicant shall submit the Prospective Operator's Pre-Assessment Statement (POPS) for issue of an acceptance letter for the establishment of Commercial Air Transport along with the required fees to the CEO. The POPS shall indicate the type of operation of the AOC. The application should be submitted as early as possible before the planned commencement date of operation. The certification process usually takes 9 months from submission of the Formal Application, subject to full compliance by the applicant and taking into consideration the time required for the entire certification process and its complexity.

4.2 Pre-application meeting

4.2.1 The pre-application meeting will be attended by the CAAM Project Manager (PM) and certification team and the key management personnel of the applicant. The applicant should be prepared to discuss, in general terms, all aspects of the proposed operations.

4.2.2 The applicant should thoroughly review the Civil Aviation Directive (CAD) and Civil Aviation Guidance Material (CAGM) concerning personnel, facilities, equipment and technical data requirements.

4.2.3 At this Initial stage, Flight Operation Division may organise a meeting with prospective operator and representative from the Airworthiness Division to introduce to the prospective operator with regards to CAAM regulations and guidance material as listed in paragraph 1.1.1. Airworthiness Division representative may inform the prospective operator on Airworthiness related regulation/guidance material such as CAD 6801, 6802, CAD 8601, CAGM 6801 and CAGM 6802 involved during certification process.

4.2.4 If the prospective operator decided to proceed with AOC application, Airworthiness Division will nominate a Primary Maintenance Inspector (PMI) to coordinate with Flight Operation Division to continue with next phase of application. Fight Operation Division then nominate Project Manager (PM) and Primary Operation Inspector (POI) for the issuance of AOC process. PMI shall communicate with PM and POI for coordination to prevent duplicate functions or inspection schedules.

4.2.5 The applicant will be provided with an overview of the certification process and made aware of the financial and economic assessment of the applicant will be carried out by the CAAM or an appropriate organisation accepted by the CAAM and be assigned responsibility to provide an assessment related to economic aspects of the proposed operation. It is essential that the financial and economic assessments are commenced early since an AOC shall not be granted without a satisfactory assessment of these aspects from the appropriate department.

5 Formal Application Phase

5.1 Formal application package

5.1.1 The formal application for certification will be an application letter with attachments containing the information required by the CAAM, comprising a formal application package. The development of the application letter and its attached documents should have been coordinated with the CAAM certification team subsequent to the pre-application meeting. Such coordination, between the personnel of the applicant and the CAAM certification team, will improve the quality of the application package and facilitate the later document evaluation process. The fee established for the certification of an air operator shall be submitted when the operator submits the formal application package in accordance to Civil Aviation (Fees and Charges) Regulations.

5.1.2 The application letter shall be signed by the applicant's accountable manager and shall contain at least the following information:

a) a statement that the application serves as a formal application for an AOC;

b) the name and address of the applicant;

c) the location and address of the applicant's principal place of business, the main base of operations and the main maintenance base or AMO name and location;

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

e) the name and contact details of the applicant's main point of contact;

f) the identity of key management personnel: Accountable Manager (AM); operations manager; chief pilot; fleet manager(s) (if applicable); cabin crew manager; safety manager; training manager; Continuing Airworthiness Manager; ground services manager; security manager; and quality manager;

Note: - Refer to Attachment E –Application for Nomination of an Accountable Manager for the Purpose of Air Operator Certification and Supervision and Attachment F – Application for Nomination of the Post Holders for the Purpose of Air Operator Certification and Supervision for respective application of nomination form.

g) the nature of the proposed operations: passenger/cargo, day or night, visual flight rules (VFR) or instrument flight rules (IFR), whether or not dangerous goods are to be transported; and

h) the desired date for the operation to commence.

5.1.3 The attachments that need to accompany the formal application letter are:

a) the identification of the operation specifications sought with information on how associated conditions will be met, as described in paragraph 5.2.1. below;

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

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

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

e) the details of the SMS;

f) 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;

g) a list of aircraft to be operated;

h) documents of purchase, leases, contracts or letters of intent;

i) arrangements for crew and ground personnel training and qualification, facilities and equipment required and available;

j) the operations manual;

k) Continuing Airworthiness Management Organization (CAMO) approval as per CAD 6801 and 6802;

l) Approved Maintenance Organisation (AMO) approval as per Notice 8601;

m) Aircraft maintenance programme (AMP) and Reliability program;

n) Continuing Airworthiness Management Exposition (CAME) approval as per CAD 6801 and 6802;

o) Certificate of Registration and Certificate of Airworthiness as per CAD 7101 & CAD 8301;

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

q) the status of the assessment of financial and economic matters by the the CAAM or an appropriate organisation accepted by the CAAM.

Note: - For more information with regards to Facilities and Documentation, refer to Appendix 8 – Facilities and Documentation – Air Operator Certificate.

5.1.4 A more detailed description of some of these attachments is provided in paragraph 5.2.

5.1.5 A cursory assessment of financial competence can be gauged by items listed in paragraph 5.1.2 and 5.1.3.

5.2 Attachments to the Formal application

5.2.1 *Identification of desired operations specifications*. The CAAM approves special authorisations that are enabled through MCAR 2016 by the issuance of operations specifications. The list of authorisations, conditions and limitations as outlined in Attachment A – Formal Application Form shall be utilised. The applicant shall identify the desired operations specifications appropriate to the intended operation for each aircraft model in the operator's fleet, identified by aircraft make, model and series. The issuance of each operation specification shall be subject to the applicant meeting the CAAM regulations and requirements. Each operations specification will also be subject to the air operator satisfying, on an ongoing basis, conditions that are established for their use. While some conditions for these approvals may be contained in the specific approvals and remarks portion of the operations specifications, detailed conditions will be contained in the operations manual. The conditions contained in the operations manual will include the training, qualifications, equipment requirements and procedures, as applicable, under which the special authorisation can be utilised.

Note: - Specific Approval (SPA) process normally has their own five phase application and require separate application process. Please refer to CAGM 6008 for detailed requirements on SPA.

5.2.2 *Schedule of events*. The schedule of events is a key document that lists items, activities, programmes, aircraft and facility acquisitions that will be made ready for inspection by the CAAM before certification. The schedule shall include date(s):

a) when crew members and maintenance personnel will commence training;

b) when maintenance facilities will be ready for inspection;

c) when each of the required manuals will be ready for evaluation;

d) when the aircraft will be ready for inspection;

e) when terminal facilities will be ready for inspection;

f) if and when demonstration flights (proving flights) are planned; and

g) of proposed assessments of training staff and other persons subject to the approval of CAAM

The dates shall be logical in sequence and provide time for review, inspection and approval of each item.

The overall plan is to be kept under constant review and amendment to maintain control of the certification process.

5.2.3 ***Initial statement of compliance.*** The initial statement of compliance shall be a complete list of all CAAM regulations applicable to the proposed operation. Each regulation or sub-part shall be accompanied by a brief description or a reference to a manual or other document. The description or reference shall describe the

method of compliance in each case. The method of compliance may not be finalized at the time of the formal application, in which case a date shall be given by which the final information will be provided. The purpose of the statement of compliance is to ensure that the applicant has addressed all regulatory requirements. It aids the CAAM certification team to assess where the regulatory requirements have been addressed in the applicant's manuals, programmes and procedures.

5.2.4 ***Management structure and key staff members.*** The CAAM regulations establish basic management positions and the qualifications for these positions, with some variation in the requirement dependent upon the complexity of the proposed operation. The requirements cover the following positions: flight operations manager, chief pilot, safety manager, training manager, Continuing Airworthiness Manager and quality manager. The list shall include the management positions, the names of the individuals involved and their qualifications and relevant management experience and, where appropriate, their licences, ratings and aviation experience. The CAAM may approve positions or number of positions, other than those listed, if the applicant is able to show that it can perform the operation with the highest degree of safety under the direction of fewer or different categories of management personnel.

5.2.5 ***Safety Management Systems (SMS).*** The details of the applicant's SMS include the safety policy, safety organisation, safety assessments, occurrence reporting, hazard identification, risk assessment and risk management, event investigation and analysis, performance monitoring, safety promotion and safety assurance. The applicant shall identify the accountable manager who, irrespective of other functions, has ultimate responsibility and accountability, on behalf of the organisation, for the implementation and maintenance of the SMS.

5.2.6 ***Aerodromes and areas.*** A list shall be provided with the destination and alternate aerodromes designated for proposed scheduled operations and areas of operation for non-scheduled operations.

5.2.7 ***Aircraft to be operated.*** A list of the aircraft to be operated shall be provided, with the make, model, series and the nationality and registration marks for each aircraft and details of the origin and source for each aircraft, if these details are known. It is possible that the details for individual aircraft may not yet be available, in which case, evidence shall be provided as described in paragraph 5.2.8 below.

5.2.8 ***Documents of purchase, leases, contracts or letters of intent.*** Notwithstanding paragraph 1.6 of CAD 6004, these documents shall provide evidence that the applicant is actively procuring aircraft, facilities and services appropriate to the operation proposed. If formal contracts are not completed, letters or other documents showing preliminary agreements or intent shall be provided. These documents may relate to aircraft, station facilities and services, weather reporting, communications facilities, maintenance, aeronautical charts

and publications, aerodrome analysis and obstruction data, outsourced training and training facilities.

5.2.9 ***Crew and ground personnel training and required facilities.*** Details of the facilities required and available for training company personnel and of the training programme with dates for commencement and completion of the initial programme shall be provided. Training will include: human performance, threat and error management for flight crew, maintenance technicians and flight dispatchers, the transport of dangerous goods, and security. Specific attention should be paid, as applicable to the crew member position, to company procedures indoctrination; emergency equipment drills; aircraft ground training; flight simulators and other flight simulation training devices; and aircraft flight training. All these aspects shall cover both initial and recurrent training. Detailed information is provided in Appendix 8 – Facilities and Documentation – Air Operator Certificate.

5.2.10 ***Operations manual.*** The operations manual, contains operating instructions which must be followed by all personnel which may be provided in separate parts, shall set out the applicant's general policies, the duties and responsibilities of personnel, operational control policy and procedures, and the instructions and information necessary to permit flight and ground personnel to perform their duties with a high degree of safety. The size as well as the number of volumes of the operations manual will depend upon the size and complexity of the proposed operations.

5.2.11 ***CAME.*** The CAME shall describe the administrative arrangements between the applicant and the approved maintenance organisation (AMO) and shall define the procedures to use, the duties and responsibilities of operations and maintenance personnel and the instructions and information to permit maintenance and operational personnel involved to perform their duties with a high degree of safety.

5.2.12 ***Aircraft maintenance programme.*** This programme, containing scheduled maintenance, will detail the maintenance requirements for individual aircraft.

5.2.13 ***Method of control and supervision of operations.*** This shall set out the applicant's proposals for control and supervision of operations including dispatch, flight watch or flight monitoring and communication procedures.

5.2.14 ***Assessment of financial and economic matters by the CAAM or an appropriate organisation accepted by the CAAM***. The status of the assessment of financial and economic matters shall be clearly identified in the formal application package since a successful outcome of this assessment is essential to the issuance of an AOC.

5.3 Acceptability of the Formal application

5.3.1 If the formal application package is incomplete or otherwise unacceptable, the PM will inform the applicant in writing, providing details of the deficiencies and advice on the resubmission of the formal application.

5.3.2 If the information in the formal application package is considered acceptable by the certification team, the PM will schedule a formal application meeting with the applicant.

5.4 Formal application meeting

5.4.1 A formal application meeting will be conducted between the PM, the certification team and all the key management personnel of the applicant, with the objective of resolving any questions on the part of either the CAAM, or the applicant, to establish a common understanding on the future procedure for the application process.

5.4.2 In particular, the formal application meeting shall confirm that the management background information satisfies regulatory requirements; it shall address any errors or omissions in the application package, resolve any scheduling date conflicts and agree on a process for revising event dates, reinforce the communication and working relationships between the CAAM certification team and applicant personnel and, finally, determine the acceptability of the formal application package. It shall be understood that acceptance of the formal application package by the PM does not constitute acceptance or approval of any of the attachments which will be subjected to later in-depth review. The identification of significant discrepancies during the in-depth review may require further meetings between appropriate members of the CAAM certification team and the applicant personnel.

5.4.3 Subsequent to the formal application meeting and subject to successful acceptance of the application package, the PM will provide the applicant with a letter acknowledging receipt and acceptance of the formal application.

6 Document Evaluation Phase

6.1 General

6.1.1 After the formal application has been accepted, the CAAM certification team will commence a thorough evaluation of all the documents and manuals that are required by the regulations to be submitted to them. The CAAM should endeavour to complete these evaluations in accordance with the schedule of events prepared by the applicant and agreed at the formal application meeting. If a document or manual is incomplete or deficient, or if non-compliance with regulations or safe operating practices is detected, the document or manual shall be returned to the applicant for corrective action with a detailed list of deficiencies.

6.1.2 Documents or manuals that are satisfactory will be approved or accepted, as required by the regulations. Approval shall be indicated by a signed document. Acceptance of material that does not require formal approval may be confirmed by letter.

6.1.3 The complexity of the information that needs to be addressed in the applicant's documents and manuals depends upon the complexity of the proposed operation.

6.2 Documents and manuals to be evaluated

6.2.1 The following documents make up a document system and shall be provided by the applicant:

a) Draft Operations Specifications

b) Statement of compliance

c) Management personnel resumes providing qualifications and aviation experience

d) Aircraft flight manuals

e) Operations manual (individual manuals and items listed below form parts of the Operations manual):

1) Aircraft operating manual
2) Minimum equipment list (MEL)
3) Configuration deviation list (CDL)
4) Aircraft performance manual
5) Mass and balance control manual
6) Aircraft loading and handling manual or ground handling manual
7) Training manuals for flight crew, cabin crew, operations personnel and ground personnel
8) Route guide
9) Dangerous goods manual
10) Passenger briefing cards

11) Aircraft search procedure checklist
12) Operational control procedures, dispatch, flight monitoring, etc.

f) SMS manual, including a description of the flight safety document system

g) Security programme manual

h) Continuing Airworthiness Management Exposition (CAME)

i) Aircraft maintenance programme for each aircraft type

j) Plan for demonstration flights as applicable

Note. – Flight Safety Documents System means a set of inter-related documentation established by the operator, compiling and organizing information necessary for flight and ground operations, and comprising, as minimum, the operations manual and the operator's maintenance control manual.

6.2.2 All manuals are to be provided with procedures for the development, control and distribution of each manual, the means to keep the manual up-to-date and the means for the publication and distribution of amendments.

6.2.3 A registration sheet for amendments and revisions, including dates of registration and validity and a list of effective pages shall also be included.

6.2.4 Manuals will require appropriate revision and amendment when new requirements, operations or equipment are introduced. Amendment and revision changes must be indicated by marks or signs in text, graphics and diagrams.

6.3 Evaluation of the documents

6.3.1 ***Draft operations specifications*:** Operations specifications form part of the AOC. The CAAM standard operations specifications will have been given to the applicant at the pre-application meeting and a list of desired operations specifications identified by the applicant to form the draft operations specifications. This draft will have been edited by the applicant and the CAAM certification team to add necessary authorisations, conditions and limitations to produce operations specifications appropriate to the applicant's intended operation. Information and detailed conditions (such as training, qualifications, equipment requirements and procedures under which each special authorisation may be utilised) shall be available in the operations manual. Subsequent amendments to the specifications can be initiated later by the operator or the CAAM as required by changing circumstances.

6.3.2 ***Statement of compliance*:** The certification team will evaluate the statement of compliance, the purpose of which is to ensure that the applicant has met all regulatory requirements applicable to the proposed operation. The statement also indicates to the certification team where the regulatory requirements have been addressed in the applicant's manuals, programmes and procedures. The final

statement of compliance needs to be completed by the air operator and accepted by the CAAM prior to the commencement of the flight operations inspections.

6.3.3 ***Management personnel resume providing qualifications and aviation experience*:** The list shall include the management positions, the names of the individuals involved and their qualifications and relevant management experience and their licences, ratings and aviation experience.

6.3.4 ***Aircraft flight manuals*:** Flight manuals are required to be provided specific to individual aircraft and are subject to the control of the State of Registry. Arrangements for the administration control and amendment of copies of the flight manuals shall be examined together with the means for providing aircraft performance and limitations information to the flight crew.

6.3.5 ***Operations manual*:** The operations manual is the means by which the applicant intends to control all aspects of the intended operation. Its structure consists of four parts: a general section; aircraft operating information; areas, routes and aerodromes; and training. The arrangements for the administration and control of the operations manual shall have already been evaluated during the cursory review in the formal application phase of the certification process. Detailed procedures for the review and approval of the operations manual are contained in CAD 6 Part 1 and 3 as applicable.

6.3.6 Manuals or other items which may be included in the operations manual and which require evaluation are given in paragraph 6.3.6.1 to 6.3.6.14. While references below are made to a separate manual, air operators may at their discretion include the information in the Operations Manual if practicable. Detailed procedures for conducting the operations manual review are contained in upcoming chapters, as noted below:

6.3.6.1 ***SMS manual:*** An SMS manual is required and documents all aspects of the SMS, including: the statement of safety policy and objectives, which clearly describes the safety accountabilities and emergency response planning; the safety risk management, which includes hazard identification processes and risk assessment and mitigation processes; the safety assurance, including safety performance monitoring with an investigation capability; and safety promotion and training. Detailed procedures for the conducting of the SMS manual review and requirements are contained in Chapter 11.

6.3.6.2 ***Aircraft operating information/manual (AOM):*** Aircraft operating manuals for each type of aircraft to be operated are required by the MCAR 2016. These manuals are required to contain normal, abnormal and emergency procedures, details of the aircraft systems and the checklists to be used. Aircraft operating manuals are required to contain:

a) Normal, abnormal and emergency procedures;

b) Details of the aircraft systems;

c) SOPs of the operator;

d) Checklists to be used; and

e) Associated crew briefing.

6.3.6.3 ***MEL:*** A MEL is required for each type and model of aircraft to be operated, which provides for the operation of the aircraft, subject to specified conditions, with particular equipment inoperative. This list prepared by the applicant in conformity with, or more restrictive than, the master minimum equipment list (MMEL) approved by the State of Design for the aircraft type, is tailored to the applicant's aircraft and installed equipment. The MEL is required to be approved by CAAM. For this the draft MEL prepared by the company shall have to be reviewed by the inspectors from both the operations and the airworthiness sections. The MEL needs to be available to flight crew, maintenance personnel and personnel responsible for operational control. The MEL also needs to include instructions for its use.

6.3.6.4 ***CDL:*** A CDL for each aircraft type and model may be established by the organisation responsible for the type design and approved by the State of Design to provide for the commencement of a flight without specified external parts. The CDL contains any necessary information on associated operating limitations or performance corrections and should be available to flight crew, maintenance personnel and personnel responsible for operational control. A CDL needs to include instructions for its use.

6.3.6.5 ***Aircraft performance manual:*** These manuals are required for each type and model of aircraft to be operated. The manuals need to contain adequate performance information and procedures for the calculation of performance for all phases of flight to enable aircraft to be operated within the performance limitations specified in the aircraft flight manual. The manual should cover performance limitations for take-off, en-route and landing in all engines operating and in appropriate engine inoperative situations, and should take into consideration appropriate factors affecting performance, such as line-up distance for take-off, runway conditions (wet, contaminated, etc.), aircraft configuration and technical status and environmental conditions. The applicant should have a system for the provision of current performance and obstacle data for the aircraft, routes and aerodromes/heliports in use.

6.3.6.6 ***Mass and balance control manual:*** The manual provide for a system to obtain, maintain and distribute to operational personnel information on the mass and balance of each aircraft operated and the means to keep this information up to date. The manual includes procedures for the preparation of load sheets, the distribution of passengers and cargo, determining passenger, baggage and cargo mass and for the use of standard mass, as well as last-minute change procedures.

6.3.6.7 ***Ground handling manual:*** This manual contains procedures and limitations for servicing, fuelling, loading and unloading, pre-flight preparation and post-flight securing, applicable to the aircraft type and model. The manual should cover at least ramp operations, passenger services, baggage services, cabin services, weight and balance control, ground support equipment, and fuel services. Detailed procedures and requirements with regards to the Ground Handling Operation are contained in CAD 6010 and CAGM 6010.

6.3.6.8 ***Training manuals for flight crew, cabin crew, operations personnel, ground personnel and maintenance personnel*:** Training manuals are required for all operational, maintenance and ground personnel. These shall cover all aspects of initial, recurrent, transition and re-qualification, upgrades, recency of experiences, familiarisation, differences and other specialised training programmes. Detailed procedures for the review and approval of training information/manuals are contained in Chapter 13.

6.3.6.9 ***Route guide*:** This is required to ensure that the flight crew and personnel responsible for operational control have the necessary information for communications, navigation aids, aerodromes/heliports, instrument procedures for departure, en-route and arrival during the conduct of the particular operation.

6.3.6.10 ***Dangerous goods manual*:** All applicants will require information/manual containing procedures for the handling of dangerous goods, emergency response to dangerous goods incidents and the training of personnel. The details required will depend upon the intended status of the applicant with respect to the transport of dangerous goods. If a declaration has been made that dangerous goods will be carried as cargo, the applicant will require comprehensive material on the control, loading and carriage of dangerous goods and on response to dangerous goods incidents and emergencies. If it is not intended to transport dangerous goods as cargo, the applicant will still need to cover dangerous items that form part of the normal aircraft equipment, dangerous items that are permitted to be carried by passengers and dangerous items that may be carried in the form of company material. Detailed procedures for the review and approval of the dangerous goods manual are contained in Chapter 14.

6.3.6.11 ***Passenger briefing cards***: Passenger briefing cards need to be provided to supplement oral briefings and be particular to the type and model of aircraft and the specific emergency equipment in use. The passenger briefing card shall be reviewed to ensure it meets the requirements of the MCAR 2016 and CAD 6.

6.3.6.12 ***Aircraft search procedure checklist*:** The checklist needs to be carried on board and describes the procedures to be followed in searching for a bomb in case of suspected sabotage and for inspecting aircraft for concealed weapons, explosives or other dangerous devices when a well-founded suspicion exists that the aircraft may be the object of an act of unlawful interference. The

checklist shall be supported by guidance on the appropriate course of action to be taken should a bomb or suspicious object be found and information on the least-risk bomb location specific to the aircraft. The aircraft search procedures checklist shall be reviewed to ensure it meets the requirements of the CAD 6.

6.3.6.13 ***Operational control procedures, dispatch, flight monitoring, etc*:** The operations manual is required to contain the details of the applicant's operational control procedures and procedures for dispatch and flight monitoring. It shall cover procedures for use in emergency situations and all communication procedures. Detailed procedures for the review and approval of operational control procedures are contained in CAD Part 1 and 3 as applicable and Chapter 16.

6.3.6.14 **The operations manual shall contain procedures for limiting the flight time and flight duty periods and providing adequate rest periods for flight and cabin crew members:** These procedures are included in the operations manual and will be in accordance with the CAD 1901.

6.3.7 ***Security programme manual**:* This manual shall describe the operator security programme, which shall meet the requirements of the national civil aviation security programme of Malaysia. The manual shall include the security procedures applicable to the type of operations. Procedures for the review of the security manual are not contained in this Guidance Material as this review will be completed by the Aviation Security (AVSEC) Division in the CAAM.

6.3.8 ***CAME:*** This manual sets out the applicant's intentions and procedures with regard to maintaining the airworthiness of the aircraft used, during their operational life. This applies whether or not the applicant for an AOC also intends to apply for approval as an AMO or intends to contract out maintenance to an AMO.

6.3.9 ***Aircraft maintenance programme, including maintenance schedule***: An aircraft maintenance programme is required for individual aircraft, taking into account the requirements of the type design authority. The aircraft maintenance programme of each individual aircraft is approved by the CAAM if Malaysia is the State of Registry or accepted by the CAAM when the aircraft is registered in another State.

6.3.10 ***Plan for emergency evacuation demonstration:*** The applicant needs to have a plan for demonstrating aircraft evacuation. Evacuation demonstrations carried out by the aircraft manufacturer or other operator for the same type and model of aircraft may be taken into account by the CAAM when a decision is made on the actual demonstration required. A description of the emergency equipment installed on the aircraft needs to be attached to the plan.

6.3.11 ***Plan for ditching demonstration:*** Where over-water flights are included in the proposed operation, the applicant needs to have a plan to demonstrate ditching

equipment and the ability to carry out ditching procedures including the preparation of passengers, aircraft and ditching equipment.

6.3.12 ***Plan for demonstration flights:*** Where demonstration flights are required, a plan for these demonstration flights shall be prepared so that the applicant can demonstrate the ability to operate and maintain aircraft and conduct the type of operation specified. The determination as to whether or not demonstration flights will be required, and if such flights are required, their number and type, will depend on the CAAM's assessment of the capabilities of the operational systems established by the applicant.

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7 Operational Demonstration and Inspection Phase

7.1 General

7.1.1 MCAR 2016 require an applicant to demonstrate the ability to comply with regulations and safe operating practices before beginning revenue operations. These demonstrations will include actual performance of activities and/or operations while being observed by inspectors of the certification team. This will also involve on-site evaluations of aircraft maintenance equipment and support facilities. During these demonstrations and inspections, the CAAM evaluates the effectiveness of the policies, methods, procedures and instructions as described in the manuals and other documents developed by the applicant. During this phase, emphasis should be placed on the applicant's management effectiveness. Deficiencies shall be brought to the attention of the applicant in writing, and corrective action shall be taken before an AOC can be issued.

7.1.2 The preliminary assessment of the application, as described in Chapters 4 and 5, should provide the CAAM with a general appreciation of the scope of the proposed operation and the potential ability of the applicant to conduct it safely. However, before authorising the issuance of the AOC, the CAAM will need to thoroughly investigate the operating ability of the applicant. This important and more detailed phase of the investigation and assessment will require the applicant to demonstrate thorough, day-to-day administrative and operational capabilities, including, in some cases, proving flights over proposed routes, the adequacy of facilities, equipment, operating procedures and practices, and the competence of administrative, flight and ground personnel. Demonstration flights may include any aspect to be covered by a special authorisation in the operations specifications which will be associated with the AOC when issued. Training or positioning flights observed by a CAAM inspector may be credited towards meeting demonstration flight requirements.

7.1.3 The operational aspects demonstration and inspection phase shall encompass all aspects of the proposed operation. However, such matters as the inspection of the passenger services organisation, though necessary, is not covered in this Guidance Material.

7.1.4 Precise details of inspections will be determined by many factors, such as the nature, scope and geographical areas of operations, the type of airborne and ground equipment to be used and the method of operational control and supervision. Many of the inspections required for initial certification or addition of a new aircraft type will subsequently be conducted as part of the CAAM surveillance plan.

7.1.5 It will also be necessary to ascertain that facilities located in other States, which are to be utilised, are adequate. As the CAAM licences are fully compliant with ICAO Annex 1 — *Personnel Licensing* requirements, they are acceptable to other States where operations will take place.

7.2 Organisation and Administration

7.2.1 During the operational demonstration and inspection phase, the applicant's organisational structure, managerial style, direction and philosophy will be evaluated to ensure that necessary and proper control can be exercised over the proposed operation. A sound and effective management structure is essential; it is particularly important that the operational management should have proper status in the applicant's organisation and be in suitably experienced and competent hands. Through discussions with key management personnel and through observation, the CAAM certification team will evaluate the appropriateness of the management structure and determine whether or not clear lines of authority and specific duties and responsibilities of subordinate elements and individuals are established. These duties and responsibilities need to be clearly outlined in the applicant's operations and CAME and other company documents. It should also be determined that acceptable processes are established for conveying company procedures and operating instructions to the personnel involved to keep them appropriately informed at all times. The authorities, tasks, responsibilities and relationships of each position need to be clearly understood and followed by the individuals occupying these positions.

7.2.2 At all levels, it is necessary that the applicant's personnel are thoroughly integrated into the operation and are made fully aware of the channels of communication to be used in the course of their work and of the limits of their authority and responsibility.

7.2.3 The applicant's staffing level needs to be evaluated to determine whether an adequate number of personnel are employed at management and other levels to perform the necessary functions. The number and nature of personnel will vary with the size and complexity of the organisation. Through a sampling questioning process, the CAAM certification team will determine whether or not management personnel are qualified, experienced and competent to perform their assigned duties.

7.2.4 Experience has shown that the quality of an operation is directly related to the standards maintained by its management. Competent management usually results in safe operations. An excess of managers can lead to fragmentation of responsibility and control and to as much difficulty and inefficiency as a shortage. Either case can result in a lowering of operational standards. Thus, the evaluation of an applicant's organisation is a very significant phase of the certification inspection process. Once it has been determined that the applicant's organisation is adequately staffed and managed, a detailed examination of the organisation shall be initiated, and the suitability and use of the associated operations manual and CAME shall be assessed.

7.3 Ground Operations Inspection

7.3.1 General

7.3.1.1 The purpose of this phase of the certification inspection is to ascertain, through on-site inspections, the adequacy and suitability of the applicant's staffing, training programme, ground equipment, facilities and procedures to conduct the operations specified in the application.

7.3.1.2 The inspection of maintenance facilities and procedures is part of the ground inspection and will be carried out separately by airworthiness inspectors who are part of the CAAM certification team

7.3.1.3 Detailed procedures for the conducting of ground operations inspection other than maintenance facilities are contained in CAD Part 6010.

7.3.2 Flight crew qualifications, licensing and training

7.3.2.1 The applicant/operator shall establish procedures and training programmes to ensure that flight crew qualifications meet the requirements and that personnel are duly licensed and hold appropriate and valid ratings in accordance with the MCAR 2016. Detailed procedures are outlined in Chapter 13.

7.3.3 Cabin crew competency and training

7.3.3.1 The applicant/operator shall establish a training programme to ensure that cabin crew members are competent in executing those safety duties and functions to be performed in the event of an emergency including a situation requiring emergency evacuation. Detailed procedures are outlined in Chapter 13.

7.3.4 Training programmes

7.3.4.1 The training programme shall be described in detail either in the operations manual or in a training manual which, whilst it will form part of the operations manual, will be issued as a separate manual. The choice will generally depend upon the extent of the operations and the number and types of aircraft in the operator's fleet. Most applicants find it convenient to set forth their training programmes in a training manual of one or more volumes to facilitate easy application and updating. Depending on the scope and complexity of the proposed operation, the training programmes required by the MCAR 2016 may be carried out under the direct control of the applicant or conducted by other training facilities under contract to the applicant, or a combination thereof. In any event the CAAM certification team will need to carry out a thorough analysis and inspection of all phases of the applicant's ground and flight training programmes. This analysis and inspection should permit a determination as to whether the training methods, syllabi, training aids/devices, training standards, related facilities and record keeping are adequate. The qualifications of ground and flight instructor personnel shall be established and their effectiveness evaluated. Detailed procedures are outlined in Chapter 13.

7.3.5 Record keeping

7.3.5.1 In accordance with MCAR 2016, operators are required to maintain certain records pertaining to the conduct of the operations for a specified period. The procedures for record keeping will be evaluated as part of the certification inspection process to indicate the manner in which records will be kept and whether or not such recording will be conducted in compliance with relevant regulations. Detailed procedures are outlined in CAD 6 Part 1 and 3 as applicable and Appendix 10 – Table of Record Retention.

7.3.6 Fuel computation procedures

7.3.6.1 The objective of this inspection is to determine whether the applicant's aircraft will be dispatched with adequate fuel loads calculated in accordance with regulations and the policy set forth in the operations manual. To make this determination, the fuel computation policy and sample operational flight plans for flights to be dispatched from different bases on routes and route sectors calling for wide differences in fuel requirements and including sectors on which aircraft fuel capacity is critical, shall be examined and the fuel to be carried validated against expected aircraft performance, with appropriate corrections for wind conditions and flight levels en-route.

7.3.6.2 The fuel policy shall consider the additional fuel necessary to proceed to an adequate aerodrome in the event of failure of one engine or loss of pressurisation, at the most critical point while en-route, whichever is higher.

7.3.7 Aircraft mass and balance procedures

7.3.7.1 This part of the inspection is to ascertain that aircraft will be safely and correctly loaded and to investigate the applicant's method of exercising overall mass control. The CAAM inspector shall examine the system and methods whereby aircraft mass is checked and maintained to ensure that mass fluctuations due to modifications and other causes are fully taken into account and that the mass statement is accurate.

7.3.8 Ground inspection deficiencies

7.3.8.1 Unsatisfactory conditions noted by the CAAM certification team during the ground inspection will to be brought to the attention of the applicant for corrective action including any deficiencies affecting the safety of the operation before the commencement of any flight operations inspection. All discrepancies and items of non-compliance need to be corrected or resolved, with acceptable records of the corrective actions taken being kept, to the satisfaction of the CAAM certification team prior to the inauguration of commercial service.

7.3.9 Evaluation of passenger evacuation and ditching capability

7.3.9.1 Before an aircraft type and model can be used in commercial air transport passenger-carrying operations an actual full capacity emergency evacuation demonstration has been conducted to check the suitability of the emergency

equipment and to determine the maximum number of persons on board. All passengers must be evacuated from the aircraft within 90 seconds or less using 50% of the available doors. Subsequently, engineering analysis and historical data can be used to validate other passenger seating configurations. Prior to the import of an aircraft into Malaysia and issue of a Certificate of Airworthiness, the Airworthiness Division will conduct an interior inspection to ensure conformity to an approved interior configuration, emergency and safety equipment, and that there is documentation to confirm that the full capacity emergency evacuation has been completed satisfactorily. The Type Certification Data Sheet (TCDS) and Aircraft Flight Manual (AFM) will normally provide this information.

7.3.9.2 Emergency evacuation training and competency requirements for crew members are established in MCAR 2016. The applicant/operator shall establish a training programme that ensures that crew members are competent in executing those safety duties and functions to be performed in the event of an emergency evacuation. Detailed procedures related to training programme approval and monitoring are outlined in Chapter 13.

7.3.9.3 MCAR 2016 do not permit an operator to use an aircraft in extended flights overwater unless it has first demonstrated to the CAAM that the aircraft has the ability and equipment to carry out emergency ditching procedures. The Airworthiness Division will review the aircraft documentation to ensure that an aircraft intended to be used for extended flights overwater is certificated for ditching.

7.3.9.4 Ditching training and competency requirements for crew members are established in MCAR 2016. The applicant/operator shall establish a training programme that ensures that crew members are competent in executing those safety duties and functions to be performed in the event of a situation requiring ditching. Detailed inspection procedures related to training programme approval and monitoring are outlined in Chapter 13.

7.4 Flight Operations Inspection

7.4.1 Following the ground operations phase of the inspection programme prior to certification, it may be necessary, particularly in the case of new operators, to carry out a series of inspections in the course of flight. Such inspection flights provide an opportunity for the applicant to demonstrate the ability to carry out the proposed operations in accordance with applicable regulations. Passengers shall not be carried during inspection flights prior to certification and observer personnel on-board the aircraft shall be kept to a minimum. However, it is generally desirable for the applicant to have on-board company personnel who can take decisions and make commitments on behalf of the applicant concerning action to correct deficiencies.

7.4.2 The determination by the CAAM as to whether or not demonstration flights will be required, and if such flights are required, their number and type, will depend on the CAAM's assessment of the capabilities of the operational and maintenance systems established by the applicant. All demonstration flights are to be conducted using the methods and procedures proposed by the applicant in the formal application package. The following factors will be considered when determining the demonstration flight requirement:

a) to what extent is the new aircraft substantially different from an aircraft previously flown by the applicant's flight crew (such as changing from turboprop to turbojet, unpressurised to pressurised, or narrow body to wide body);

b) to what extent is the applicant's route structure affected by the request (for example, inauguration of international routes and use of special areas of operation);

c) what is the experience level of personnel involved in the operation (for example, flight and cabin crewmembers' previous experience in the operation of this type of aircraft);

d) how does the applicant propose to conduct the proving flights (for example, a few long-range versus several short-range flights); and

e) what level of management experience exists in the company with this type or similar type or make of aircraft.

7.5 Demonstration (Proving) Flights

7.5.1 Background and Objectives

7.5.1.1 Refer to paragraph 7.4.2 for how to determine whether or not demonstration flights will be required, and if such flights are required, their number and type. The plan for demonstration flights will have been prepared and approved by the CAAM during the document review phase of the certification process and is based on the CAAM's assessment of the capabilities of the operational and maintenance systems established by the applicant. The following procedures outline how CAAM will implement the plan if demonstration flights are required.

7.5.1.2 A team leader will be assigned to lead the demonstration flight and shall be one of the inspectors from the review team. He shall be responsible for the conduct, coordination and evaluation of the test. The team shall as a minimum include flight operation(s) and airworthiness inspector(s).

7.5.1.3 The demonstration flights are designed to determine prior to the issuance of the AOC that the applicant is capable of operating and maintaining each aircraft type which he proposes to use in accordance with the CAAM requirements. During these inspections, the CAAM inspector will observe and evaluate the in flight operations within the total operational environment of the air

transportation system. In the course of demonstration flights, paying passengers will not be carried. However, it is desirable for the applicant to have on board company officials who can make decisions and commitments on behalf of the applicant concerning actions to correct deficiencies.

7.5.1.4 The applicant and the CAAM inspectors shall plan well in advance for the conduct of the demonstration flights. All concerned must have a clear understanding and agreement as to what must be accomplished by the applicant to show compliance with the applicable operating regulations. General objectives for pre-certification demonstration flights shall include the determination of the adequacy of:

a) in flight procedures laid down in the operations manual and compliance with those procedures;

b) the facilities and equipment provided to the flight crew to conduct the flight safely and in accordance with regulations;

c) the support provided by the operational control system to the flight crew;

d) the general provision made for ground handling of the aircraft and assisting the flight crew to carry out their duties at all aerodromes utilised by the applicant along the routes; and

e) en-route facilities.

7.5.1.5 Demonstration flights are operated exactly as though the applicant is conducting revenue operations. However, during the course of the flights the CAAM inspector may introduce simulated situations which will require appropriate responses by crew members and ground personnel.

7.5.1.6 Provided that flights are conducted in accordance with the applicable commercial air transport regulations and air operator procedures, the types of flights that can be credited towards demonstration flight requirements are described in the following sub-paragraphs:

a) Representative en-route flights. Before an applicant may conduct these flights, the test team must be satisfied that the document review phase has been completed.

b) Positioning or delivery flights. Positioning or delivery flights approved by the CAAM may be credited towards demonstration flight requirements.

c) Training flights. With the approval of the CAAM training flights may be credited towards demonstration test requirements, provided that a CAAM inspector observes each flight.

7.5.2 Specific Procedures

7.5.2.1 Well before the demonstration flights (during the pre-application phase of the certification process) the CAAM will have briefed the operator regarding the necessity for demonstration flights (if such flights are required), what must be accomplished and the areas which will be evaluated. Subsequently, during the document review phase the aircraft demonstration plan and schedule will have been submitted to the CAAM for approval.

7.5.2.2 Unsatisfactory conditions noted by the CAAM inspectors during any part of the demonstration inspection shall be brought to the attention of the applicant in writing for corrective action. The opportunity shall be provided for the applicant to remedy any deficiencies affecting the safety of the operation before any further flights are undertaken. All discrepancies and items of non-compliance need to be corrected or resolved, with acceptable records of the corrective actions taken being kept, to the satisfaction of the CAAM certification team prior to the inauguration of commercial service. Some examples of deficiencies requiring corrective action are:

a) flight crew member not properly trained, e.g. assistance from applicant supervisors or a CAAM inspector required;

b) flight crew member not familiar with aircraft, systems, procedures or performance;

c) cabin crew member not properly trained in emergency evacuation procedures or in the use of emergency equipment or not familiar with the location of that equipment;

d) numerous aircraft deficiencies and/or system malfunctions;

e) inadequate mass and balance or load control;

f) unsatisfactory operational control, e.g. improper flight planning and maintenance release procedures;

g) unacceptable maintenance procedures or practices; and/or

h) improper aircraft servicing and ground handling procedures.

7.5.2.3 After the demonstration flights are completed, the operator will be provided with a detailed de-briefing and will be informed whether or not his overall performance was satisfactory or unsatisfactory. This will be followed with a letter detailing the same information.

8 Demonstration and Inspection Phase (Continuing Airworthiness Management Aspects)

8.1 General

8.1.1 As part of the requirements described in paragraph 7.1.1 and 7.1.2, the applicant (operator) is required to demonstrate that an organisation with the necessary qualified staff, equipment and facilities is set up and responsible for ensuring that the aircraft remain in an airworthy condition for the duration of their operational life. This is also referred to as managing the continuing airworthiness of the aircraft.

8.1.2 In the case of an applicant seeking authority to operate leased aircraft registered in a different State, suitable arrangements must be made between Malaysia and the State of Registry regarding responsibility for the continuing airworthiness of the aircraft. (See Chapter 10 on the leasing of aircraft).

8.2 Continuing Airworthiness Management Organisation

8.2.1 The CAAM inspector shall determine that the structure of the applicant's maintenance control system is set forth, clearly delineating duties and responsibilities for all key personnel including the manager(s) for engineering and maintenance. The names of all incumbents shall be listed. The details of the organisational structure shall be included as a part of the CAME and, if necessary, also promulgated separately.

8.3 Continuing Airworthiness Management Exposition (CAME)

8.3.1 Airworthiness Notice require the applicant to prepare an acceptable CAME for the use and guidance of maintenance organisation personnel. The operator needs to ensure that the CAME is revised as necessary to keep the information contained therein up-to-date. Copies of all revisions will be furnished promptly to all organisations or persons to whom the manual has been issued. Accordingly, one of the first steps in the continuing airworthiness management assessment is a thorough analysis of the CAME, the correction of any discrepancies and the tentative acceptance by the CAAM inspector. During the course of the continuing airworthiness management assessment, by qualified CAAM airworthiness inspectors, shall determine that the provisions of the CAME are in place.

8.3.2 The details in and number of volumes of the CAME will vary depending upon the type, complexity and number of aircraft involved.

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9 Certification Phase

9.1 Final preparation for the issuance of an AOC

9.1.1 The PM will notified the applicant in writing of all discrepancies that need to be resolved before an AOC and its associated operations specifications can be issued.

9.1.2 An AOC will not be issued until the CAAM is satisfied that the operator has demonstrated compliance to all the applicable requirements stated in CAD 6004.

9.2 Issuance of an AOC and the associated Operations Specifications

9.2.1 The CAAM shall assign an AOC number and determine the date of issuance. The certificate and associated operations specifications shall be signed by the CAAM official responsible for its issuance.

9.2.2 The layout and the content required for an AOC are provided in Appendix 3 – Layout of an Air Operator's Certificate (AOC). The layout, content and further guidance on the content for the associated operations specifications are provided in Appendix 4 – Layout of an Operations Specification.

9.3 Period of validity of an AOC and the associated Operations Specifications

9.3.1 An AOC and associated operations specification are valid up to a maximum of five (5) years. For the initial grant of an AOC, the period of validity shall be one year (1). The date of issuance and an expiry date are to be entered on the AOC.

9.3.2 In general, an AOC or any portion of an AOC issued by the CAAM remains valid until:

a) the CAAM suspends or revokes the certificate;

b) the AOC holder surrenders the certificate to the CAAM;

c) the AOC holder suspends operations for more than 6 months; or

d) the expiry date, as applicable.

9.4 Identification of individual aircraft by nationality and registration marks

9.4.1 Operations specifications include designation of the make, model and series (or master series) of the aircraft that are to be used.

9.4.2 In accordance with the standard format for the operations specifications, the nationality and registration marks of individual aircraft is not included. It is essential that information on the identification of individual aircraft, used by an operator for a particular operation, is maintained up to date and documented in the operations manual.

9.5 Amendments to the AOC and the Operations Specifications

9.5.1 Any subsequent changes to the operation specified or to the equipment approved for use may necessitate amendments to the operations specifications. It is appropriate that an AOC will itself be a very basic document and that all aspects of the operation that might be the subject of certification changes would be dealt with in the associated operations specifications which would evolve with the operation.

9.5.2 The process for the amendment of operations specifications will be similar to the original certification process, with the exception that in many cases it will be far less complex, dependent upon the subject of the change that necessitates the amendment. Where changes involve new types of operation, new geographical areas or new aircraft, the appropriate level of complexity will have to be applied to the process. Refer to CAD 6004 for details on variation to existing AOC.

9.6 Renewal of an AOC

9.6.1 The continued validity of an AOC is dependent upon an operator maintaining the applicable requirements laid out in CAD 6004 consistent with the nature and extent of the operations specified in the AOC and the associated operations specifications, under the supervision of the CAAM.

9.6.2 The CAAM will conduct continuing surveillance of the operator to continuously determine that the AOC remains valid.

9.6.3 The operator needs to apply for renewal of the AOC four (4) months prior to the expiration date and the request for renewal shall include any desired changes to the basic information that was submitted prior to the original certification and during the ongoing operations. Such renewal does not involve a complete recertification and procedure and thus will not be an onerous or prolonged process, because of the continuing surveillance exercised by the CAAM.

10 Leasing/Charter

10.1 Leasing

10.1.1 Detailed information with regards to leasing can be found in CAD 6014 Leasing.

10.2 Charter Operations

10.2.1 The following section provide guidance to operators when seeking approval for charter operations.

a) ***Letter of Request and Application Form:*** A letter of request shall be submitted to the CAAM requesting for approval of intended flight. Once the approval is granted, an application shall be made to CAAM using the charter operations form requesting for approval of the intended flight. The required form can be downloaded from the CAAM website using the following link (Charter Form).

b) ***Supporting Documents:*** The operator is required to submit documented evidence as follows:

1) To Airworthiness Division:

i) Maintenance Agreement with Approved Maintenance Organisation or Foreign Approved Maintenance Organisation (AMO/FAMO) or Engineer on Board (EOB);
ii) Arrangement on Maintenance Data;
iii) Arrangement on Tools and Equipment;
iv) Arrangement on Aircraft spares;
v) Maintenance activities expected;
vi) Maintenance activities expected; and
vii) Latest risk assessment.

Note. – If the airport(s) of intended operations are listed in Operational Specifications (OM-C), then items ii) through vii) can be omitted.

2) To Flight Operation Division:

i) Ground handling agreement at the intended destination airport;
ii) Latest risk assessment;
iii) Charts of destination, alternate and enroute alternate airports;
iv) Airways charts for the intended routes; and
v) Operational Flight Plans for the intended routes.

Note. – If the airport(s) of intended operations are listed in Operational Specifications (OM-C), then items ii) through v) can be omitted.

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11 Air Operator SMS Manual

11.1 Background and Objectives

11.1.1 MCAR 2016, Part XXIII requires a commercial air transport operator to implement a safety management system (SMS) acceptable to the CAAM.

11.1.2 MCAR 2016, Part XXIII also outlines the framework for the implementation and maintenance of an SMS and provides for the SMS to commensurate with the size of the air operator and the complexity of its operations. Some elements of SMS are quite complex, thus effective implementation of a SMS by an operator will typically take several years. Nevertheless, the framework for the implementation and maintenance of an SMS must be established and made acceptable to the CAAM during the initial certification of an air operator. The objective of this chapter is to provide guidance and direction to determine the acceptability of the air operators' safety management system. This applies also to existing air operators that are implementing the SMS.

11.2 General SMS review and acceptability

11.2.1 Determining the acceptability of a SMS is an important part of the overall certification process. The certification team or some of its members designated by the PM (hereinafter referred to as the Team) will complete a review exercise of the applicant's organisation in accordance with the procedures described in this section. The review exercise is a two-part process comprising of a documentation review and an on-site review. Its purpose is to confirm that elements of the SMS are documented, in place and ready to be used. The exercise does not test the effectiveness of the system.

11.3 Safety Management System (SMS)

11.3.1 This 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

11.3.2 Safety policy and objectives

11.3.2.1 Management commitment and responsibility

11.3.2.1.1 In accordance with CAD 6004, the safety policy includes:

a) reflect organisational commitment regarding safety;

b) include a clear statement about the provision of the necessary resources for the implementation of the safety policy;

c) include safety reporting procedures;

d) 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;

e) be signed by the accountable executive of the organisation;

f) be communicated, with visible endorsement, throughout the organisation; and

g) be periodically reviewed to ensure it remains relevant and appropriate to the operator.

11.3.2.2 Safety accountabilities

11.3.2.2.1 The operator should:

a) identify the accountable executive who, irrespective of other functions, has ultimate responsibility and accountability, on behalf of the organisation, for the implementation and maintenance of the SMS;

a) clearly define lines of safety accountability throughout the organisation, including a direct accountability for safety on the part of senior management;

b) 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;

c) document and communicate safety responsibilities, accountabilities and authorities throughout the organisation; and

d) define the levels of management with authority to make decisions regarding safety risk tolerability. Appointment of key safety personnel

11.3.2.3 Coordination of emergency response planning

11.3.2.3.1 The operator should ensure that an emergency response plan is properly coordinated with the emergency response plans of those organisations it must interface with during the provision of its products and services.

11.3.2.4 SMS documentation

11.3.2.4.1 The operator's SMS implementation plan, formally endorsed by the organisation should define the organisation's approach to the management of safety in a manner that meets the organisation's safety objectives.

11.3.2.4.2 The SMS documentation should describe the operator's:

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

11.3.3 Safety risk management

11.3.3.1 Hazard identification

a) The operator should develop and maintain a process that ensures that hazards associated with its aviation products or services are identified.

a) Hazard identification should be based on a combination of reactive, proactive and predictive methods of safety data collection.

11.3.3.2 Safety risk assessment and mitigation

11.3.3.2.1 The operator should develop and maintain a process that ensures analysis, assessment and control of the safety risks associated with identified hazard

11.3.4 Safety assurance

11.3.4.1 Safety performance monitoring and measurement

a) The operator should develop and maintain the means to verify the safety performance of the organisation and to validate the effectiveness of safety risk controls.

b) The operator's safety performance should be verified in reference to the safety performance indicators and safety performance targets of the SMS.

11.3.4.2 The management of change

11.3.4.2.1 The operator should 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.

11.3.4.3 Continuous improvement of the SMS

11.3.4.3.1 The operator should monitor and assess the effectiveness of its SMS processes to enable continuous improvement of the overall performance of the SMS.

11.3.5 Safety promotion

11.3.5.1 Training and education

a) The operator's safety training programme should ensure that personnel are trained and competent to perform their SMS duties.

b) The scope of the safety training programme should be appropriate to each individual's involvement in the SMS.

Note: - More information on the SMS Manual can be found in CAD 19.

11.3.5.2 Safety communication

11.3.5.2.1 The operator should develop and maintain a formal means for safety communication that:

a) ensures personnel are aware of the SMS to a degree commensurate with their positions;

b) conveys safety-critical information;

c) explains why particular safety actions are taken; and

d) explains why safety procedures are introduced or changed.

Note: - More information on the SMS Manual can be found in *CAD 19.*

11.4 SMS assessment

11.4.1 For those air operators implementing SMS through a phased implementation acceptable to CAAM, the minimum acceptable performance procedure illustrated in the Corrective Action Notice of Table Attachment B – SMS Initial Review Guide provides for a three-stage minimum acceptable score criteria. Twelve months following the initial AOC issuance the operator shall undergo a full SMS assessment using the review guide contained in Attachment B – SMS Initial Review Guide. This will be followed up 12 months later by another SMS assessment using the review guide contained in Attachment B – SMS Initial Review Guide.

11.4.2 Thereafter, or after the initial SMS review for those air operators implementing a full SMS when applying for an AOC, the SMS oversight will be integrated into the CAAM surveillance plan, using the routine review guide contained in Attachment C – SMS Routine Review Guide.

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12 Minimum Equipment List (MEL) and Configuration Deviation List (CDL)

12.1 General

12.1.1 MEL procedures were developed to allow the continued operation of an aircraft with specific items of equipment inoperative under certain circumstances. For particular situations, an acceptable level of safety can be maintained with specific items of equipment inoperative for a limited period of time, until repairs can be made.

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

12.1.3 MEL acceptability

12.1.3.1 The general criteria for MEL acceptability are as follows:

a) ***Equally or more restrictive***. The operator's MEL must not be less restrictive than the MMEL, the MCAR, operations specifications, the approved flight manual limitations, certification maintenance procedures, or airworthiness directives (AD).

b) ***Appropriate***. The MEL must be appropriate to the individual aircraft make and model. It should take into account the service bulletins implemented and the equipment installed.

c) ***Specific***. The operator's operations ("O") and maintenance ("M") procedures must be specific to the aircraft and the operations conducted.

12.1.4 The MEL and any amendment shall be approved by the CAAM.

12.1.5 In addition to the list of items, the MEL shall contain:

a) *cover page.* The MEL cover page contains the operator's name and the make and model of the aircraft to which the MEL applies;

b) *table of contents*. The table of contents contains a list of all of the sections in the MEL by title and the corresponding page identification (usually a page number);

c) *log of revisions*. The log contains the revision identification (usually a number) and date of the revision. It may also contain a list of the revised pages, a block for the initials of the person posting the change and additional enhancements for use by the operator;

d) *preamble*. The standard MMEL preamble section must be reproduced word for word in each MEL without modification including guidance and definitions for flight crews and maintenance personnel using the MEL;

e) *definitions*. The standard MMEL definitions section must be reproduced word for word in each MEL without modification;

f) *control page*. The control page is used as a method for keeping track of the status of the MEL and includes a record of the revision status or the date of each page of the operator's MEL. It will also be used as a means of conveying CAAM approval of the MEL. The control page is also referred to as the "List of Effective Pages"; and

1) At a minimum, the control page must contain the following:

i) the operator's name;
ii) a listing of all of the pages in the MEL (including the date of each page and its page number or revision number);
iii) the MMEL revision number on which the MEL is based;
iv) a signature block containing space for signature of the FOI and for the date of approval;
v) *optional contents*. The operator may include additional information on the control page to provide flexibility and additional approval functions; and
vi) *highlights of change page (optional)*. This page contains a synopsis of the changes made by the operator in each revision.

g) the scope, extent and purpose of the MEL.

12.2 Definitions

b) ***MMEL review board*** means in conjunction with the certification of each new type of aircraft, a board should be established to develop and maintain the MMEL for the aircraft and additional models of that aircraft developed in the future. The board is an advisory body to the CAA of the State of design and should have representation from the flight operations and airworthiness organisations within the CAAM, as well as from the organisation responsible for the type design and air operators.

Note: — specific name utilised for the review board will vary amongst the different States of Design but the function is essentially the same.

c) ***Aircraft flight manual (AFM)*** means a manual, associated with the certificate of airworthiness, containing limitations within which the aircraft is to be considered airworthy and instructions and information necessary to the flight crew members for the safe operation of the aircraft.

Note: — The State of Registry may either accept the AFM approved by the State of design or approve its own which could be different due to differences in its airworthiness requirements. If the State of registry approves the AFM, that AFM should not be less restrictive than the one approved by the State of Design.

d) ***Aircraft maintenance manual (AMM)*** means the AMM is the source document for aircraft maintenance procedures. The term AMM can apply to either an

aeroplane or a rotorcraft manual. The AMM is developed as part of the aircraft certification process.

e) ***Air Transport Association of America (ATA) Specification 100/2200*** means ATA Specification 100, Manufacturer's Technical Data, is an international industry numbering standard developed to identify systems and components on different aircraft in the same format and manner.

f) ***Configuration deviation list (CDL)*** means a list established by the organisation responsible for the type design with the approval of the State of Design which identifies any external parts of an aircraft type which may be missing at the commencement of a flight, and which contains, where necessary, any information on associated operating limitations and performance.

g) ***Inoperative*** means that a system or component has malfunctioned to the extent that it does not accomplish its intended purpose and/or is not consistently functioning normally within its approved operating limits or tolerances.

h) ***Master minimum equipment list (MMEL)*** means a list established for a particular aircraft type by the organisation responsible for the type design with the approval of the State of Design containing items, one or more of which is permitted to be unserviceable at the commencement of a flight. The MMEL may be associated with special operating conditions, limitations or procedures.

Note: — The State of Registry may either accept the MMEL or approve its own which could be different due to differences in its airworthiness requirements. The MMEL accepted or approved by the State of Registry should not be less restrictive than the one approved by the State of Design.

i) ***Minimum equipment list (MEL)*** means a list which provides for the operation of aircraft, subject to specified conditions, with particular equipment inoperative, prepared by an operator in conformity with, or more restrictive than, the MMEL established for the aircraft type.

Note: — The MEL is derived from the MMEL and is applicable to an individual operator. The operator's MEL takes into consideration the operator's particular aircraft configuration, operational procedures and conditions. When approved and authorised for use, the MEL permits operation of the aircraft under specified conditions with certain inoperative equipment.

12.3 Purpose of MEL

12.3.1 MCAR 2016 permit the approval of an MEL in that compliance with all the aircraft equipment requirements is not necessary in the interest of safety for a particular operation. Through the use of appropriate conditions or limitations, the MEL provides for improved scheduled reliability and aircraft utilisation with an equivalent level of safety. This process is possible because of the installation of additional and redundant instruments, equipment and/or systems in present transport aircraft. Without an approved MEL, inoperative equipment would ground the aircraft until repair or replacement of the non-functioning equipment. An MEL

is for a specific make and model of aircraft and for a specific configuration and is approved by a stamp and/or signature from the CAAM inspector authorising its use by the operator.

12.4 Items listed on the MEL

12.4.1 *Categories of items*. There are three categories of items that may be contained in the operator's MEL:

a) MMEL items. The MEL will list all of the items for which the operator seeks relief and that are appropriate for its operation. The operator, by not listing at its discretion certain items in its MEL, may be more restrictive than permitted by the MMEL;

b) Passenger convenience items. The passenger convenience items, as contained in the operator's approved MEL, are those related to passenger convenience, comfort or entertainment such as, but not limited to, galley equipment, movie equipment, in-flight phones, stereo equipment, and overhead reading lamps. It is incumbent on the operator and the FOI to develop procedures to ensure that those inoperative passenger convenience items are not used. Passenger convenience items do not have fixed repair intervals. Items addressed elsewhere in the MMEL shall not be authorised relief as a passenger convenience item. "M" and "O" procedures may be required and shall be developed by the operator, approved by the FOI/PMI, and included in the air operator's appropriate document; and

c) Administrative control items. An operator may use an MEL as a comprehensive document to control items for administrative purposes. In such cases, the operator's MEL may include items not listed in the MMEL; however, relief may not be granted for these items unless conditions and limitations are contained in approved documents other than the MMEL or meet the regulatory requirements of Malaysia. An example of items considered to be administrative control items would be cockpit procedure cards.

12.5 Timely repair of items that are inoperative

a) Operator's responsibility. The MEL is intended to permit the operation of an aircraft with certain inoperative items for a limited period of time until repairs can be accomplished. The operator is responsible for establishing a controlled and effective repair programme.

b) Repair interval. Operators must make repairs within the time period specified by the MEL. Although the MEL might permit multiple days of operation with certain inoperative equipment, operators must repair the affected item as soon as possible.

c) Day of discovery. The day of discovery is the calendar day an equipment malfunction was recorded in the aeroplane technical log or record. This day is excluded from the calendar days or flight days specified in the MMEL for the

repair of an inoperative item of equipment. This provision is applicable to all MMEL items such as categories “A”, “B”, “C” and “D”. The operator and the FOI must establish a reference time in which the calendar day or flight day begins and ends 24 hours later. This reference time is established to ensure compliance with timely repair of equipment and items.

d) MMEL definitions. More than one set of MMEL definitions exist due to years of evolving changes during which not all MMELs have been updated to the latest revision of the definitions. However, only the most up-to-date set of definitions may be used with a specific MMEL. Only certain portions of the latest definitions may be appropriate for a specific air operator's MEL.

e) Continuing authorisations. The State of the Operator may authorise an experienced operator of an approved MEL to use a documented continuing authorisation process to approve extensions to the maximum repair interval for category “B” and “C” items, provided the CAAM is notified within 24 hours of the operator’s exercise of extension authority. This process should require coordination with the quality manager. The certificate holder is not authorised to extend the maximum repair time for category “A” items, as specified in the approved MEL. Misuse of the continuing authorisation process may result in the CAAM removing the operator’s authority to use an MEL.

12.6 Record keeping

12.6.1 When an item of equipment becomes inoperative, the operator must report it by making an entry in the aircraft technical log, as prescribed by the MCAR 2016, with reference to the relevant MEL numbering, date of the day of discovery and MEL repair interval.

12.7 Multiple items that are inoperative

12.7.1 Individual MEL requirements are designed to provide coverage for single failures en-route. When operating with multiple inoperative items, the operator shall consider the interrelationships between those items and the resulting impact on safety, and the effect on aircraft operation and crew workload, including consideration of a single additional failure occurring en-route. If acceptable, the aircraft can be dispatched under the MEL with those inoperative systems.

12.8 Fleet approval

12.8.1 An operator who has a single MEL for multiple aircraft may reflect equipment in its MEL that is not installed on all aircraft in its fleet. In this case, the item’s title in the operator’s MEL need not reference any specific aircraft identification (usually registration marks) unless the operator determines that there is need to do so. The installed number of items must be identified for each airframe (the remarks column of the MEL can be used for that). The list of aircraft for which the MEL is applicable should be part of the MEL content.

12.9 Access to MEL

12.9.1 The MCAR 2016 requires that the MEL is carried aboard the aircraft or that the flight crew has direct access to the MEL information prior to flight. Other means of direct access require approval.

12.10 Conflict with other CAAM approved documents

12.10.1 The MEL may not conflict with other CAAM approved documents such as the approved flight manual limitations and airworthiness directives. The operator's MEL may be more restrictive than the MMEL, but under no circumstances may the operator's MEL be less restrictive.

12.11 Acceptable sources of MMELs

a) Source MMELs policy. CAAM shall generally accept MMELs approved by the regulatory authority of the State of Design unless differences in its airworthiness requirements dictate a more restrictive MMEL. Operators are to incorporate source MMEL amendments as soon as they are available. CAAM is to be informed immediately of subsequent amendment. In addition, CAAM shall establish a system to be notified by the manufacture or State of Design of any amendment to a MMEL. The amendment to an operator MEL is to be submitted to the CAAM for approval prior to usage.

b) Third country MMEL. CAAM will not normally accept a MMEL produced by a third country (an example would be a U.S. MMEL for a European aircraft). However, exceptions may be made, particularly for older aircraft, if no other source is available or to enable for an air operator to have a consistent relief for different aircraft types.

12.12 MEL Use in Service

12.12.1 This section contains specific direction, guidance, and procedures for the revision, administration, and policy application for administering MELs that have been approved for use by operators operating under the provisions of the MCAR 2016.

12.12.2 Revision procedures

a) Revisions to an MEL. Either the operator or the CAAM may initiate revisions to an operator's MEL. Operator initiated revisions may be equal to or more restrictive than the MMEL. It is not necessary for an operator to submit an entire MEL when requesting the approval of a revision. The minimum submission would consist of only the affected pages and a revised control page(s); the approval by the operations inspector (FOI) may only consist of specific items. These items are approved within a controlled process, and the operator will produce the final MEL document. If the revision results in individual pages either being added or deleted, a revised table of contents page is also required.

b) MEL revision initiated by an operator. An operator-initiated MEL revision will normally fit into one of the following three categories:

1) Items not requiring an MMEL change. Operators may propose changes to an MEL that are equal to, or more restrictive than, the MMEL. These revisions are approved by the FOI using the same procedures, as those required for an original MEL approval;
2) Items resulting from or requiring an MMEL change. Operators may request changes to an MEL that are less restrictive than the MMEL. However, the MEL cannot be revised until the MMEL has been revised to permit the proposed MEL change. The most common instance of a revision request of this type occurs when an operator installs additional equipment on an aircraft and provisions for that equipment are not included on the current MMEL; or
3) Major aircraft modifications. Major aircraft modifications, such as a supplemental type certificate (STC), a major alteration or a type certificate (TC) amendment, may invalidate the MEL for that aircraft. Operators shall review the MEL to assess the impact of any planned modification and shall immediately notify the FOI of these modifications and the impact on the MEL. The FOI should obtain guidance from the State of Design, as applicable, to determine if a revision to the MMEL is required.
4) Change to operations. Operators may propose changes to an MEL as a result of a change to their operations, which may affect the relief in the MEL, either providing more or less relief, and may also require an amendment to the operations specifications; e.g., the start or discontinuation of long-distance overwater operations or a request for RVSM approval.

c) MEL revisions initiated by the CAAM. When the State of Design revises an MMEL, operators and manufacturers receive notification by printed or electronic means.

1) *Non-mandatory revision*. Some MMEL revisions only provide additional relief that are less restrictive than the operator's MEL and may be ignored by the operator. An example of a non-mandatory revision is when the MMEL has been revised to provide for optional equipment normally not installed on all aircraft of a particular type, such as logo lights. Operators that operate aircraft with logo lights may choose to revise the MELs, while operators operating without logo lights would not.
2) *Mandatory revisions*. Mandatory changes, which are more restrictive and may remove relief from the current MMEL, are reflected by the next successive change to the basic MMEL revision number itself. Any MMEL changes that are more restrictive than the operator’s MEL will be implemented by the operator as soon as possible. In some cases, when relief is removed from the MMEL, there will be a specific date for compliance or guidance for an acceptable date to be negotiated between the FOI and the operator.

3) *FOI initiated revision*. A FOI may initiate an MEL revision that is not based on a revision to the MMEL, ensuring that the MEL remains more restrictive than the MMEL. The FOI shall make such a request to the operator in writing, stating specific reasons why the revision is necessary. A FOI initiated revision may be made upon the discovery that an operator has modified an aircraft or that faulty maintenance or operations procedures exist. The FOI should work closely with the operator and make every effort to resolve the matter in a mutually agreeable manner. The operator shall be given a reasonable time period to make the required changes depending on whether safety of flight is affected.

d) Modifications within a fleet. If an operator has been granted approval to use the MEL for a fleet, and the operator installs a new piece of equipment in one or more aircraft, the operator may continue to operate that aircraft under the provisions of the currently approved MEL. The operator may not defer repair of the new item until an appropriate revision to the MEL has been approved.

12.12.3 Availability of MEL for flight crew members

12.12.3.1 Flight crew members must have direct access to the MEL at all times prior to flight. Although not required, the easiest method of compliance with this requirement is for the operator to carry the MEL aboard each aircraft. The operator may choose to use some system of access to the MEL other than the MEL document. The critical element in approving an alternate form of access is whether or not the flight crew has a direct means of access to the appropriate information in the MEL, in particular “O” and "M" procedures. Direct access shall not be construed to mean access through telephone or radio conversations with maintenance or other personnel. If the operator chooses to provide the flight crew with access to the MEL by other than printed means, the method must be approved in the operator's MEL programme.

12.12.4 Discrepancies discovered during flight

12.12.4.1 Use of the MEL is not applicable to discrepancies or malfunctions that occur or are discovered during flight. Once an aircraft moves under its own power, the flight crew should handle any equipment failure in accordance with the approved operations manual. A flight is considered to have departed when the aircraft moves under its own power for the purpose of flight. Discrepancies occasionally occur between the time the flight departs and the time it takes off. If the operations manual contains procedures for handling that discrepancy, and if the PIC deems that the discrepancy does not affect the safety of flight, the flight may continue. The discrepancy must be addressed prior to the next departure. For those operators who are required to use a flight dispatch procedure as part of their operational control, the PIC must handle a discrepancy that occurs after the issuance of the dispatch, but before the flight departs, in accordance with the MEL. The PIC must obtain a new or amended dispatch, as well as any required airworthiness release. This new or amended

dispatch must contain any applicable flight restrictions necessary for operation with any item of equipment that is inoperative.

12.12.5 Documentation of discrepancies

12.12.5.1 Provisions of the MMEL preamble require that an airworthiness release be issued or an entry be made in the aircraft technical log prior to conducting any operations with items of equipment that are inoperative.

12.12.6 Conflict with airworthiness directives (ADs)

12.12.6.1 Occasionally an AD may apply to an item of equipment that may be authorised to be inoperative under the MEL. The item may not simply be deferred under the MEL in order to avoid or delay compliance with the AD or a CAAM approved alternate means of compliance with the AD. In all cases, when an AD has been issued, the operator must comply fully with the terms of the AD or a CAAM approved alternate means of compliance with the AD. In other cases, the provisions of an AD may allow operation of the aircraft on the condition that certain items of installed equipment be used or be operable. In those cases, the affected items must be operable even though the MEL may provide for deferral of repair.

12.12.7 Interrelationships of inoperative components

12.12.7.1 When the MEL authorises a component of a system to be inoperative, only that component may be affected. When a system is authorised to be inoperative, individual components of that system may also be inoperative. Any warning or caution systems associated with that system must be operative unless specific relief is authorised in the MEL. The operator must consider the interrelationship of inoperative components. This consideration must include the following:

a) the interrelationship of one piece of equipment on another;

b) the crew workload;

c) the operation of the aircraft; and

d) the flight restrictions.

12.12.8 Repair categories

12.12.8.1 When an item of equipment becomes inoperative, and repair is deferred under an MEL, the operator must make repairs as specified by the associated repair category designator (“A”, “B”, “C” or “D”) and the operator’s MEL management system. In the event that more items are installed then those that are required for normal operation, the “C” repair category may be used. For example, if one altitude alerting system is required and the associated repair category is “B”, but there are two such systems installed, failure of the first system could be deferred as specified for a “C” category item (10 days). Failure of the remaining system would limit at least one system to the repair category for the “B”

category item (3 days). See the definitions section of the MMEL for an explanation of repair categories.

12.13 Configuration Deviation List (CDL)

12.13.1 General

12.13.1.1 This section contains information concerning the development and approval processes of configuration deviation lists (CDL). Transport aircraft may be approved for operations with missing secondary airframe and engine parts. Approval for operating with these parts missing would be authorised by the State of Design. Evaluation and approval of CDLs are functions of the State of Design.

12.13.2 CDL document

12.13.2.1.1 The CDL, once approved, is often incorporated into the limitations section of the aeroplane flight manual (AFM) as an appendix. For some manufacturers, the CDL may be a stand-alone document and part of the structural repair manual or another manufacturer's document. Some operators may choose to attach a copy of the CDL to their MEL for easy and ready reference by flight crews.

12.13.3 Use of a CDL

12.13.3.1 Operators must follow the CDL limitations when operating with a configuration deviation. Operators are required to observe the following:

a) the limitations in the CDL when operating with certain equipment missing;

b) the flight operations, restrictions or limitations that are associated with each missing airframe and engine part;

c) any placard(s) required by the CDL describing associated limitations, which must be affixed in the cockpit in clear view of the pilot in command (PIC) and other appropriate crew members.

12.13.4 CDL use approval

12.13.4.1 CAAM will ensure that operators comply with any applicable approvals for the use of the CDL, issued by the State of Registry and/or State of Design.

13 Training Programme – (Training Manual/Programme Guidelines)

13.1 Background and Objectives

13.1.1 MCAR 2016, Part X, requires an air operator to ensure that all operations personnel are properly instructed in their duties and responsibilities and the relationship of such duties to the operation as a whole. The air operator shall have a training programme manual approved by CAAM containing the general training, facilities and record keeping policies. Furthermore, training programmes for instructors who provide training programmes for instructors who provide training to operations personnel shall also have the approval of the CAAM.

13.1.2 For all operations personnel assigned to operational duties in connection with the preparation and/or conduct of a flight shall meet the respective requirements of MCAR 2016 Part X and CAD 1. An air operator may not use, nor may any person serve in a required crew member capacity or operational capacity unless that person meets the requirements established by the CAAM for that respective position

13.1.3 This chapter outlines the procedures and job aids that the CAAM inspectors will utilise having verified that all applicable regulations are addressed in the training programmes prior to providing the approval of an air operator's training programmes for the purpose of qualifying a crew member, or person performing operational control functions, for duties in commercial air transport.

13.2 Training Manual approval

13.2.1 The training programme should be described in detail either in the operations manual or in a training manual which, whilst it will form part of the operations manual, will be issued as a separate manual. The choice will generally depend upon the extent of the operations and the number and types of aircraft in the operator's fleet. Most applicants find it convenient to set forth their training programmes in a training manual of one or more volumes to facilitate easy application and updating. Depending on the scope and complexity of the proposed operation, the training programmes required by MCAR 2016 may be carried out under the direct control of the air operator or conducted by other training facilities under contract or a combination thereof. For flight crew members, the approved training contracted to another facility will be conducted in an approved training organisation and the flight documentation used reflect the air operators' flight safety documents system.

13.2.2 The training manual must be sufficiently detailed to cover all training and that the following are addressed:

a) Training policies and directives;

b) Administrative support of air operator;

c) List of designated instructors and line check examiners;

d) Comprehensive syllabi, including lesson plans for approved training;

e) Procedures for the conduct of examinations and manoeuvre tolerances;

f) Procedures to require that flight crew members are properly trained and examined on abnormal and emergency conditions;

g) Procedures for remedial training and subsequent examination of flight crew unable to achieve or maintain required standards; and

h) A process to obtain authority's approval for subsequent changes to the training manual.

13.2.3 Training syllabi and checking programmes for all operations personnel assigned to operational duties in connection with the preparation and/or conduct of a flight should be developed to meet the respective requirements of the CAAM. An air operator may not use, nor may any person serve in a required crew member capacity or operational capacity unless that person meets the training and currency requirements established by the CAAM for that respective position.

13.2.4 Flight Crew: The training syllabi and checking programmes for flight crew members should include:

a) a training programme approved by the CAAM that provides for familiarisation, initial, transition, upgrades, re-qualification, recency of experience, differences, recurrent training and other specialised training as appropriate, for flight crew members for each type of aircraft flown by that crew member. This training programme should include both standard operating procedures on normal and emergency procedures training applicable for each type of aircraft flown by the crew member;

b) adequate ground and flight training facilities and properly qualified instructors required to meet training objectives and needs;

c) a current list of approved training materials, equipment, training devices, simulators and other required training items needed to meet the training needs for each type and variation of aircraft flow by the air operator; and

d) a record system acceptable to the CAAM to show compliance with appropriate training and currency requirements.

13.2.5 Cabin Crew: The training syllabi and checking programmes for cabin crew members are outlined in detail in CAD 6009 and CAGM 6009.

13.2.6 All crew members: A training programme should be developed for all crew members in the emergency procedures appropriate to each make and model of aircraft flown in by the crew member. Areas should include:

a) instruction in emergency procedures, assignments and crew coordination;

b) individual instruction in the use of on-board emergency equipment such as fire extinguishers, emergency breathing equipment, first aid equipment and its proper use, emergency exits and evacuation slides and the aircraft's oxygen system including the use of portable emergency oxygen bottles. Flight crew members should also practice using their emergency equipment designed to protect them in case of a cockpit fire or smoke;

c) training should also include instruction in potential emergencies such as rapid decompression, ditching, fire-fighting, aircraft emergency evacuation, medical emergencies, hijacking, disruptive passengers; and procedures for the cabin crew to discreetly notify the flight crew in the event of suspicious activity or security breaches in the cabin; and

d) scheduled recurrent training to meet the CAAM requirements.

13.2.7 All operations personnel: The training syllabi and checking programmes for all operations personnel should include:

a) training in the safe transportation and recognition of all dangerous goods to a depth sufficient to ensure that an awareness is gained of the hazards associated with dangerous goods, how to identify them and what requirements apply to the carriage of such goods by passengers or as cargo. Training should include: general philosophy; limitations on dangerous goods in air transport; package marking and labelling; dangerous goods in passenger's baggage; emergency procedures; and a method of providing any required notification of an accident or incident involving undeclared dangerous good;

Note: —The requirements for the initial approval and continuing safety oversight of air operators to carry dangerous goods are extensive. Therefore, CAD 18 - National Transport Dangerous Goods Programme (NTDGP) has been established as a separate handbook.

b) all appropriate security training required by the CAAM.

Note: — Procedures for the review of the security training programmes are not contained in this GM as this review will be completed by the Aviation Security Division of the CAAM.

13.2.8 Operations personnel other than crew members: For operations personnel other than crew members (e.g., flight operations officer, handling personnel, etc.), a documented training programme should be developed that pertains to their respective duties. The training programme should provide for initial, recurrent and any required upgrade training. Training matters related to Flight Operation Officer shall be detailed in CAGM1011.

13.2.9 Procedures for training and checking: These are procedures to be applied for checking and procedures in the event that personnel do not achieve or maintain the required standards.

13.2.10 Document retention: These are procedures for retention of documentation and training records as required by MCAR 2016.

13.3 Training Programme approval – General

13.3.1 An applicant for an air operator certificate (AOC) is required to develop a training programme for crew members, dispatchers and instructors. An existing operator may need to revise its training programme when purchasing new equipment, operating in a new environment, obtaining new authorisations, or when new CAAM requirements are specified. Each operator must obtain the CAAM approval of curriculums used for training crew members, instructors, examiners and flight operations officers. The operator is responsible for ensuring that its training programme is complete, current and in compliance with the CAAM guidance.

Note: – Unless otherwise specified in this chapter, the term "operator" applies equally to an applicant for a certificate and an existing certificate owner.

13.3.2 CAAM will carry out a thorough analysis and inspection of all phases of the applicant's ground and flight training programmes. This analysis will establish whether the training methods, syllabi, training aids/devices, training standards, related facilities and record keeping are adequate. The qualifications of ground and flight instructor personnel and their effectiveness will be evaluated.

13.3.3 During the inspection of the training programme, the applicant's plan for the maintenance of pilot qualifications, for conversion and pilot upgrading will also be reviewed to ensure that:

a) the training and associated qualification checks are carried out in a conscientious manner by properly qualified and authorised personnel;

b) during training in actual flight, no manoeuvre that might result in an accident is prescribed, taking into account the aircraft involved and the experience and qualifications of the pilot in training and also of the instructor or check pilot;

c) Initial, recurrent, transition and re-qualification, upgrades, recency of experiences, familiarisation, differences and other specialised training programmes and checking is conducted in a systematic manner and in accordance with the training syllabus, without undue reliance upon the individual skill or preferences of the instructor or check pilot; and

d) simulation of abnormal or emergency situations is not permitted when passengers or cargo are carried.

13.3.4 CAAM will approve the applicant's training programme in discrete self-contained sections such as initial, recurrent, transition and re-qualification, upgrades, recency of experiences, familiarisation, differences and other specialised training programmes, which can then be further divided into subsections such as ground training, simulator training and flight training. Should any section or subsection of the training programme not meet the required standards, it will be referred back to

the applicant with a written detailed explanation of its deficiencies and of the corrective action necessary. When all requirements for the training programme have been fully met, the applicant will be notified officially that the training programme has been approved. Any subsequent change to the training programme will require the approval of the CAAM.

13.4 Specific Training Programme

13.4.1 Human factors (CRM) training: Flight operations officers and all aircraft crew members shall have CRM training as part of their initial and recurrent training requirements. CRM training includes an initial indoctrination/awareness segment, a method to provide recurrent practice and feedback, and a method of providing continuing reinforcement.

Note: - Refer to CAGM 6013 for additional guidance on CRM Training.

13.4.2 Emergency equipment training: The training programme requires each aircraft crew member to complete emergency equipment training during the specified training periods, using those items of installed emergency equipment for each type of aircraft in which he or she is to serve. During initial training, each aircraft crew member will be required to perform the following one-time emergency drills:

a) protective breathing equipment (PBE) / fire-fighting drill:

1) locate source of fire or smoke (actual or simulated fire);
2) implement procedures for effective crew co-ordination and communication, including notification of flight crew members about fire situation;
3) don and activate installed PBE or approved PBE simulation device;
4) manoeuvre in limited space with reduced visibility;
5) effectively use the aircraft's communication system;
6) identify class of fire;
7) select the appropriate extinguisher;
8) properly remove extinguisher from securing device;
9) prepare, operate and discharge extinguisher properly; and
10) utilise correct fire-fighting techniques for type of fire;

b) emergency evacuation drill:

1) recognise and evaluate an emergency;
2) assume appropriate protective position;
3) command passengers to assume protective position;
4) implement crew coordination procedures;
5) ensure activation of emergency lights;
6) assess aircraft conditions;
7) initiate evacuation (dependent on signal or decision);

8) command passengers to release seatbelts and evacuate;

9) assess exit and redirect, if necessary; open exit, including deploying slides and commanding helpers to assist;

10) command passengers to evacuate at exit and run away from aircraft;

11) assist special-need passengers, such as handicapped, elderly and persons in a state of panic; and

12) if required by the CAAM despite the safety risk, actually exit aircraft or training device using at least one of the installed emergency evacuation slides or device; or

13) observe a demonstration of the use of the emergency evacuation slide or device.

Note: — The training programme requires crew members to either observe the aeroplane exits being opened in the emergency mode and the associated exit slide/raft pack being deployed and inflated, or perform the tasks resulting in the accomplishment of these actions.

13.4.3 The training programme requires each aircraft crew member to accomplish additional emergency drills during initial and recurrent training, with a prescribed periodicity, including actual performance of the following emergency drills:

c) emergency exit drill:

1) correctly pre-flight each type of emergency exit and evacuation slide or slide raft (if part of cabin crew member's assigned duties; this is required for flight crew members);
2) disarm and open each type of door exit in normal mode;
3) close each type of door exit in normal mode;
4) arm each type of door exit in emergency mode;
5) open each type of door exit in emergency mode or, if no door trainer device is available, observe a demonstration then simulate the door opening in emergency mode;
6) use manual slide inflation system to accomplish or ensure slide or slide raft inflation or, if no slide inflation training device is available, observe a demonstration;
7) open each type of window exit; and
8) remove escape rope and position for use;

d) hand-held fire extinguisher drill:

1) pre-flight each type of hand-held fire extinguisher;
2) locate source of fire or smoke and identify class of fire;
3) select appropriate extinguisher and remove from securing device;
4) prepare extinguisher for use;
5) actually operate and discharge each type of installed hand fire extinguisher;

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

Note 2: — The discharge of halon extinguishing agents during fire-fighting drills is not appropriate. Other appropriate agents that are not damaging to the environment should be used during the drills to simulate the discharge of halon.

6) utilise correct fire-fighting techniques for type of fire;
7) implement procedures for effective crew co-ordination and communication, including notification of flight crew members about the type of fire situation;

e) emergency oxygen system drill:

1) pre-flight and operation of portable oxygen devices;
2) actually operate portable oxygen bottles, including masks and tubing;
3) verbally demonstrate operation of chemical oxygen generators or installed oxygen supply system;
4) prepare for use and operate oxygen device properly, including donning and activation;
5) administer oxygen to self, passengers and to those persons with special oxygen needs;
6) utilise proper procedures for effective crew coordination and communication;
7) manually open each type of oxygen mask compartment and deploy oxygen masks, for masks designed for manual retrieval and donning;
8) identify compartments with extra oxygen masks;
9) implement immediate action decompression procedures;
10) pre-flight and operation of PBE; and
11) activate PBE;

f) flotation device drill:

1) pre-flight flotation device, if appropriate;
2) don and inflate life vests;
3) remove and use flotation seat cushions, as installed; and
4) demonstrate swimming techniques using a seat cushion, as installed

g) ditching drill, if applicable

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

13.4.4 Flight crew initial aircraft ground training

13.4.4.1 The initial aircraft ground training curriculum for the flight crew should be applicable to their duties, the type of operations conducted and aircraft flown. Instructions should include at least the following general subjects:

a) operator's dispatch, maintenance release, method of control and supervision of flight operations or flight locating procedures;

b) principles and methods for determining mass and balance and runway limitations for take-off;

c) operator's operations specifications, authorisations and limitations;

d) adverse weather recognition and avoidance, and flight procedures which should be followed when operating in the following conditions:

1) icing
2) fog
3) turbulence
4) heavy precipitation
5) thunderstorms
6) mountain waves
7) volcanic ash
8) low-level wind shear and microburst
9) low visibility
10) contaminated runways

e) normal and emergency communications procedures and navigation equipment including the operator's communications procedures and ATC clearance requirements;

f) navigation procedures used in terminal departure, en-route, terminal arrival, approach and landing phases, to include visual cues prior to and during descent below DH or MDA;

g) crew resource management training;

h) air traffic control systems, procedures and phraseology;

i) aircraft performance characteristics during all flight regimes, including:

1) the use of charts, tables, tabulated data and other related manual information;
2) normal, abnormal and emergency performance problems;
3) meteorological and mass limiting performance factors (such as temperature, pressure, contaminated runways, precipitation, climb/runway limits);
4) inoperative equipment performance limiting factors (such as MEL/CDL, inoperative anti-skid); and
5) special operational conditions (such as unpaved runways, high altitude aerodromes and drift down requirements).

j) normal, abnormal and emergency procedures on the aircraft type to be used by flight crew, in coordination with cabin crew (as applicable).

13.4.4.2 The initial aircraft ground training curriculum for the flight crew should be applicable to their duties, the type of operations conducted and aircraft flown, including at least the content of the aircraft operating information of the operations manual, as well as the additional operating procedures that are in the General part of the operations manual.

13.4.4.3 The initial aircraft ground training curriculum for the flight crew should be applicable to their duties, the type of operations conducted and aircraft flown, including at least the following aircraft systems integration items and procedures:

a) use of checklist;

b) flight planning;

c) navigation and communications systems;

d) autoflight/flight directors; and

e) cockpit familiarisation.

13.4.5 Flight crew initial aircraft flight training

13.4.5.1 The pilot initial flight training includes at least the following training and practice in procedures related to the carrying out of pilot duties and functions. This training and practice may be accomplished either in flight or in a flight simulation training device (FSTD), as appropriate to the category and class of aircraft and as approved by the CAAM. If available, an FSTD must be utilised for training on turbo-jet aircraft and all large turbo-prop aircraft training. The training curriculum will be based on the manufacturer flight crew training manual if available and on the Type Certification Data Sheet (TCDS) if the TCDS contains type-rating training data.

Note: — The flight training events for pilots listed in paragraph 13.4.5.2 are generic in nature for an aircraft type-rating training curriculum conducted in an FSTD.

13.4.5.2 The training events should include:

a) Flight preparation, including ground operations before take-off;

b) Takeoff;

c) Climb;

d) En-route;

e) Descent;

f) Approaches (visual and instrument approaches including missed approach);

g) Landings;

h) After landing;

i) Other flight procedures during any airborne phase;

j) Normal, abnormal and alternate procedures during any phase; and

k) Emergency procedures during any phase.

13.4.6 Aircraft differences training

13.4.6.1 Aircraft differences training for crew members and flight operations officers are required when the operator has aircraft variances within the same type of aircraft. This training depends on the variances in equipment installed and in an aircraft family (e.g. A-318, A-319, A-320, A-321). The variances in installed equipment and the resulting training requirements must be identified. Guidance on training for aircraft family variances may be available from the State of Design or from the manufacturer or from the TCDS. A training curriculum needs to be developed covering the variances.

13.4.7 Pilot recurrent training

13.4.7.1 The recurrent training programme for all flight crew shall be relevant to the type or variant of aircraft on which he or she is assigned and rated to operate and for the crew member position involved. The flight crew member recurrent ground training includes at least the following:

a) general subjects;

b) aircraft systems, limitations and procedures;

c) ground icing and de-icing procedures and requirements;

d) emergency equipment and drills;

1) every 12 months:

i) use of all emergency and safety equipment carried on the aeroplane.
ii) the location and use of all types of exits
iii) actual donning of a lifejacket where fitted
iv) actual donning of protective breathing equipment
v) actual handling of fire extinguishers

2) every 3 years:

i) operation of all types of exits
ii) demonstration of the method used to operate a slide, where fitted

iii) fire-fighting using equipment representative of that carried in the aeroplane on an actual or simulated fire

Note: — With halon extinguishers, an alternative method acceptable to the CAAM may be used.

iv) effects of smoke in an enclosed area and actual use of all relevant equipment in a simulated smoke-filled environment.
v) actual handling of pyrotechnics, real or simulated, where fitted
vi) demonstration in the use of the life-raft(s), where fitted
vii) an emergency evacuation drill
viii) a ditching drill, if applicable
ix) a rapid decompression drill, if applicable

e) crew resource management;

f) dangerous goods; and

g) security.

13.4.7.2 The pilot recurrent flight training should include at least the following:

a) flight preparation;

b) ground operation before take-off;

c) take-off;

d) climb;

e) en-route;

f) descent;

g) approaches (visual and instrument approaches including missed approach);

h) landings;

i) after landing;

j) other flight procedures during any airborne phase;

k) normal, abnormal and alternate procedures during any phase; and

l) emergency procedures during any phase.'

Note: — Flight training may be conducted in an appropriate aircraft, adequate flight simulation training device (FSTD), or in a combination of aircraft and FSTD, as approved by the CAAM.

13.4.8 Pilot Renewal After Expiry (Re-Qualification)

13.4.8.1 After expiry of a pilot's licence and/or loss of recency, requalification requirements shall be in accordance to CAD 1.

13.4.9 Flight engineer recurrent: The flight engineer recurrent flight training includes at least the flight training specified in paragraph 1.1.1.

13.4.10 Cabin crew

13.4.10.1 Initial traning, aircraft type rating, conversion/differences training, aircraft visit, familiarisation flight, recurrent training, requalification training, and reactivation/refresher training are outlined in detail in CAGM 6009.

13.4.11 Initial training – Flight operations officer: The initial aircraft ground training for flight operations officers are specified in CAGM 1011.

13.4.12 Recurrent training – Flight operations officer

13.4.12.1 The recurrent training programme to be completed every twelve months should be relevant to the type(s) and/or variant(s) of aircraft and the operations conducted by the air operator.

13.4.12.2 The training programme should ensure that each flight operations officer receives recurrent training in the subjects required for initial training listed in paragraph 1.1.1 in sufficient detail to ensure competency in each specified area of training. Operators may choose to provide in-depth coverage of selected subjects on any one cycle of training. In such cases the operator's training programme must cover all the subjects to the detail required for initial qualification within three years.

13.4.12.3 Within the preceding 12 months, at least one qualification flight must be performed in the flight crew compartment of an aircraft over any area for which the flight operations officer is authorised to exercise flight supervision.

13.4.13 Flight Crew instructor training

13.4.13.1 The initial ground training for flight instructors should include the following:

a) flight instructor duties, functions and responsibilities

b) applicable regulations and the operator's policies and procedures

c) training to ensure the flight instructor is competent to:

1) manage safety

2) prepare the training environment

3) manage the trainee

4) conduct training

5) perform trainee assessment

6) perform course evaluation

13.4.13.2 For candidates not rated on the aircraft type, the programme should include the approved methods, procedures, and limitations for performing the required normal, abnormal, and emergency procedures applicable to the aircraft to which the flight instructor is in transition training.

13.4.13.3 The initial and transition flight training for flight instructors should include the following:

a) safety measures for emergency situations that are likely to develop during instruction;

b) potential results of improper, untimely or non-execution of safety measures during instruction for pilot flight instructor (aircraft);

c) in-flight training and practice in conducting flight instruction from the left and right pilot seats in the required normal, abnormal and emergency procedures to ensure competence as an instructor;

d) the safety measures to be taken from either pilot seat for emergency situations that are likely to develop during instruction;

e) flight training requirements for flight instructors can be completed in full or in part in flight or in a flight simulation training device, as appropriate;

f) initial and transition flight training for flight instructors should include training in the operation of flight simulation training devices (FSTD), to ensure competence to conduct the flight instruction required.

13.4.14 Cabin crew instructor training: The initial ground training for the cabin instructors are outlined in detail in CAGM 6009.

13.4.15 Flight operations officer instructor: Flight operations officer instructor training should be as described in CAGM 1011.

13.4.16 Report procedures: The appropriate training manual/programme checklist/report forms from shall be used for recording the results of the review of the applicable training manual/programme.

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14 Transportation of Dangerous Goods

14.1 Background and Objectives

14.1.1 MCAR 2016, Part XIII requires an air operator to be authorised by the CAAM to carry dangerous goods. In addition, MCAR 2016 require that the carriage of dangerous goods be in accordance with CAD 18 – National Transport of Dangerous Goods Programme (NTDGP).

14.1.2 While the requirements for air operators to be authorised to carry dangerous goods are extensive, air operators who do not carry dangerous goods are also required by MCAR 2016 to meet certain requirements.

14.2 Practices and procedures

14.2.1 Air operators not authorised to transport dangerous goods as cargo

14.2.1.1 Air operators not transporting dangerous goods are required by the MCAR 2016 to:

a) establish an approved dangerous goods training programme that meets the requirements of the MCAR 2016 Part XIII;

b) establish dangerous goods policies and procedures in its operations manual which would allow the operator's personnel to:

1) identify, reject and report undeclared dangerous goods, including company material (COMAT) classified as dangerous goods within 24 hours of the discovery; and

2) report dangerous goods accidents and incidents to the CAAM and the State in which the accident or incident occurred within 24 hours of the discovery.

14.2.1.2 The training programme as outlined in paragraph 14.2.1.1 should ensure that:

a) staff who are engaged in general cargo handling have received training to carry out their duties in respect of dangerous goods which covers, as a minimum, the areas identified in Column I of Table 14 – 1 to a depth sufficient to ensure that an awareness is gained of the hazards associated with dangerous goods and how to identify such goods; and

b) crew members, passenger handling staff and security staff employed by the air operator who deal with the screening of a passengers and their baggage have received training which covers, as a minimum, the areas identified in Column 2 of Table 16 – 1 to a depth sufficient to ensure that an awareness is gained of the hazards associated with dangerous goods, how to identify them and what requirements apply to the carriage of such goods by passengers.

AREAS OF DANGEROUS GOODS TRAINING	1	2
GENERAL PHILOSOPHY	X	X
LIMITATIONS ON DANGEROUS GOODS IN AIR TRANSPORT	X	X
PACKAGE, MARKING AND LABELLING	X	X
DANGEROUS GOODS IN PASSENGER BAGGAGE		X
EMERGENCY PROCEDURES		X

Table 14 – 1

14.2.2 Operators authorised to transport dangerous goods as cargo

14.2.2.1 For AOC holder intending to apply for transportation of dangerous goods, refer to CAD 18.

15 Addition of a New Aircraft Type to a Certificated Operator's Fleet

15.1 General

15.1.1 The addition of a new aircraft type to a certificated operator's fleet requires many of the same inspections, reviews, demonstrations, authorisations, and approvals by the CAAM as were required for the original issuance of an AOC. The operator may not commence revenue operations with the new aircraft type until all of the provisions of paragraphs 15.2 through 15.5 below are followed. Flight Operations checklist for the AOC approval on induction of new aircraft is in Attachment D - Flight Operations Checklist for the AOC approval on induction of new aircraft.

15.2 Document Review

15.2.1 At least 6 weeks prior to the proposed introduction of the new aircraft type to revenue operations, the operator must submit the following documents or their equivalents for review and approval as required:

a) A revised or updated Flight Operations Manual (FOM) or Basic Operations Manual (BOM) or equivalent which incorporates general information, guidance, and instructions pertaining to the new aircraft type, and reflects the current operating environment of the airline;

b) An Aircraft Operating Manual (AOM/AFM) for the new aircraft type either developed specifically by the airline or adopted directly from the manufacturer, which contains information on aircraft systems, limitations, performance, and normal and abnormal operating procedures for the airplane;

c) A Minimum Equipment List (MEL) for the new aircraft type which reflects the Master Minimum Equipment List approved by the state of the manufacturer, and is tailored to the specific airplane model and operating environment of the airline. This document requires approval by the CAAM;

d) A Configuration Deviation List for the new aircraft type which contains information regarding flight with missing aircraft components;

e) All normal, abnormal, and emergency checklists for the new aircraft type, including abbreviated checklists for use in the cockpit. These checklists must be approved by CAAM;

f) Passenger briefing cards in English and other appropriate languages;

g) A revised Cabin Crew Manual or other suitable reference for Cabin crew concerting the configuration of the new aircraft type, location and operation of installed cabin equipment, and duties and responsibilities during normal and abnormal operations;

h) Weight and balance information and procedures;

i) Airport Analysis charts or equivalent reference material for use by aircrew for determining maximum gross take-off and landing weights for specific airports and runways; taking into account obstacle clearance, runway length and slope, aircraft configuration, and current meteorological conditions;

j) Written training programmes for Flight crew and cabin crew members and flight dispatchers/flight operations officers.

15.3 Demonstrations

15.3.1 The following demonstrations must be successfully completed by the operator for the new aircraft type:

a) Emergency evacuation and ditching drills should be conducted to demonstrate the ability of the cabin crew to safely evacuate passengers and utilise aircraft emergency equipment;

b) Prior to the first revenue flight, proving flights should be conducted which demonstrate the ability of the airline to safely operate the new aircraft type on a day to day basis. The airline should submit a proposed proving flight plan which contains the number of flights, dates, crew composition and destinations.

15.4 Inspections

15.4.1 In addition to the manual inspections and approvals outlines in paragraph 15.2, the CAAM must conduct the following inspections to ensure that the operator is fully prepared to operate the new aircraft type:

a) Inspections of each transit or line station must be conducted to ensure that ground personnel are adequately trained to support the new aircraft type and that support equipment and facilities are adequate for the operation. Transit stations may be inspected during proving flights or as separate events prior to the first revenue flight.

b) The Dispatch / Operational Control Centre should be inspected to ensure adequacy of flight planning, briefing, and record – keeping associated with the new aircraft type.

15.5 Others

15.5.1 All crew members must receive the full range of technical training before operations commence. All crew members should receive training on duties during emergencies and on operation of emergency equipment installed on the aircraft. Cabin crew should receive hands-on training in door operation and deployment of escape slides, if applicable. Training records for all crew members should be verified.

15.5.2 The aircraft maintenance programme for the new aircraft type must be submitted to and approved by the CAAM Airworthiness Division.

15.6 Revised Operations Specifications

15.6.1 Applicable parts of the Operations Specifications must be amended as required to reflect the addition of the new aircraft type. Issuance of the revised Operations Specifications to the operator represents a formal approval for the operator to commence revenue operations with the new aircraft type.

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16 Flight Monitoring or Aircraft Tracking

16.1 Responsibility of AOC Holder

16.1.1 In accordance with CAD 6004, an operator shall establish policy, procedures and requirements for flight monitoring 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:

a) The dispatcher's flight-following requirements and procedures should be clearly identified;

b) 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;

c) 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;

d) Policy and guidance should be provided to flight crews and dispatchers for monitoring fuel en-route;

e) Flight crew reporting requirements and procedures should be clearly stated;

f) There shall be specific procedures for dispatchers to follow when a required report is not received;

g) The operator should maintain a record of communications between the dispatcher and the flight;

h) Procedures should 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

i) While carrying out the flight monitoring, the operator should ensure that the flight operations officer/flight dispatcher avoid taking any action that would conflict with the procedures established by:

1) Air Traffic Control;
2) The meteorological service; or
3) The communication service.

16.1.2 An AOC holder conducting charter/lease operations may arrange to have flight monitoring 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.

a) Each AOC holder conducting charter/lease operations using a flight monitoring system will need to demonstrate that the system has adequate facilities and personnel to provide the information necessary for the initiation and safe conduct of each flight to:

   1) The flight crew of each aircraft; and
   2) The persons designated by the operator to perform the function of operational control of the aircraft.

b) Each AOC holder conducting charter/lease operations will need to demonstrate that the personnel required to perform the function of operational control are able to perform their duties.

16.1.3 Flight monitoring procedures and the standards of qualifications for the individual performing this function shall be described in the operator's OM.

17 Flight Data Analysis Programme (FDAP)

17.1 Requirement for the Establishment of Flight Data Analysis Programme (FDAP)

17.1.1 Flight Data Analysis Programme (FDAP)

17.1.1.1 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.

17.1.1.2 In accordance with CAD 6004, the operator shall establish a quality assurance system and designated quality manager(s) to monitor the compliance with, and adequacy of, procedures required to ensure safe operational practices and airworthy aircraft. Compliance monitoring shall include a direct feedback system to the accountable manager to ensure corrective action as necessary.

17.1.1.3 “Flight data analysis” is defined as a process of analysing recorded flight data in order to improve the safety of flight operations.

17.1.1.4 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.

a) FDA involves:

   1) capturing and analysing flight data to determine if the flight deviated from a safe operating envelope;

   2) identifying trends; and

   3) promoting action to correct potential problems.

b) Periodically, flight data are transferred from the aircraft and analysed by the ground analysis system at a centralised location.

c) 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.

d) In summary, FDAPs offer a wide spectrum of applications for safety management, the benefit of improving operational efficiency and economy. The objective is to:

   1) determine operating norms;

   2) identify potential and actual hazards in operating procedures, fleets, aerodromes, ATC procedures, etc.;

3) identify trends;

4) monitor the effectiveness of corrective actions taken;

5) provide data to conduct cost-benefit analyses;

6) optimise training procedures; and

7) provide actual rather than presumed performance measurement for risk management purposes.

e) It is important that FDAPs are non-punitive and contain adequate safeguards to protect the source(s) of the data.

f) A FDAP integrated within a SMS

1) 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.

2) 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

3) 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).

4) 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.

5) 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.

6) 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.

7) 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.

17.1.2 FDAP Description

17.1.2.1 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.

17.1.2.2 FDA Equipment

a) FDAPs generally involve systems that capture flight data, transform the data into an appropriate format for analysis, for generating reports and for visualisation 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:

   1) 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;

   2) 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 utilise wireless technologies;

   3) a ground-based computer system (using specialised 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

   4) optional software for a flight animation capability to integrate all data, presenting it as a simulation of in-flight conditions, thereby facilitating visualisation of actual events for analysis and crew debriefing.

b) Airborne equipment

   1) 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

2) 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.

3) 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.

c) Ground-based computer system for flight data analysis

1) 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.

2) FDAPs generate large amounts of data requiring specialised analysis software. This analysis software facilitates the routine analysis of flight data in order to identify situations that may require corrective action.

3) 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.

4) 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.

17.1.3 Processing FDA Data

17.1.3.1 Exceedance detection

a) 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.

b) Data provides factual information which complement crew and engineering reports.

c) Operators may also modify the standard set of core events to account for unique situations they regularly experience or for the SOPs they use.

Note: - Refer to Event Parameter Table at the end of this chapter for guidance

17.1.3.2 Routine measurements

a) Data can be retained from all flights, not just those producing significant events. A selection of parameters is retained that is sufficient to characterise 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.

17.1.3.3 Incident investigation

a) 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.

17.1.3.4 Continuing airworthiness

a) Both routine measurements and exceedances can be utilised 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.

17.1.3.5 Integrated safety analysis

a) 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.

17.1.4 Analysis and Follow-Up

a) 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.

b) If deficiencies in the flight technique are recognised, 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 (d) 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.

c) 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.

d) 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.

e) 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.

f) As in any closed-loop process, follow-up monitoring is required to assess the effectiveness of any corrective actions taken.

g) 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.

17.1.5 Prerequisites for an Effective FDAP

a) Protection of FDA Data

1) Overall approach

i) The operator's management, flight crews and the CAAM have legitimate concerns regarding the protection of FDA data, which include:

1. use of data for disciplinary purposes;
2. use of data for enforcement actions against individuals or against the company, except in cases of criminal intent or willful misconduct;
3. disclosure to the media and the general public under the provisions of State laws regarding access to information; and
4. disclosure during civil litigation.

ii) 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.

iii) Data protection can be optimised by:

1. adhering to the agreement between management and the flight crews, where available;
2. strictly limiting data access to selected individuals;
3. maintaining tight control to ensure that data identifying a specific flight are kept secure;
4. ensuring that operational problems are promptly addressed by management; and
5. to the extent possible, non-reversible de-identification of the flight data files after a time appropriate for their analysis.

2) Policy on retention of data

i) 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.

ii) 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.

3) De-identification policy and procedures

i) 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.

ii) 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.

4) Set authorised access levels

i) 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.

17.1.6 Involvement of Flight Crews

a) 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:

1) early participation of the flight crew representatives and or the CAAM representatives in the design, implementation and operation of an FDAP; and

2) a formal agreement between management and the flight crews, and or the CAAM identifying the procedures for the use and protection of data.

17.1.7 Safety Culture

a) Consistent and competent programme management characterises successful FDAPs. Indications of an effective safety culture of an operator include:

1) top management's demonstrated commitment to promoting a proactive safety culture;
2) the cooperation and accountability of all organisational 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;
3) 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;
4) an identified safety manager whose role and functions are defined following the recommendations of the Safety Management Manual;
5) FDAP management by a dedicated staff under the authority of the safety manager, with a high degree of specialisation and logistical support;
6) involvement of persons with appropriate expertise when identifying and assessing risks;
7) 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;
8) a well-structured de-identification system to protect the confidentiality of the data; and
9) an efficient communication system, to permit timely safety action, for disseminating hazard information and subsequent risk assessments internally and to other organisations.

17.1.8 Establishing and implementing an FDAP

17.1.8.1 Implementation Plan

a) Typically, the following steps are required to implement an FDAP:

1) management approval of the programme;
2) implementation of a formal agreement between management and flight crews;
3) identification of an FDAP implementation committee, including the future FDA team members; this committee should be involved in all of the following steps;
4) development of a business plan, including processes, software and hardware and assignment of adequate resources;

5) establishment and verification of operational and security procedures;

6) development of an FDAP procedures manual;

7) assessment of possible interfaces between an FDAP and other safety data sources (i.e. SDCPS) and of integration of an FDAP into the SMS;

8) selection of equipment (airborne, ground-based computer system, interface with other data sources and the SMS);

9) selection and training of the FDA team members, according to their respective roles;

10) testing of data transfer; testing of the ground-based computer system (including data acquisition, definition of trigger logic expressions, data analysis and visualisation, data de-identification, final storage of data);

11) testing of data security, including security procedures;

12) identification of areas of interest that should be first looked at in the data;

13) checking of the proper decoding and of the quality of flight parameters used by an FDAP; and

14) start of data analysis and validation, focused on key areas in operation.

17.1.9 Aims and Objectives

17.1.9.1 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.

17.1.9.2 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.

a) Examples:

1) 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.

2) 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.

3) 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 utilisation and condition monitoring to reduce spares holdings.

17.1.9.3 Initially focusing on a few known areas of interest will help prove the system's effectiveness.

17.1.10 The FDAP Team

17.1.10.1 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.

a) 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.

b) 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.

c) 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.

d) 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.

e) 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.

f) 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.

g) 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 utilise the services of a specialist contractor to operate an FDAP.

17.1.10.2 All FDAP team members need appropriate training or experience for their respective area of data analysis and should be subject to a confidentiality agreement.

17.1.10.3 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.

17.1.11 Continuous Improvement

17.1.11.1 New safety issues identified and published by other organisations, 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.

17.1.11.2 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 organisation of the aircraft operator or the interface with other data sources and processes.

17.1.11.3 In order to assess the general effectiveness of an FDAP, a periodic review or an audit may be beneficial.

17.1.11.4 Such a review could determine:

a) if anticipated safety benefits are being realised;

b) if the FDA procedures reflect the actual operation of an FDAP, and if they have been followed;

c) whether the information provided to FDAP users is accurate, timely, and useable; and

d) if the tools employed to collect and present data are still adequate and if other technology would be more effective.

17.1.12 Event Parameter Table

Event Name	Event Description	arameters and Basic Event Definition	Notes
Excessive Power on the Ground	An event designed to measure high power settings on the ground that could result in injury to personnel or damage to equipment.	Air/Ground Switch, Ground Speed, N_1 Air/Ground = Ground, Ground Speed < x knots, N_1 > x% for x seconds	This event would also be used in the After Landing phase.
Excessive EGT – Start	An event designed to detect EGT in excess of flight manual limits during engine start.	Air/Ground Switch, EGT Air/Ground = Ground, EGT > x degrees for x seconds	This event could be included in other flight phases, if desired, although EGT exceedances other than on engine start are extremely rare.
Engine Overtemp	An event to detect engine EGT in excess of in-flight limits.	EGT EGT > x degree for x seconds	
Takeoff Warning	An event that would trigger on the same conditions that set off the takeoff warning horn.	Air/Ground Switch, Flap Position, Speed Brake Position, Throttle Position (or possibly N_1) Air/Ground = Ground, Flaps < approved takeoff flaps, Flaps > approved takeoff flaps, Speed Brake > 0, Throttle Position > x	On some newer aircraft, Takeoff Warning is a discrete parameter. Trim Setting is normally a component that triggers Takeoff Warning, but it is sometimes not a recorded parameter.

Event Name	Event Description	ıarameters and Basic Event Definition	Notes
Rejected Takeoff – Low Speed	An event to detect that the takeoff roll has begun and the takeoff has been abandoned below a pre-determined speed.	CAS, N_1 CAS > x knots, CAS < x knots, N_1 > x% for x seconds, followed by N_1 < x% within 60 seconds	Low end CAS should be greater than any anticipated taxi speed. 100 knots is generally accepted as the cutoff between high- and low- speed aborts.
Rejected Takeoff – High Speed	An event to detect that the takeoff roll has begun and the takeoff has been abandoned above a pre-determined speed.	CAS, Gross Weight, N_1 CAS > x knots, CAS < V_1, N_1 > x% for x seconds, followed by N_1 < x% within 60 seconds	If N_1 is not an available parameter, V_2 or Liftoff Speed may be used as the upper limit.
Liftoff Speed High	An event to determine the relationship of the actual liftoff speed to V_2.	Air/Ground Switch, Gross Weight, CAS Air/Ground = Ground, CAS > V_2 + x knots for x seconds	V_2 is calculated based on Gross Weight.
Liftoff Speed Low	An event to determine the relationship of the actual liftoff speed to V_2.	Air/Ground Switch, Gross Weight, CAS Air Ground = Air, CAS < V_2 – x knots for x seconds	V_2 is calculated based on Gross Weight.
Pitch High at Takeoff	An event that measures pitch at takeoff in relation to the angle required to strike the tail of the aircraft.	Air/Ground Switch, Pitch Air/Ground = Ground, Pitch > x degrees	Limits are based on the angle required for the tail cone to contact the ground with struts compressed.
Takeoff Climb Speed High	An event to detect climb speed higher than desired during the Takeoff Phase of flight.	CAS, Gross Weight, HAT HAT > x feet, HAA < x feet, CAS > V_2 + x knots	Altitude ranges should be used to accommodate different desired climb speeds in those ranges. In certain ranges, the climb airspeed will be based on V_2.

Event Name	Event Description	arameters and Basic Event Definition	Notes
Takeoff Climb Speed Low	An event to detect climb speed lower than desired during the Takeoff Phase of flight.	CAS, Gross Weight, HAT HAT > x feet, HAA < x feet, CAS < V_2 – x knots	Altitude ranges should be used to accommodate different desired climb speeds in those ranges.
Early Flap Retraction	An event to detect any flap movement from the takeoff position prior to reaching the altitude at which flap retraction should begin.	HAT, Flap Position HAT< x feet, Flap Position < Flap Position in the preceding sample	
Excessive Bank Angle at Takeoff	An event to detect when the bank angle exceeds the maximum allowable bank angle.	HAT, Roll HAT > x feet, HAT < x feet, Roll > x degrees for x seconds	Altitude ranges should subdivide this event with different bank limitations in each range.
Turbulence – Flaps Extended	An event to detect excessive G-forces prior to flap retraction.	Vertical Acceleration, Flap Position Flaps > 0, Vertical Acceleration > x g for x seconds	1.5 g is a generally accepted limit for this type of event. This event can also occur during the Approach phase of flight.
Slow Initial Climb	An event to detect a slower than normal climb to the clean-up altitude.	Air/Ground Switch, HAT Time > x seconds from Air/Ground = Air to HAT = x feet	HAT would be based on clean-up altitude.
Abnormal Flap Retraction	An event to detect slow flap movement between any selected flap position and the previously selected flap position.	Flap Position, Flap Handle Position Time from Flap Handle Position = x degrees until Flap Position = x degrees > x seconds	This event will also detect stuck flaps.

Event Name	Event Description	ırameters and Basic Event Definition	Notes
Height Loss in Climb	An event to detect an interruption in climb in which altitude is lost before the climb resumes.	HAT HAT < than x feet, HAT < HAT in preceding sample	This event might benefit from subdivision in altitude ranges.
Climb Speed High	An event to detect climb speed higher than 250 knots below 10,000 feet.	Altitude, CAS Altitude < 10,000 feet, CAS > 250 knots for x seconds	
Flap Limit Altitude	An event to detect when flaps are operated above the maximum allowable altitude for flap operation.	Altitude, Flaps Position Altitude > x feet, Flap Position > 0 degrees	Altitude would correspond to the maximum operating altitude for flaps extended.
Turbulence – Flaps Up	An event to detect excessive G-force while airborne, indicating an encounter with turbulent conditions.	Air/Ground Switch, Vertical Acceleration Air/Ground = Air, Vertical Acceleration > x g, Vertical Acceleration > -x g	This event will measure turbulence from all sources (convective activity, clear air, or wake induced). Vertical Acceleration limits of +1.5 g to – 0.5 g might be considered.
Holding/ Excess Radar Vectoring	An event to detect excessive delays caused by ATC holding/radar vectoring.	Heading Cumulative Time > x, Heading = Heading + 359 degrees, Time < 600 seconds	The start point for this event would occur after the first 360-degree turn and end 600 seconds after the last turn. The event would trigger when the cumulative time exceeds a user-defined value.

Event Name	Event Description	arameters and Basic Event Definition	Notes
Operating Ceiling Exceeded	An event to detect operation of the aircraft above its certificated maximum operating altitude.	Altitude Altitude > x feet for x seconds	
Landing Gear Down Speed Exceeded (Mach)	The indicated mach number of the aircraft exceeds the maximum allowable mach for operation with the landing gear in the down position.	Mach, Landing Gear Position Landing Gear Position = Down, Mach > x mach number for x seconds	Limiting mach number would be M_{LE}.
M_{MO} Exceeded	An event to detect occurrences of the indicated mach number of the aircraft in excess of the maximum allowable mach number.	Mach Mach > x mach number for x seconds	
V_{MO} Exceeded	An event to detect occurrences of the indicated airspeed of the aircraft in excess of the maximum allowable airspeed.	CAS CAS > x knots for x seconds	
High Descent Rate	An event that measures unusually high rates of descent.	Inertial Vertical Speed, HAT, Altitude Descent rate > x fpm for x seconds, HAT/Altitude > x, HAT/Altitude < x	This event can be subdivided into altitude ranges to capture abnormal rates of descent that might be caused by different ATC facilities.
Excessive Speedbrake Usage	An event that measures the amount of time the speedbrake is used during descent.	Speed Brake Handle, Air/Ground Switch Air/Ground = Air, Cumulative Time Speed Brake > 0	This event is useful in evaluating arrival procedures into specific airports.

Event Name	Event Description	ıarameters and Basic Event Definition	Notes
Approach Speed High	An event to detect operation on approach that is in excess of its computed final approach speed.	Gross Weight, CAS, HAT, Flaps HAT > 1,000 feet, HAT < 3,000 feet, CAS > V_{FE} – x knots HAT < 1,000 feet, CAS > V_{REF} + x knots	This event should be broken down into altitude bands. Suggested breakdown would be HAT > 1,000 feet, HAT 500 – 1,000 feet, HAT 50 – 500 feet, HAT < 50 feet. Speeds above 1,000 feet would reference a lookup table.
Approach Speed Low	An event to detect operation on approach that is below its computed final approach speed.	Gross Weight, CAS, HAT HAT > 1,000 feet, CAS < flap maneuvering speed – x knots HAT < 1,000 feet, CAS < V_{REF} – x knots	Speeds above 1,000 feet would reference a lookup table.
Excessive Power Increase	An event to detect an excessive power increase during final phase of approach.	HAT, N_1 Δ of N_1 at 500 feet and N_1 < 500 feet > x	
Abnormal Configuration – Flaps/Speedbrake	An event to detect the simultaneous use of flaps and speedbrakes.	Speedbrake Handle, Flaps Speedbrake handle > 0, flaps > 0	This event would only be included if this type of operation were prohibited in the flight operations manual.
Abnormal Flap Extension	An event to detect slow flap movement between any selected flap position and the previously selected flap position.	Flap Position, Flap Handle Position Time from Flap Handle Position = x degrees until Flap Position = x degrees > x seconds	This event will also detect stuck flaps.

Event Name	Event Description	arameters and Basic Event Definition	Notes
Landing Gear Down Speed Exceeded (IAS)	An event to detect when the indicated airspeed of the aircraft exceeds the maximum allowable airspeed for operation with the landing gear in the down position.	Landing Gear Position, CAS Landing Gear = Down, CAS > x knots	
Late Landing Flaps	An event to detect flap movement to the landing flap position below a pre-determined altitude.	HAT, Flap Handle Position, Air/Ground Switch Air/Ground = Air, HAT < x feet, Flap Handle Position at x feet HAT < Flap Handle Position at touchdown	This event is slightly different from Late Landing Configuration in that it detects flap movement below a set altitude rather than a flap setting.
Low Power on Approach	An event to detect aircraft engines not spooled or the power reduced to an unspooled condition below a predetermined altitude.	Air/Ground Switch, HAT, N_1 Air/Ground = Air, HAT < x feet, N_1 < x %	
Landing Gear Operation	An event to detect when the indicated airspeed of the aircraft exceeds the maximum allowable airspeed for operation of the landing gear in transit.	Landing Gear Warning, CAS Landing Gear Warning (in transit) = On, CAS > x knots	If the operating limitation is different for landing gear extension and retraction, separate events will need to be created for each limitation.
Operation Left of Localizer Centerline	An event to detect deviation left of localizer centerline.	alizer Deviation Left, HAT Localizer Deviation > x dots, HAT > x feet	
Operation Right of Localizer Centerline	An event to detect deviation right of localizer centerline.	Localizer Deviation Right, HAT Localizer Deviation > x dots, HAT > x feet	

Event Name	Event Description	ıarameters and Basic Event Definition	Notes
Operation Above Glideslope	An event to detect deviation above glideslope.	Glide Slope Deviation High, HAT Glide Slope > x dots, HAT < x feet	
Operation Below Glideslope	An event to detect deviation below glideslope.	Glide Slope Deviation Low, HAT Glide Slope > x dots, HAT < x feet	
Descent Below MDA	An event to detect descent below MDA (followed by a climb back to MDA) on non-precision approaches.	HAT, Altitude HAT < 1,000 feet, Altitude > Altitude in preceding sample + x feet	
Flap Limiting Speed	An event to detect flap operation at a speed that exceeds the maximum placarded airspeed.	Flap Position, CAS Flap Position = x, CAS > x knots for x seconds	This event will be constructed with a different speed limit for each flap setting through the use of a lookup table. It will also detect speed exceedances during retraction in the Takeoff phase of flight.
Go Around	An event to detect that the aircraft has begun its descent for landing, discontinues that descent, and does not land from that approach.	HAT, Altitude, N_1 HAT < 2,000 feet, HAT > 1 foot, Altitude < preceding Altitude sample for 10 seconds, N_1 > 98%, Altitude > any preceding Altitude sample in previous 60 seconds + 300 feet	

Event Name	Event Description	arameters and Basic Event Definition	Notes
ATC Go Around	An event to detect a go-around event in which no other events are triggered, such as approach instability, indicating the go around was directed by ATC.	HAT, Altitude, N_1, Localizer Deviation, Glide Slope Deviation, CAS HAT < 2,000 feet, HAT > 1 foot, N1 > 98%, Altitude > any preceding Altitude sample in previous 60 seconds + 300 feet, Localizer Deviation < x dots, Glide Slope Deviation < x dots, CAS = V_{REF} ± x knots	
Late Landing Configuration	An event to detect that the aircraft is not configured with landing flaps and landing gear in the down and locked position at 500 feet HAT.	HAT, Landing Gear Position, Flap Position HAT < 500 feet, Landing Gear Warning = On, Flap Position < x flaps	
Tire Limiting Speed	An event to detect if the tire limiting speed is exceeded.	Air/Ground Switch, CAS Air/Ground = Ground, CAS > x knots	
Pitch High – Landing	An event that measures pitch at landing in relation to the angle required to strike the tail of the aircraft.	Air/Ground Switch, Pitch Air/Ground = Ground, Pitch > x degrees from 6 seconds before to 15 seconds after touchdown	Limits are based on the angle required for the tail cone to contact the ground with struts compressed.
Pitch Low – Landing	An event that measures pitch attitude where the aircraft is in a nose down attitude that might result in an initial nose-gear touchdown or three-point landing.	Air/Ground Switch, Pitch Air Ground = Ground, Pitch < x degrees from 3 seconds before to 1 second after touchdown	

Event Name	Event Description	ırameters and Basic Event Definition	Notes
Landing in a Crab	An event to detect failure to align aircraft with the runway at touchdown.	Heading, CAS ∆ Heading at Touchdown vs. Average Heading until CAS = 60 knots	
Hard Landing	An event that measures excessive G-force at touchdown, indicating a hard landing.	Air/Ground Switch, Vertical Acceleration Air/Ground = Ground, Vertical Acceleration > x G	
Bounced Landing	An event that measures excessive G- force at touchdown followed by a second excessive G-force, indicating a bounced, hard landing.	Air Ground Switch, Vertical Acceleration Air/Ground = Ground, Vertical Acceleration > x G, followed by second Vertical Acceleration > x G within 20 seconds of first touchdown	
Excessive Brake Usage	An event to detect higher-than-normal brake application.	Brake Pressure Sum of Brake Pressure readings (one per second) from Touchdown to Runway Turnoff/1000. Resulting index number > x	A routine operational measurement (ROM) would be helpful to determine normal braking at a given airport.
Thrust Reverser Stowed	An event that measures the speed at which the thrust reverser is stowed during landing rollout.	CAS, Thrust Reverser Deploy Thrust Reverser = On for 5 seconds before Thrust Reverser = Off, CAS > x knots	
Overweight Landing	An event to detect landings made in excess of the maximum gross	Air/Ground Switch, Gross Weight Air/Ground from Air to Ground + 20 seconds,	

	landing weight.	Gross weight > x pounds	

Event Name	Event Description	arameters and Basic Event Definition	Notes
Abnormal/ Incorrect Landing Flaps	An event to detect that the aircraft touched down with flaps in a position less than the minimum expected landing flap setting.	Air/Ground Switch, Flap Position, Air/Ground from Air to Ground + 5 seconds, Flaps < x degrees	Will need to be customized for the recommendations in the flight manual.
Runway/Taxiway Rough	An event that measures excessive G- force on the ground, indicating defects in runway/taxiway surfaces.	Air/Ground Switch, Vertical Acceleration, CAS Air/Ground = Ground, CAS < 100 knots, Vertical Acceleration >1.3 g	
Stick Shaker Operation	An event to detect stick shaker operation.	Stick Shaker Stick Shaker + On (L or R)	
GPWS Warning	An event to detect when a GPWS warning is triggered.	GPWS GPWS = On	This event should be subdivided for each of the different warning modes of the GPWS.
Engine Failure	An event to detect in-flight engine failure/shutdown.	Air/Ground Switch, Fuel Flow, Oil Pressure, EGT Air/Ground = Air, Oil Pressure < x psi, Fuel Flow < x pph, EGT < x degrees	
TCAS Advisory	An event to detect any TCAS advisory triggered.	TCAS Advisory (Up or Down) TCAS Advisory = On	This event should be separated for TCAS Traffic Advisories (TAs) and Resolution Advisories (RAs).
Engine Reverse at Low Speed	An event to detect use of engine reverse at low speed that can result in engine overtemps and/or FOD ingestion.	Thrust Reverser, N_1, CAS Thrust Reverser = On, CAS < x knots, N_1 > x% for x seconds	

18 Establishing an Accident Prevention Programme

18.1 Introduction

18.1.1 Although there are several ways of establishing an accident prevention programme, there is no single model that “fits all sizes”. Size, complexity, and the type of operation, as well as the corporate safety culture and operating environment, will influence the structure most suited for individual organisations and their unique circumstances.

18.1.2 In some companies, management may believe that they have adequately addressed *“accident prevention”* by appointing a Director of Safety or a Flight Safety Manager. Often, this person is expected to *“manage safety”* and *“prevent accidents”* without a clear set of objectives and priorities, with limited guidance about how to do the work and a lack of resources to adequately undertake the task.

18.1.3 Effective accident prevention is not a single function carried out by a designated organisational element. It needs to be a *“way of thinking”*, shared by all elements of the organisation. The safest organisations take a systemic approach to accident prevention, organising and managing their operations such that they experience proportionally fewer serious occurrences. Safety management considerations are thus integrated into the organisation in the same way that financial considerations are.

18.2 Ten Steps to Getting Started

18.2.1 The following outlines ten steps for establishing an effective accident prevention programme. Integrating each of these elements into a coherent programme in effect implements a *safety management system.* A confirmation checklist is included at each step to highlight the necessary actions.

18.2.2 Step 1 - Senior management commitment

18.2.2.1 The ultimate responsibility for safety rests with the directors and management of the organisation. The whole ethos of a company’s attitude to safety – the company’s safety culture – is established from the outset by the extent to which senior management accepts responsibility for safe operations, particularly the proactive management of risk. Regardless of the size, complexity, or type of operation, the success of the accident prevention programme depends on the extent to which senior management devotes the necessary time, resources and attention to safety as a core management issue.

18.2.2.2 Once hazards start to be identified through the Accident Prevention Programme, senior management must be prepared to commit resources to address those hazards. If left unattended, support for the Accident Prevention Programme will quickly evaporate.

a) Confirmation checklist

1) Senior management is involved – and committed to – the Accident Prevention Programme.

2) Senior management has approved the organisation's safety policy and operational safety standards.

3) The safety policy and standards are communicated to all staff, with visible endorsement by senior management.

4) Appropriate resources are allocated to support the Accident Prevention Programme.

5) Senior management commits resources to correct hazards posing unacceptable risks.

6) Senior management has established an appropriate reporting chain for safety issues.

7) Senior management actively encourages participation in the Accident Prevention Programme.

8) Management promotes a positive safety culture whereby:

i) Safety information is actively sought;
ii) Personnel are trained for their safety responsibilities;
iii) Accident prevention is a shared responsibility;
iv) Safety-related information is actively disseminated to all affected personnel;
v) Potential system failures and hazards lead to prompt managerial inquiries and any necessary reforms;
vi) A formal programme is in place to regularly assess safety performance (e.g. safety surveys, safety audits); and
vii) New ideas related to safety are welcomed.

18.2.3 Step 2 - Policies and objectives

18.2.3.1 Policies

18.2.3.1.1 The purpose of developing safety policies and objectives is to set out what the organisation is striving to achieve, and how it is going to get there. Safety policies outline the methods and processes the organisation will use to achieve desired safety outcomes. They serve as reminders as to "how we do business around here" and are a tangible indication that management is committed to safety.

18.2.3.1.2 The creation of a positive safety culture begins with the issuance of clear, unequivocal direction. This policy statement should be written and communicated to all staff. In preparing a safety policy, senior management should consult widely with staff. Consultation ensures that the document is

relevant to staff, giving them a sense of ownership in it. Corporate safety policy must also be consistent with relevant CAAM regulations.

a) Confirmation checklist

1) A safety policy containing management's expectations has been developed by management and staff and signed by the Accountable Manager (AM).

2) The Safety Policy:

i) Enjoys the commitment and involvement of all staff;
ii) Aligns with other operational policies;
iii) Provides direction for implementing the policy;
iv) States the responsibilities and accountabilities for directors, managers and employees;
v) Is reflected in the actions and decisions of all staff;
vi) Has been communicated to all staff; and
vii) Is reviewed periodically.

18.2.3.2 Objectives

18.2.3.2.1 Related closely to safety policy (and safety culture) is how an organisation sets its objectives. Clearly stated objectives can lead to a commitment to action which will enhance the safety of the organisation. In some organisations no explicit safety objectives are stated. A few exceptional organisations set their objectives formally, clearly enunciating their vision, defining desired outcomes, spelling out the attainable steps for meeting the objectives, and documenting the process.

a) Confirmation checklist

1) Safety objectives and goals are practical, achievable and are regularly reviewed for relevance;

2) Performance standards are established;

3) Goals have deadlines for their fulfillment;

4) Responsibilities for action are clearly understood; and

5) Managers can follow through and hold those responsible to account for their progress towards those goals.

18.2.4 Step 3 - Organisation

18.2.4.1 How an organisation arranges its method of doing business and managing safety will influence its resilience to misadventure and its ability to reduce risks. Two considerations are fundamental to establishing an effective organisation that will support the accident prevention programme:

a) Accident Prevention Adviser; and

b) Organisational Structures.

18.2.4.1.1 Accident Prevention Adviser (APA)

18.2.4.1.1.1 Accident prevention activities need a focal point (or champion) as the driving force for the systemic changes necessary to effect accident prevention across the entire organisation. This task may be allocated to a pilot or other suitable qualified person who acts in the capacity of Safety Officer as a secondary duty. The effectiveness of this arrangement can vary, depending on the amount of time available to carry out the secondary duty and the operational style of the Company. The function is best accomplished by the appointment of a full-time Safety Officer whose responsibility is to promote safety awareness and ensure that the prevention of aircraft accidents is the priority throughout all divisions and departments in the organisation. In this Guidance Material, such safety officers are referred to as Accident Prevention Advisers.

18.2.4.1.1.2 Large organisations have *"staff"* specialists to advise and support the line managers. Staff officers do not have the "*authority"* of line managers to effect the changes necessary for mitigating safety deficiencies. In most organisations the Accident Prevention Adviser (APA) is a *"staff"* position, advising senior management on safety matters. Indeed, a potential conflict of interest arises if an APA also holds responsibilities for line management.

18.2.4.1.1.3 Accident prevention then is a responsibility shared by each line manager, supported by the *"staff"* specialist, the APA. Accident prevention programmes are the line managers' responsibility. Senior management must not hold the APA accountable for line managers' responsibilities; rather the APA is accountable for rendering effective staff support for all line managers to ensure the success of their accident prevention programmes.

18.2.4.1.2 Organisational structures

18.2.4.1.2.1 Two different approaches to organisational structures that are consistent with the requirements for assuring both safety and efficiency in airline operations are outlined below. Both are designed to support a coherent *"safety management system"*. The solid lines represent formal reporting relationships, whilst the broken lines represent informal lines of communication.

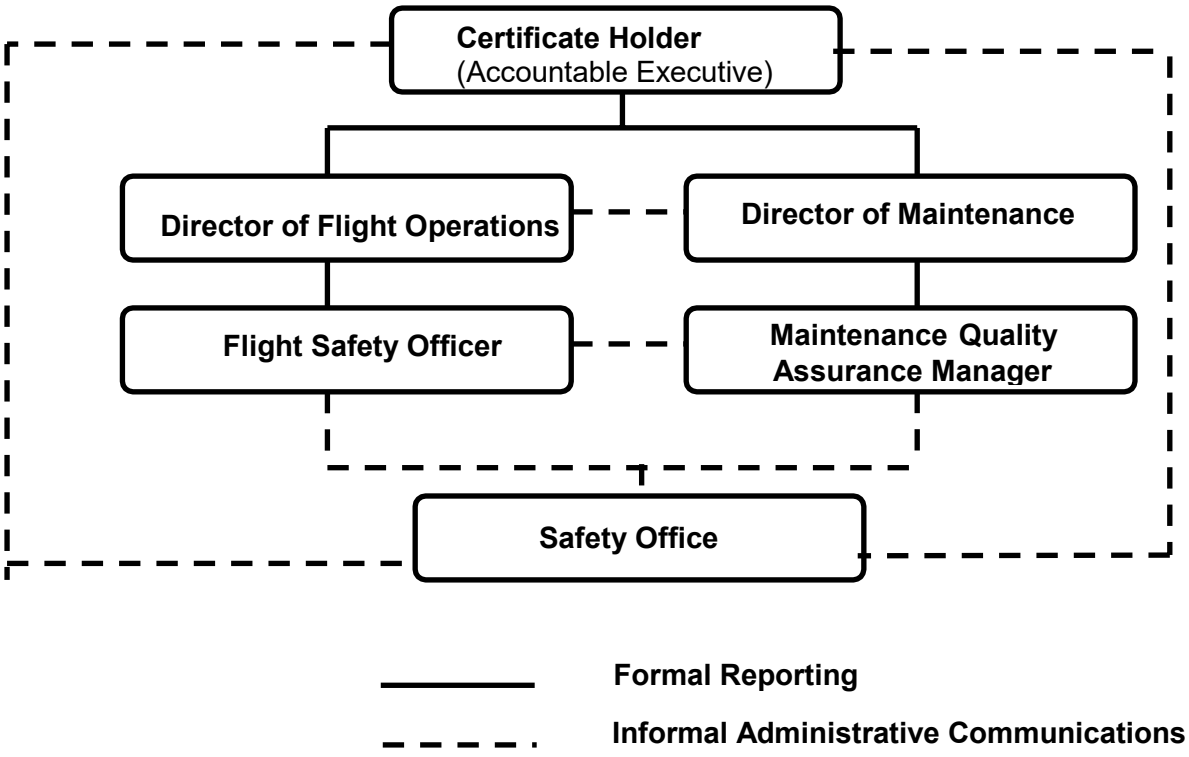


Figure 18-1. Sample organisation A

18.2.4.1.2.2 The sample organisation in Figure 18-1 is typical of many companies with good safety records. The Flight Safety Officer (FSO) reports directly to the Director of Flight Operations. However, the FSO does not have responsibilities for accident prevention in other departments. To cover considerations of safety in maintenance, a Maintenance Quality Assurance Manager (reporting directly to the Director of Maintenance) coordinates informally with the FSO through the *"safety office"*. Although the organisation chart depicts an informal reporting relationship from the Safety Office to the executive level, this structure does not promote a truly systems approach to safety management. Rather, the organisation focuses on safety issues from the perspectives of flight operations and maintenance, only.

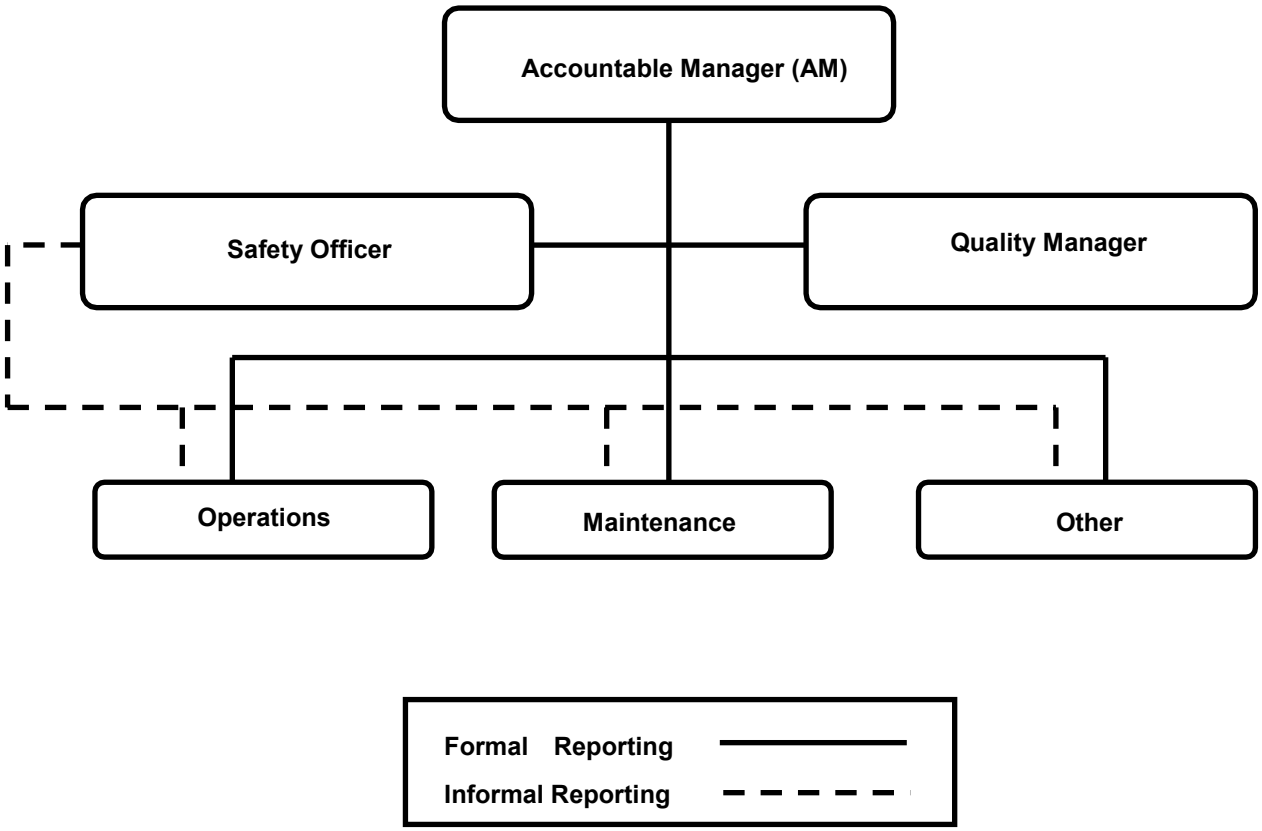


Figure 18-2. Sample organisation B

18.2.4.1.2.3 In the model depicted in Figure 18-2, Sample Organisation B, both the APA and the Quality Manager perform the safety management system functions. However, they both have a direct reporting line to the AM. The safety functions are dispersed throughout the organisation to the Operations, Maintenance and other Departments. The APA and the Quality Manager then coordinate with each other and the Departmental Chiefs, assisting them in the fulfilment of their accident prevention functions. This model broadens the focus over that of Model A and is therefore more consistent with the systems approach to accident prevention.

18.2.4.1.3 Statement of safety responsibilities and accountabilities

18.2.4.1.3.1 Regardless of the organisational arrangement or *"wiring diagram"*, a formal statement of responsibilities and accountabilities is advisable, even in small organisations. This statement clarifies the formal and informal reporting lines on the organisational chart and specifies accountabilities for particular activities. The contents of the statement will vary depending on organisational size, complexity, and relationships.

a) Confirmation checklist

1) The organisational structure facilitates:

i) Line of communication between the APA and the CEO;

ii) Clear definition of authorities, accountabilities and responsibilities avoiding misunderstanding, overlap and conflict (e.g. between APA and the Chief Pilot);
iii) Hazard identification and safety oversight.
iv) An Accident Prevention Adviser (with appropriate competencies and capacity) has been appointed.
v) The roles and responsibilities of the APA (and any staff) are clearly defined and documented.
vi) The APA (and staff) have received appropriate briefings and training.
vii) Staff and management understand and support the roles of the APA, and the APA enjoys the Accountable Manager's full support.

18.2.5 Step 4 - Risk management

18.2.5.1 The risks and costs inherent in commercial aviation necessitate a rational process for decision-making. Implementation of risk management processes is critical to an effective accident prevention programme. Risks cannot always be eliminated; nor are all conceivable accident prevention measures economically feasible. Risk management facilitates this balancing act.

18.2.5.2 Risk management begins with hazard identification. The hazards of any operation may be identified through a variety of reactive and proactive activities. Each identified hazard must be evaluated and its inherent risks assessed in terms of the probability of the hazard contributing to an unsafe event, and the adverse consequences in that eventuality. The next step in the risk management process is to critically assess the hazards and rank them, as far as possible, in order of their risk potential. Factors to consider are the likelihood of the occurrence and the severity of the consequences should there be an occurrence. In assessing the risks, the defences that have been put in place to protect against such hazards need to be evaluated. These defences can, through their absence, misuse, poor design, or condition contribute to the occurrence or exacerbate the risks. Through such a risk assessment process, a determination can be made as to whether the risk is being appropriately managed or controlled. If the risks are acceptable, the operation may continue. If not, then steps should be taken to increase the defences or to remove or avoid the hazard. Typically, there is a wide range of potential risk control measures that may help limit exposure to identified risks. Each alternative risk control option needs to be evaluated, residual risks assessed and cost-benefits analysed. Having decided upon a suitable course of action, management must then communicate its safety concerns and planned actions to all persons affected by the acknowledged risks.

a) Confirmation checklist

1) A system is in place to pro-actively identify hazards.

2) Criteria are established for assessing risks.

3) Staff are involved in analysing and ranking identified risks.

4) Viable risk control measures are evaluated.

5) Management takes specific action to reduce, eliminate or avoid the risks.

6) Staff are aware of the actions taken and receive relevant training where appropriate.

7) Checks are in place to confirm that the actions taken are working as intended.

18.2.6 Step 5 - Hazard identification systems

18.2.6.1 Isolated hazards and risks may not be a significant problem. However, when hazards or risks exist concurrently at many levels, there is an increased probability of an accident or incident.

18.2.6.2 An effective hazard identification system is an essential element of risk management. Indeed, hazard identification is probably **the** major function of any accident prevention programme. The key features of an effective hazard identification system are:

a) Identifying unsafe conditions;

b) Collecting current and applicable hazard information;

c) A procedure for receiving and actioning reports of hazards;

d) A reliable method of accurately recording, storing, and retrieving hazard data;

e) The capability to analyse hazard reports, both individually as well as in aggregate;

f) A procedure for distributing lessons learned to affected staff and contractors; and

g) Capable of being audited.

18.2.6.3 By virtue of his unique perspective within the organisation, the APA has a valuable role to play in the operation of all hazard identification programmes.

a) Confirmation checklist

1) A trusting (non-punitive) environment is fostered by management;

2) Formal mechanisms are in place for the systematic identification of hazards;

3) All identified hazards are recorded and investigated;

4) Staff involved in any recorded or reported incident are aware they will not be penalised for normal errors;

5) Affected staff are kept informed of efforts to reduce or eliminate identified hazards; and

6) A system is in place to allow the APA to monitor the status of each identified hazard.

18.2.7 Step 6 - Investigation capability

18.2.7.1 While CAAM may investigate mandatorily reportable accidents and serious incidents, an effective accident prevention programme includes the capability to investigate such occurrences from a company perspective. The investigation of minor accidents and incidents (not reported to CAAM) provides another source for hazard identification. The accident prevention value of these investigations is proportional to the quality of the investigative effort. Without a structured methodology, it is difficult to integrate and analyse all pertinent information from such investigations so as to efficiently assess and prioritise the risks, and to recommend any necessary actions to advance safety. Determination of blame is not relevant to such safety investigations.

a) Confirmation checklist

1) The APA and key staff have received formal training in safety investigations;

2) Each hazard and incident report is evaluated with further safety investigation as necessary;

3) Management supports the acquisition and analysis of safety information;

4) Management takes an active interest in investigation findings;

5) Safety lessons learned are widely disseminated; and

6) The regulatory authority is apprised of significant safety concerns potentially affecting other operators, or requiring action by the regulatory authority.

18.2.8 Step 7 - Safety analysis capability

18.2.8.1 Safety analysis is the process of organising and evaluating facts, so that valid conclusions can be drawn. It can also be used to identify hazards from aggregated data, to validate and assess the seriousness of identified risks, to evaluate risk control options and to assess the effectiveness of any actions taken to mitigate those risks, etc. A range of analytical methods and tools are available for conducting meaningful safety analyses. Credible risk assessments and convincing argument for mitigating risks depend on solid analytical capabilities.

a) Confirmation checklist

1) The APA is experienced in or has received training in analytical methods, or has access to competent safety analysts;

2) Analytical tools are available to support safety analyses;

3) The organisation maintains a safety database;

4) Other information sources are accessible;

5) Hazard information and performance data is routinely monitored (trend analysis, etc.);

6) Safety analyses are subject to a challenge process (peer review);

7) Safety recommendations are made to management and appropriate corrective actions taken.

18.2.9 Step 8 - Safety promotion, training and education

18.2.9.1 Keeping staff informed about current safety issues through relevant training, safety literature, participation in safety courses and seminars, etc. improves the safety health of the organisation. The provision of appropriate training to all staff (regardless of their professional discipline) is an indication of management's commitment to an effective accident prevention programme. (Weak management may see training as an expense, rather than as an investment in the future viability of the organisation.)

18.2.9.2 New employees need to know what is required of them and how the organisation's accident prevention programme functions. Indoctrination training should emphasize, "How we do business here". The APA is the logical resource person for providing a corporate perspective on the organisation's approach to accident prevention.

a) Confirmation checklist

1) Management recognises that all levels of the organisation require training in accident prevention, and that the needs vary across the organisation;

2) All personnel receive safety indoctrination training and participate in specific on-going training for accident prevention;

3) The organisation has an effective programme for the timely promotion of safety issues;

4) Staff are aware of their role in accident prevention and understand how the various elements of the accident prevention programme work;

5) Additional safety awareness training is provided when the operating environment changes (seasonal changes, operational conditions, regulatory requirements, etc.);

6) Staff understand that accident prevention has nothing to do with attributing blame.

18.2.10 Step 9 - Safety information management system

18.2.10.1 Operating an accident prevention programme generates significant amounts of information — some of it as documents, some of it data in electronic format. With careful management, this information can well serve the accident prevention programme, particularly the risk management process. However, without the tools and skills to record, store, and retrieve this information, it is essentially useless and its collection a waste of time.

a) Confirmation checklist

1) Management supports the need for careful documentation and data control;

2) The accident prevention programme is documented;

3) Documents are readily available to those who need them;

4) Safety databases contain relevant, reliable and up-to-date information in a user-friendly format (i.e. readily accessible, standardised for comparative analysis, containing sufficient detail, etc.); and

5) Staff have received the necessary training for maintaining and using the safety information management system.

18.2.11 Step 10 - Safety oversight and programme evaluation

18.2.11.1 Taking a systems approach to accident prevention requires “closing the loop”. Feedback is necessary to assess how well the first **nine** steps are working. This is done through safety oversight and programme evaluation.

18.2.11.2 Safety oversight can be achieved through inspections, surveys and audits. Are people doing what they are supposed to be doing? For many large organisations, formal safety audits are regularly conducted as a method of providing oversight of day-to-day operations. Safety audits assure staff and management that company activities are being performed as required (i.e. safely). Smaller organisations may get the necessary feedback less formally, through informal observations and discussion with personnel.

18.2.11.3 Programme evaluation validates the accident prevention programme, not only confirming that people were doing what they were supposed to be doing, but that the impact of their collective efforts had achieved the programme’s objectives. Through regular review and evaluation, management can pursue continuous improvement in the accident prevention programme and ensure that the programme remains effective and relevant to the organisation’s operation.

a) Confirmation checklist

1) Management understands the importance of (and the differences between) safety oversight and programme evaluation;

2) Adequate resources are allocated to the safety oversight and programme evaluation functions;

3) Staff input is sought and provided without fear of repercussion;

4) Regular safety audits are conducted for all functional areas of the organisation (including the activities of contracting agencies);

5) Programme evaluations include the systematic review of all available feedback including: quality assurance programme results, safety trend analyses, safety surveys, safety audits, etc.; and

6) Findings are communicated to staff and reform measures are implemented as required to strengthen the system.

19 Appendices

19.1 Appendix 1 – Instructions for the Completion of the Prospective Operator's Pre-Assessment Statement

Notes to applicant

General

1. This form may take you about 2 hours to fill in. Please ensure form is correctly filled; the applicable fee is fully paid and that all required supporting documentation is provided. Incomplete/incorrect form or/and inadequate payment will lead to delays in processing your application.
2. Applications shall be submitted as early as possible before the planned commencement date of operation. .The certification process usually takes 9 months from submission of the Formal Application, subject to full compliance by the applicant and taking into consideration the time required for the entire certification process and its complexity. **Where space is insufficient for the information required, the words "See Attachment 1,2,3" etc should be written and the necessary attachments supplied with the application form.**
3. Completed form and supporting documents are to be submitted with the AOC application fee (non-refundable) to one of the following addresses:

Mailing address	**Office address (for hand delivery)**
Director, Flight Operations Division Civil Aviation Authority of Malaysia 27 Persiaran Perdana Level 2 Podium Block, Precinct 4 62618 Putrajaya, Malaysia.	Civil Aviation Authority of Malaysia Pihak Berkuasa Penerbangan Awam Malaysia No. 27 Persiaran Perdana Aras 1-4 Blok Podium 62618 Putrajaya Malaysia

Payment

4. The fee payable for this purpose is prescribed in Civil Aviation (Fees and Charges) Regulations.
5. Payment for this application can be made via cheque.
6. Crossed cheque payment must be made payable to "Civil Aviation Authority of Malaysia".

Collection

7. You will be notified when the certificate is ready for collection at the Airworthiness / Flight Operations Division office.

NOTE 1

DBA means Doing Business As. DBA allows you to conduct business under a name other than your organisation's name. Insert "DBA" before the trading name.

NOTE 2

Operator principal place of business telephone and fax details, including the country code. E-mail to be provided if available.

NOTE 3

Contact details, at which operational management can be contacted without undue delay.

NOTE 4

The particulars given should be those of the person who will be the operator of the aircraft, in the case of an incorporated body, the body, the names, addresses and nationality of the Directors, and the Chief Executive Officer (or Managing Director of General Manager), and in the case of an unincorporated corporation, the names, addresses and nationality of all partners. This list should reflect the organisational structure of the company applying for the AOC and the financial data and business plan.

NOTE 5

Give the manufacture and model of aircraft (for which a Certificate is required) to be operated (e.g. Boeing 777-300ER, Airbus A330-300) and the number of each type and state of registry and registration marks, owned or immediately available for operation by the applicant. If aircraft are not currently available, give the date on which they will be.

NOTE 6

State whether the aircraft will be used for the public transport of passenger and/or cargo. If the proposed operations include carriage in specialized fields (e.g. dangerous goods, vehicle ferry, live animals, etc), please give details.

NOTE 7

This relates to the normal operating bases for each type of aircraft used by the applicant. If appropriate, please give also the “trading name” at each aerodrome.

NOTE 8

If more than one type of aircraft is to be operated, give the starting dates proposed for each type.

NOTE 9

A separate list of routes (including alternate routes) should be provided for each type of aircraft. Please name each aerodrome to be used on each route, including technical stops and alternate aerodromes.

NOTE 10

Give details of the address, location and size of accommodation to be used by operating staff (including administrative and support staff). Please state whether the accommodation is to be used solely by the applicant's staff or otherwise.

NOTE 11

The minimum time between receipt of completed manuals and the proposed date for the commencement of operations is nine months. If manuals are not submitted with the application, please give date(s) when they will be presented for inspection. Applicants shall ensure that the validity of the manuals submitted to CAAM is maintained at all times.

NOTE 12

If the routine ground handling and maintenance of the applicant's aircraft is carried out by a number of contractors or service providers, please list them all and give details of the work for which each is responsible. CAAM will advise the applicant if further information is required. Reference to the Malaysia Airworthiness Requirements should be made. Details of leasing contracts should be attached.

NOTE 13

Please list the names, qualifications and experience of the persons (e.g. Designated Flight Examiner, Flight Instructor, Safety and Emergency Procedures Instructor/Examiner etc) responsible for testing:

(a) The crew (as to their knowledge of the use of emergency and lifesaving equipment)
(b) Pilots
(c) Engineers, if any
(d) Flight Radio Applicants, if any

The persons named should be those authorised by the applicant/CAAM to sign on its behalf. Records are to be maintained under the relevant provisions of the MCAR 2016.

NOTE 14

1. The information provided under this heading should give a clear picture of the chain of responsibility for all major aspects of management and of the arrangements for suitably qualified deputies to assume the functions of Senior Executive temporarily absent from duty. In particular, the persons responsible for the following duties should be named:

a) The issue and amendment of operations and training manuals, and other instructions to members of operating crew;
b) Management of the operations department;
c) Controlling the rostering of crew for flying duty;
d) General supervision of flight operations;
e) Accepting operational commitments - i.e. deciding whether or not a particular flight or charter can be undertaken;
f) Ensuring the crew and ground personnel training and periodic tests are carried out as necessary;
g) The discipline and general supervision of each grade of flying staff;
h) Control and general supervision of the traffic or other department responsible at the main operating base(s) for compiling ship papers (including loadsheets) and for the loading aircraft;

i) Co-ordinating any necessary action arising from Commanders' voyage reports;
j) Making arrangements for the service of handling agents.

Note: - Provided all the necessary information is given, it can be presented in the form best suited to the applicant's organisation and general circumstances.

2. Please state the number of subordinate ground staff reporting to each person named under this heading.

19.2 Appendix 2 – Prospective Operator's Pre – assessment Statement (POPS)

19.2.1 The Latest POPS form may be obtained from the CAAM website.

19.3 Appendix 3 – Layout of an Air Operator's Certificate (AOC)

(2)

CIVIL AVIATION AUTHORITY OF MALAYSIA

(1)

AIR OPERATOR CERTIFICATE

AOC NO. (3)	OPERATOR NAME (5)	OPERATIONAL POINTS OF CONTACT (9)
Expiry date: (4)	Dba trading name: (6)	Contact details, at which operational management can be contacted without undue delay, are listed in: (10)
	OPERATOR ADDRESS (7)	
	Telephone: (8)	POINT OF CONTACT:
	Fax:	Telephone:
	Email:	

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.

Date of issue: (12)	Signature: (13)
	Name:
	Title:

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")

(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.

19.4 Appendix 4 – Layout of 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: Chief Executive Officer (CEO) 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 authorised 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 and CAT III). 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/organisation responsible for ensuring that the continuing airworthiness of the aircraft is maintained.

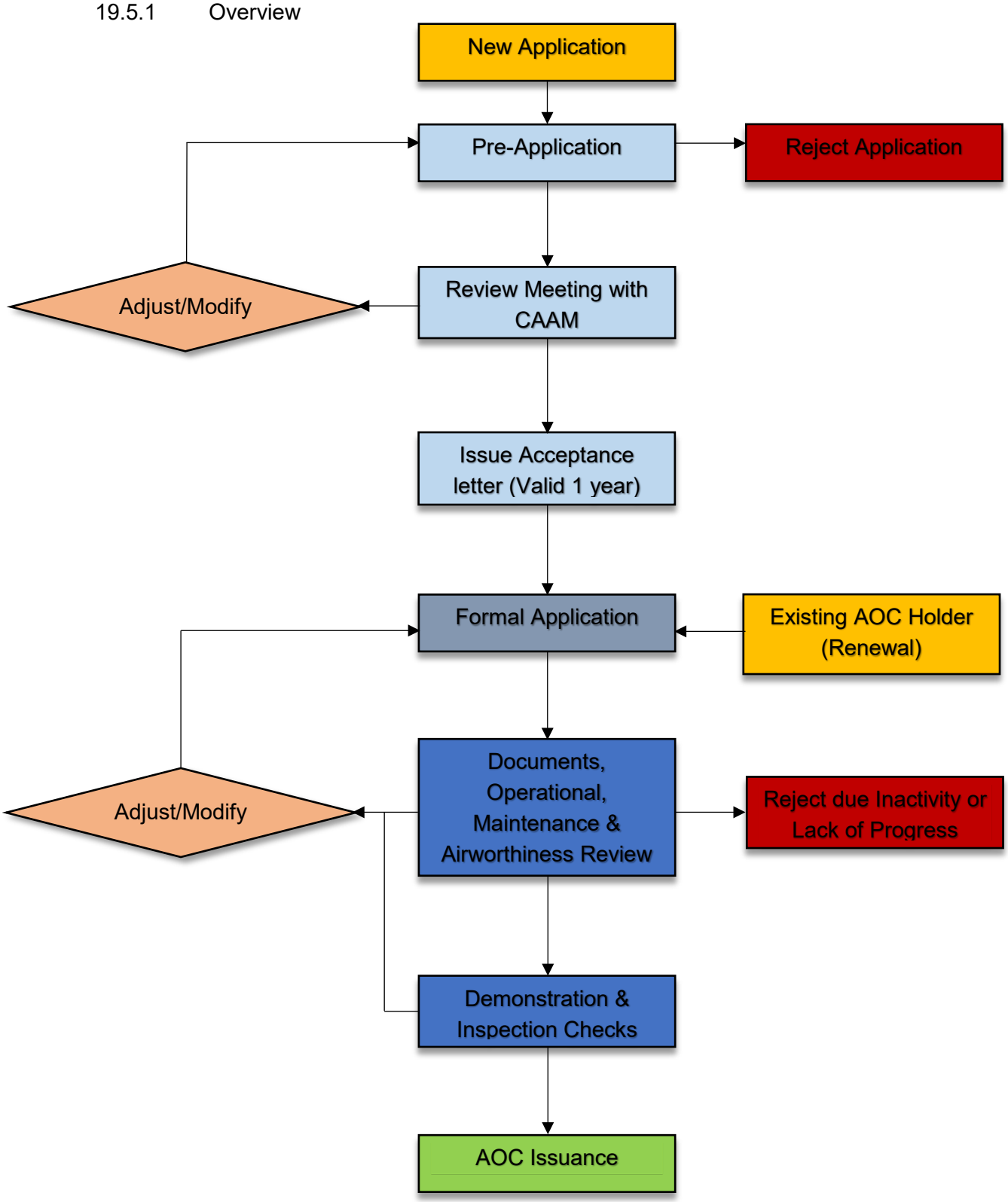
(19) List the EFB functions with any applicable limitations.

(20) Other authorisations or data can be entered here, using one line (or one multi-line block) per authorisation (e.g. special approach authorisation, MNPS, approved navigation performance).

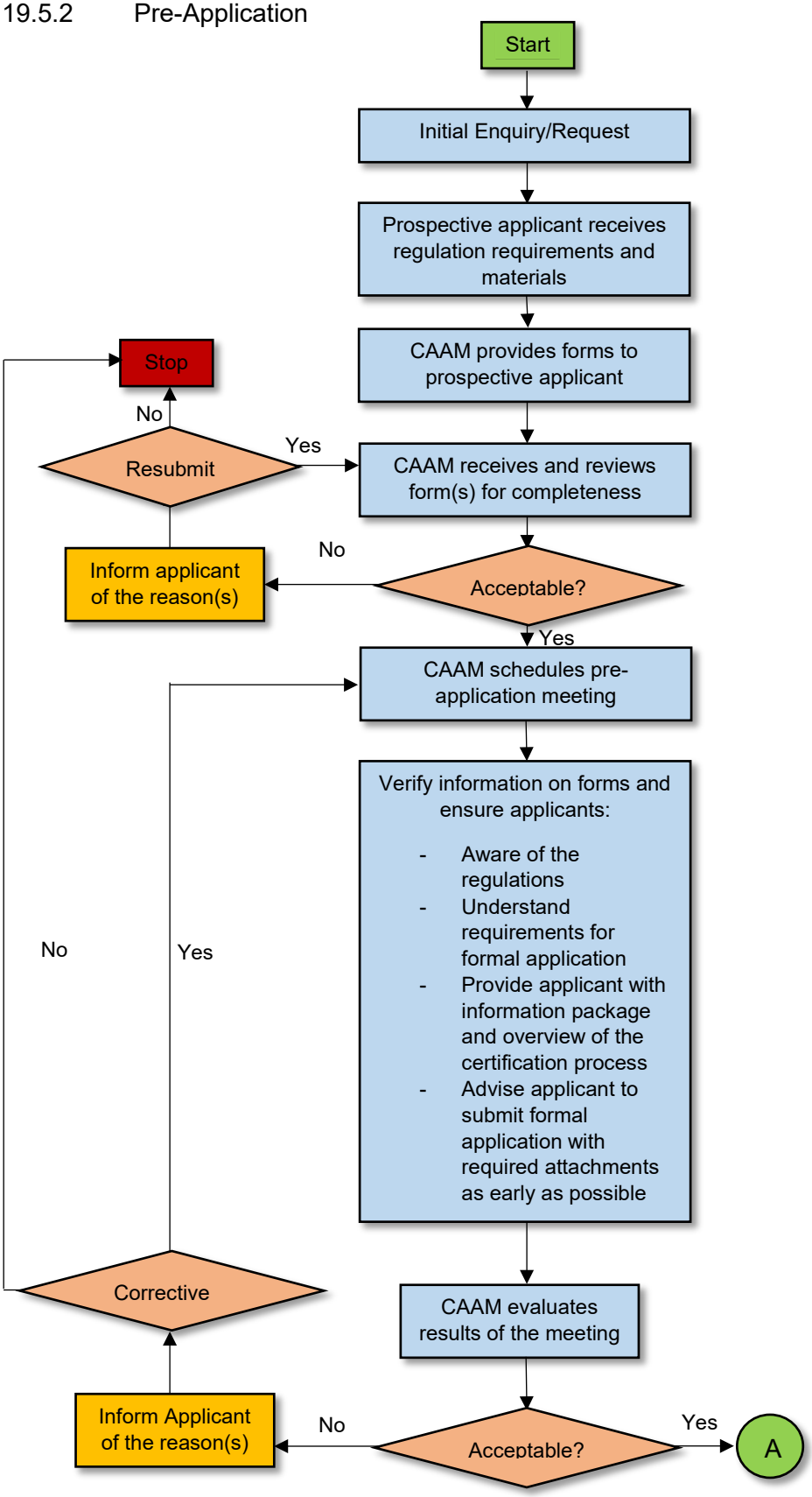
(21) Reflect the revision control number.

19.5 Appendix 5 – Certification flow chart

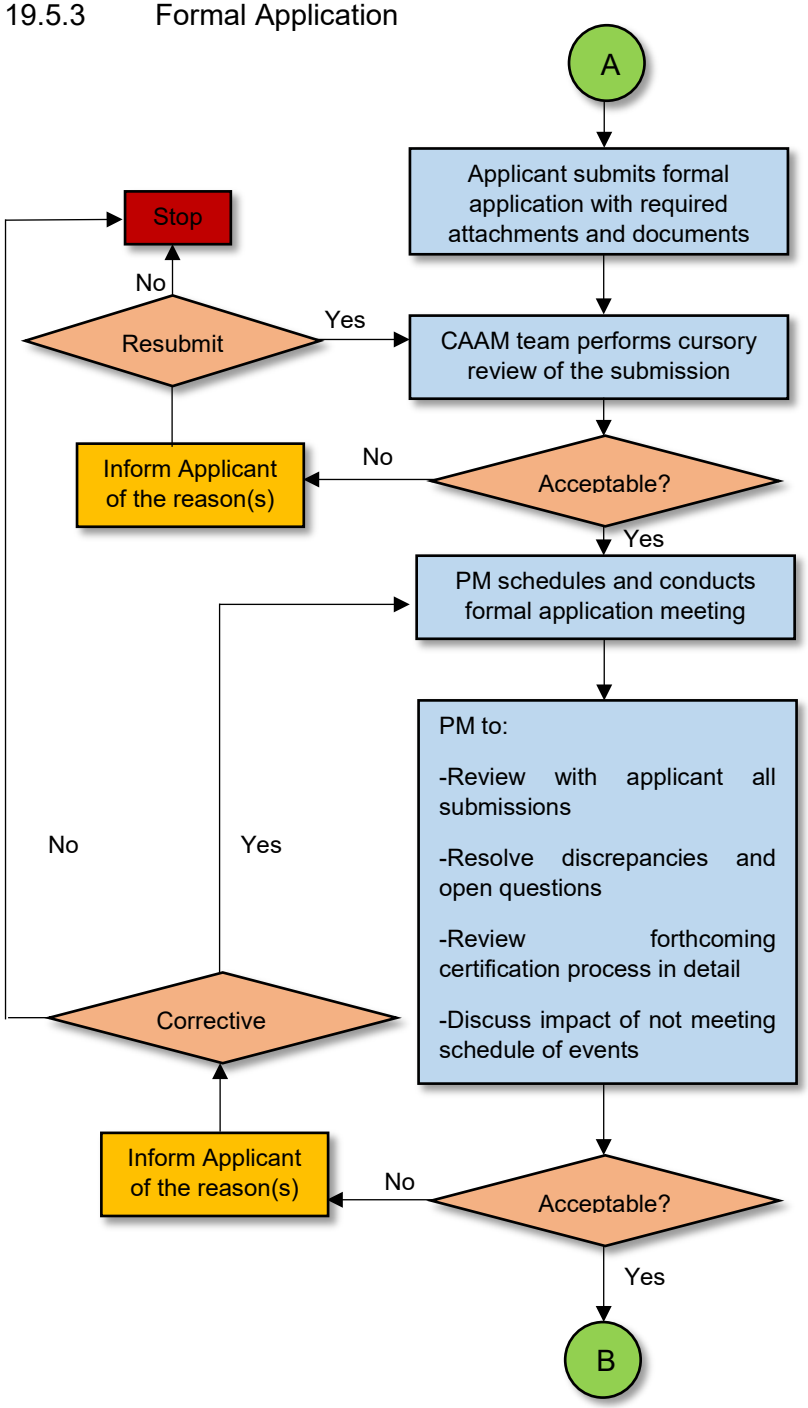
19.5.1 Overview



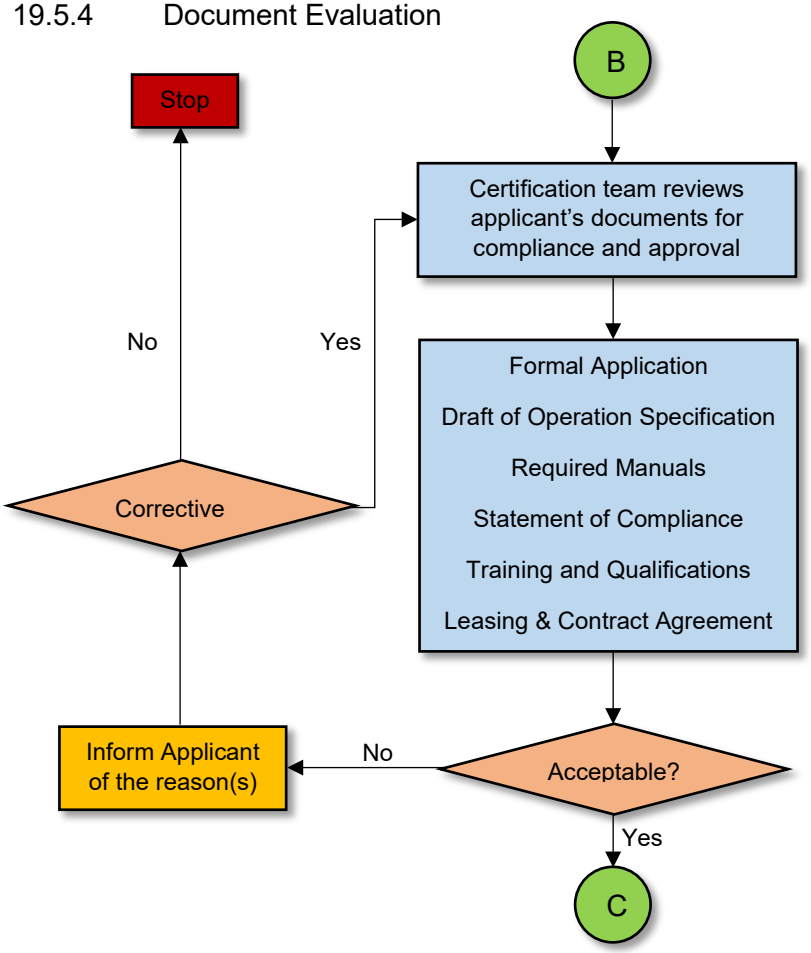
19.5.2 Pre-Application



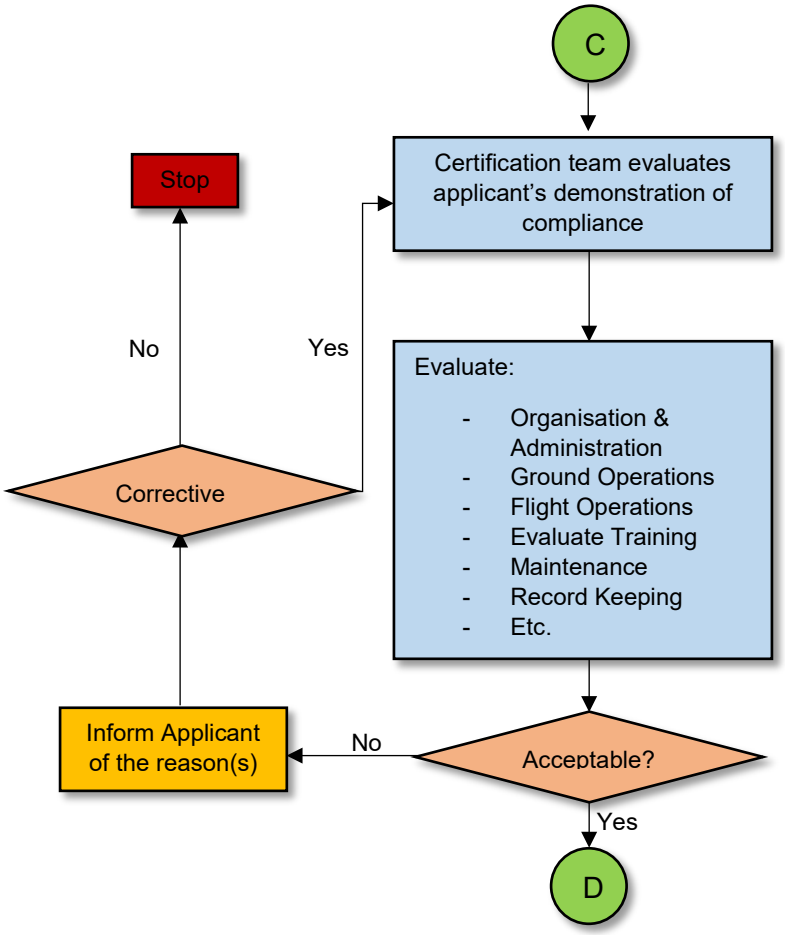
19.5.3 Formal Application



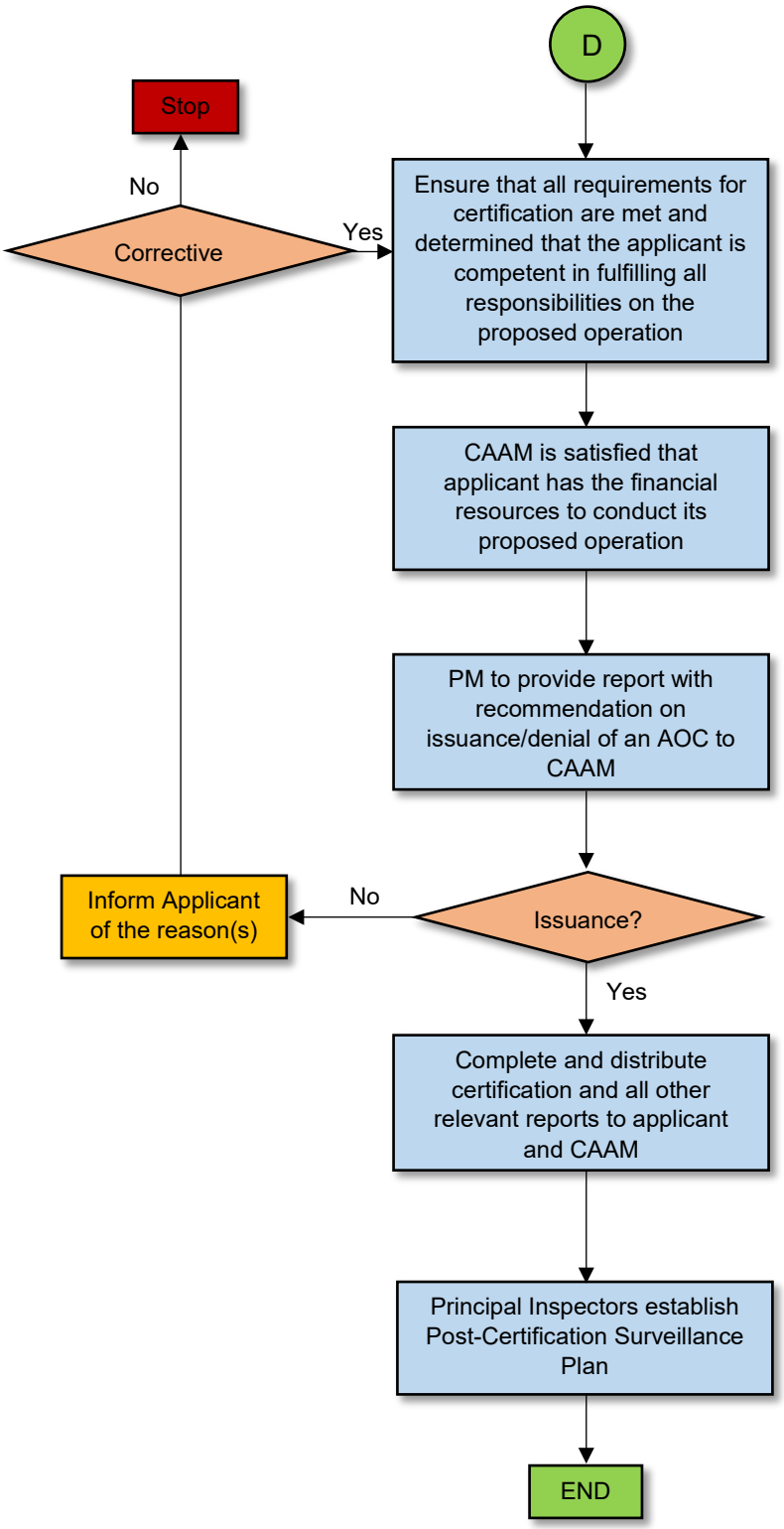
19.5.4 Document Evaluation



19.5.5 Operational Demonstration and Inspection



19.5.6 Certification



19.6 Appendix 6 - Operator's AOC Audit Report Format

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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Email address: [Name of POI]@caam.gov.my

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 **(Appendix 7)**
SECTION 4B – REMARKS BY CAAM (TO BE COMPLETED BY PRINCIPAL OPERATIONS INSPECTOR AFTER REVIEWING OPERATOR'S FEEDBACK)

Flight Operations Sector,
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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

19.7 Appendix 7 - Operators AOC Audit Response Format

	CIVIL AVIATION AUTHORITY OF MALAYSIA
OPERATORS AOC AUDIT RESPONSE	

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:		

19.7.1 Operator's 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

i) 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

i) Sufficient root cause analysis by the responsible person to identify the origin of the finding.

3) Root Cause Correction

i) Sufficient root cause correction by the responsible person that should significantly reduce or eliminate the chance of recurrence.

4) Follow Up

i) Timely follow up by line management or the quality assurance programme to verify the effectiveness of the corrective action taken.

5) Closure

i) A statement from the Head of Quality Assurance/Quality Manager or equivalent stating his/her reasons for acceptance of the corrective actions taken.

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

19.8 Appendix 8 – Facilities and Documentation – Air Operator Certificate

19.8.1 Facilities

19.8.1.1 These facilities should be located at the main base and other locations where the operator is operating. The buildings to be utilised by the operator at each base and terminal, should be properly equipped.

19.8.1.2 The buildings should accommodate the necessary sanitary facilities and security and emergency controls, warnings and equipment; and are adequate for the operation to be conducted.

19.8.1.3 The operator's facilities, equipment and support services necessary for the safe operation of the aeroplane should include, but not limited, to the following:

a) Aeroplane.

b) Airport and stations facilities.

c) Communication facilities and equipment.

d) Office accommodation and storage facilities.

e) Hangars.

f) Maintenance and Overhaul workshops.

g) Operations and dispatch facilities.

h) Load control facilities.

i) Passenger service areas and handling facilities (if applicable).

j) Cargo storage and handling facilities (if applicable).

k) Training facilities.

l) Other ground handling facilities.

m) Rescue and firefighting facilities.

19.8.1.4 It will also be necessary for the operator to ensure that facilities located in other States, which are to be utilised, are adequate, which should include, but not limited to those that are stated in the provision in paragraph 19.8.1.3 above.

19.8.2 Documentation

19.8.2.1 Each operator must provide and maintain:

a) at the main operating base where the operator maintains flight crew rostering staff - an operations library of maps, charts, flight guides and other documents required for carriage in flight or for reference or planning purposes;

b) a reference library of operational documents which is readily available to all operating crew and staff and which includes;

1) Operations Manuals;
2) Training and Checking manuals;
3) Ground Handling Manual
4) Dangerous Goods manuals;
5) Flight Manual and Minimum Equipment List
6) Flight crew operating manual (where applicable);
7) Operator's Security Programme Manual;
8) NOTAMS
9) AIPs, AIC and AIRAC as appropriate;
10) CAME;
11) A copy of the Malaysia Civil Aviation Regulation 2016; and
12) CADs, Circulars and Notices issued by the CEO and required for reference by the personnel of the operator.

19.8.2.2 The documentation referred to in paragraph 19.8.2.1 is the minimum requirements. The documents must be kept in an orderly fashion and must be regularly updated and the responsibility for its maintenance must be clearly defined.

19.8.2.3 Each operator must distribute updated operational material to flight crews and other operating staff as appropriate, and must maintain records of that distribution.

19.8.2.4 Each operator must maintain up-to-date records as per Appendix 10 – Table of Record Retention.

19.9 Appendix 9 - List of Mandatory Documents and Manuals

CAAM/BOP/AOC/09

	CIVIL AVIATION AUTHORITY OF MALAYSIA
LIST OF MANDATORY DOCUMENTS AND MANUALS	

No		Main Base	Hub	Station	Notes	Remarks
REGULATORY						
1	Civil Aviation Regulation (CAR 2016)	X	X	X	H/S	Latest Update
2	Malaysia Aeronautical Information Publication (AIP)	X	X		H/S	
3	CAD, CAGM, CAC and CAN	X	X		H/S	
4	Foreign AIP	X	X		S	Overseas flight
5	Foreign Aeronautical Information Circular (AIC)	X	X		S	Overseas flight
6	Relevant Local AIP			X	S	
7	Relevant Local AIC			X	S	
8	Relevant Local Civil Aviation Regulations	X	X	X	H/S	Link address
9	Dangerous Goods Handbook (Emergency Response Guidance)	X	X	X	H	DG operator only
10	Dangerous Goods Regulations (IATA)	X	X	X	S	
11	Live Animal Regulations (IATA)	X	X	X	S	Carriage of live animal
12	Perishable Cargo Regulations	X	X	X	S	
13	ICAO Annex 1-19	X			H/S	
FLIGHT OPERATIONS						
1	*OM-A	X	X	X	H/S	
2	*OM-B (No 5 – 15)	X	X		H/S	
3	*OM-C	X	X		H/S	
4	*OM-D	X			H/S	
5	*Aircraft Flight Manual (AFM)	X			H/S	
6	*Flight Crew Operations Manual	X			H/S	

	(FCOM)					
7	*Flight Crew Training Manual (FCTM)	X			H/S	
8	*Flight Dispatch Manual	X	X	X	H/S	If applicable
9	*Runway Take-off Analysis Chart	X	X	X	H/S	
10	*Safety Emergency Procedures Manual (SEP)	X			H/S	
11	*Standard Operating Procedures	X	X		H/S	
12	*Aircraft Weight and Balance	X	X	X	H/S	
13	*De-icing Procedures	X	X	X	H/S	Winter operation
14	*Minimum Equipment List (MEL)	X	X		H/S	
15	*Configuration Deviation List (CDL)	X	X		H/S	If applicable
16	Cabin Crew Policy Manual (CCPM)	X			H/S	If applicable
17	Cabin Crew Training Manual	X			H/S	If applicable
18	Aviation terminology and cabin familiarisation manual (ACFM)	X			H/S	
19	*Safety Management System Manual	X	X	X	H/S	
20	*Route Manual (Jeppessen/Lido/Naviga/etc)	X	X		H/S	
21	Flight Data Analysis Manual	X			H	
CERTIFICATES						
1	Malaysia AOC	X	X	X	H	Certified True Copy
2	Foreign AOC Validation	X	X	X	H	If applicable
GROUND OPERATIONS						
1	Ground Operations Manual	X	X	X	H/S	
2	Ground Handling Manual	X	X	X	H/S	
3	Cargo Manual	X	X	X	H/S	If applicable
4	Security Programme Manual	X	X	X	H/S	
5	Corporate Emergency Operations Manual	X	X		H/S	
6	Station Emergency Response Plan	X	X	X	H/S	
7	Local Airport Emergency Plan/Manual	X	X	X	H/S	

OTHERS						
1	First Aid Booklet/Poster/References	X	X	X	H	
2	Emergency Telephone List	X	X	X	H	
3	Station Head Handbook	X	X	X	H/S	

Note1: -

S = Soft copy *H = Hard copy* *H/S = Hard copy or Soft copy.*

*Note 2: - The usage of soft copies for documents marked with an * is dependent on the AOC holder demonstrating reliability of their Electronic Document Management System.*

Note3. – CAD = Civil Aviation Directives

CAGM = Civil Aviation Guidance Material.

CAC = Civil Aviation Circular

CAN = Civil Aviation Notice

19.10 Appendix 10 – Table of Record Retention

19.10.1 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	As stated in CAD 18 - NTDGP
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	As stated in CAD 18 - NTDGP
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

**Flight Recorder Records - The operator shall ensure, to the extent possible, in the event the aeroplane becomes involved in an accident or incident, the preservation of all related flight recorder records and, if necessary, the associated flight recorders, and their retention in safe custody pending their disposition.*

Note: - Please refer to CAD 6 Part 1 and 3 and CAD 19 for more information on Fatigue Risk Management System and Flight Time Limitations.

19.10.2 Training File Content and Arrangement

19.10.2.1 The requirement for training file content and arrangement shall be as follows:

a) Biodata

b) Employment Letter

c) Job Specifications (Management only)

d) Mandatory courses attended

e) Training document:

1) Initial Type Rating/Endorsement/Differences Course/Course

2) Line Oriented Flying Training (LOFT)

3) License Proficiency Check (LPC)

4) Instrument Rating Test/Renewal

5) Line Check

6) Upgrading/Command

7) Others (related to operations- cabin crew, ground operations staff)

f) Training/Courses/FI/DFE Certificates

g) Licence or Certificate. (Pilot licence, Cabin crew member's attestation, dispatcher, loadmaster, driving licence – ramp staff and et cetera)

h) Yearly Training Programme

Note: – Courses are categories as but not limited to CRM, SEP, Recurrent Courses, DGR/DGA, etc.

20 Attachments

20.1 Attachment A – Formal Application Form (CAAM/BOP/AOC/05)

20.1.1 The latest POPS application form may be obtained on the CAAM Website.

20.2 Attachment B – SMS Initial Review Guide

20.2.1 Instructions:

20.2.1.1 Table Attachment B-1 is a regulatory SMS assessment checklist (85 questions) which can be used for the initial assessment and acceptance of an air operator's SMS. For an initial acceptance process, the assessment questions need to be comprehensive in order to adequately address all SMS elements of the organisation. This will ensure that all elements and their related processes are in place within the organisation. The operational aspects of the SMS would be more appropriately addressed during subsequent routine review of the SMS (see Attachment C).

20.2.1.2 Those air operators implanting a full SMS when applying for an AOC should achieve an assessment result of 85%. For those air operators implementing SMS through a phased implementation acceptable to the CAAM, the minimum acceptable performance procedure illustrated in the Corrective Action Notice of Table Attachment B-1 provides for a three-stage minimum acceptable score criteria. This procedure can facilitate the regulator's progressive assessment of the service provider's SMS implementation process, instead of auditing only after an air operator's SMS has been fully implemented or is mature. Such a progressive assessment protocol will also ensure that the regulator is actively involved in monitoring the operator's SMS implementation from the early phases.

20.2.1.3 Where a phased-element SMS implementation approach is adopted, the questions in the checklist may need to be reconfigured and adapted to align with the specific spread of elements across the relevant phases.

20.2.1.4 An illustrative corrective action notice (CAN) procedure is provided at the end of the checklist.

20.2.1.5 The completed SMS assessment checklist will be used by inspectors to plan the on-site review of the SMS.

20.2.1.6 After the on-site review is satisfactorily completed, the PM will sign the On-Site Review record.

Table Attachment B-1. SMS assessment checklist – Initial SMS acceptance

	CIVIL AVIATION AUTHORITY OF MALAYSIA
	SMS ASSESSMENT CHECKLIST – INITIAL SMS ACCEPTANCE

SMS Assessment Checklist — Initial Acceptance			SMS audit checklist routine /Date:
Input column (shaded boxes): Annotate "Y" for Yes," N " for No, "N/A" for not applicable			
Organisation name:	Date of assessment:	Assessed by POI/PMI:	Ref:

SMS Element	Level 1	Input	Doc ref/ remarks	Level 2	Input	Doc ref/ remarks	Level 3	Input	Doc ref/ remarks
agement commitment and responsibilities [1.1]	**SMS Component 1. Safety Policy and Objectives**								
	1.1/L1/1			1.1/L2/1			1.1/L3/1		
	There is a documented safety policy statement.			There is evidence that the safety policy is communicated to all employees with the intent that they are made aware of their individual safety obligations.			There is a periodic review of the safety policy by senior management or the safety committee.		
	1.1/L1/2			1.1/L2/2			1.1/L3/2		

	The safety policy is relevant to aviation safety.		The safety policy is endorsed by the accountable manager.		The accountable manager's terms of reference indicate his overall responsibility for all safety issues.		
	1.1/L1/3		1.1/L2/3				
	The safety policy is relevant to the scope and complexity of the organisation's operations.		The safety policy addresses the provision of the necessary human and financial resources for its implementation.		–		
Safety accountabilities [1.2]	1.2/L1/1		1.2/L2/1				
	There is a documented safety (SMS) accountability within the organisation that begins with the accountable manager.		The accountable manager's terms of reference indicates his ultimate responsibility for his organisation's safety management.		–		
	1.2/L1/2		1.2/L2/2				
	The accountable executive has final authority over all the aviation activities of his organisation.		The accountable manager's final authority over all operations conducted under his organisation's certificate(s) is indicated in his terms of reference.		–		

SMS Element	Level 1	Input	Doc ref/ remarks	Level 2	Input	Doc ref/ remarks	Level 3	Input	Doc ref/ remarks
Safety accountabilities [1.2]	1.2/L1/3			1.2/L2/3			1.2/L3/1		
	There is a safety committee (or equivalent mechanism) that reviews the SMS and its safety performance.			For a large organisation, there are departmental or section safety action groups that work in conjunction with the safety committee.			The safety committee is chaired by the accountable manager or (for very large organisations) by an appropriately assigned deputy, duly substantiated in the SMS manual.		
	1.2/L1/4			1.2/L2/4			1.2/L3/2		
	The safety committee includes relevant operational or departmental heads as applicable.			There is an appointed safety (SMS) coordinator within the safety action group.			The safety action groups are chaired by the departmental or section head where applicable.		
Appointment of key safety personnel [1.3]	1.3/L1/1			1.3/L2/1			1.3/L3/1		
	There is a manager who performs the role of administering the SMS.			The manager responsible for administering the SMS does not hold other responsibilities that may conflict or impair his role as SMS manager.			The SMS manager has direct access or reporting to the accountable manager concerning the implementation and operation of the SMS.		
	1.3/L1/2						1.3/L3/2		
	The manager performing the SMS role has relevant SMS functions included in his terms of reference.			–			The SMS manager is a senior management position not lower than or subservient to other operational or production positions.		
Emergency	1.4/L1/1			1.4/L2/1			1.4/L3/1		

There is a documented ERP or equivalent operational contingency procedure.	The ERP includes procedures for the continuing safe production, delivery or support of aviation products or services during such emergencies or contingencies.	The ERP addresses relevant integration with external customer or subcontractor organisations where applicable.	
1.4/L1/2	1.4/L2/2	1.4/L3/2	
The ERP is appropriate to the size, nature and complexity of the organisation.	There is a plan for drills or exercises with respect to the ERP.	There is a procedure for periodic review of the ERP to ensure its continuing relevance and effectiveness.	
1.4/L1/3	1.4/L2/3		
The emergency plan addresses possible or likely emergency/crisis scenarios relating to the organisation's aviation product or service deliveries.	ERP drills or exercises are carried out according to plan and the result of drills carried out are documented.	–	

SMS Element	Level 1	Input	Doc ref/ remarks	Level 2	Input	Doc ref/ remarks	Level 3	Input	Doc ref/ remarks
SMS documentation [1.5]	1.5/L1/1			1.5/L2/1			1.5/L3/1		
	There is an SMS document or exposition which is approved by the accountable manager and accepted by the CAA.			The SMS document is accepted or endorsed by the organisation's national aviation authority.			The SMS procedures reflect appropriate integration with other relevant management systems within the organisation, such as QMS, OSHE, security, as applicable.		
	1.5/L1/2			1.5/L2/2			1.5/L3/2		
	The SMS document provides an overview or exposition of the organisation's SMS framework and elements.			The SMS document's exposition of each SMS element includes cross-references to supporting or related procedures, manuals or systems as appropriate.			The SMS procedures reflect relevant coordination or integration with external customer or subcontractor organisations where applicable.		
	1.5/L1/3			1.5/L2/3			1.5/L3/3		
	The SMS document is a stand-alone controlled document or a distinct part/section of an existing CAA endorsed/accepted document.			Records are maintained pertaining to safety committee/SAG meeting (or equivalent) minutes.			There is a process to periodically review the SMS exposition and supporting documentation to ensure their continuing relevance.		
	1.5/L1/4			1.5/L2/4					
	All components and elements of SMS regulatory requirements are addressed in the SMS document.			Records pertaining to periodic review of existing safety/risk assessments or special review in conjunction with relevant changes are available.			–		
	1.5/L1/5								

	Records are maintained pertaining to safety risk assessments performed.			–			–			
	1.5/L1/6									
	Records pertaining to identified or reported hazards/threats are maintained.			–			–			

SMS Element	Level 1	Input	Doc ref/ remarks	Level 2	Input	Doc ref/ remarks	Level 3	Input	Doc ref/ remarks
Hazard identification [2.1]	**SMS Component 2. Safety Risk Management**								
	2.1/L1/1			2.1/L2/1			2.1/L3/1		
	There is a procedure for voluntary hazards/threats reporting by all employees.			In the hazard identification system, there is a clear definition of and distinction between hazards and consequences.			There is a procedure to identify hazards/threats from internal incident/accident investigation reports for follow-up risk mitigation where appropriate.		
	2.1/L1/2			2.1/L2/2			2.1/L3/2		
	There is a procedure for incident/accident reporting by operational or production personnel.			The hazard reporting system is confidential and has provisions to protect the reporter's identity.			There is a procedure to review hazards/threats from relevant industry service or incident/accident reports for risk mitigation where applicable.		
	2.1/L1/3			2.1/L2/3			2.1/L3/3		
	There is a procedure for investigation of incident/accidents relating to quality or safety.			The organisation's internal investigation and disciplinary procedures distinguish between premeditated and deliberate violations and unintentional errors and mistakes.			There is a procedure for periodic review of existing risk analysis records.		
Safety risk assessment and mitigation [2.2]	2.2/L1/1			2.2/L2/1					
	There is a documented HIRM procedure involving the use of objective risk analysis tools.			Risk assessment reports are approved by departmental managers or at a higher level where appropriate.			–		
	2.2/L1/2			2.2/L2/2					

There is a procedure for identification of operations, processes, facilities and equipment which are deemed (by the organisation) as relevant for HIRM.	Recommended mitigation actions which require senior management decision or approval are accounted for and documented.	–	
2.2/L1/3	2.2/L2/3	2.2/L3/1	
There is a programme for progressive HIRA performance of all aviation safety-related operations, processes, facilities and equipment as identified by the organisation.	There is a procedure to prioritise HIRA performance for operations, processes, facilities and equipment with identified or known safety-critical hazards/risks.	There is evidence of progressive compliance and maintenance of the organisation's HIRA performance programme.	

SMS Element	Level 1	Input	Doc ref/ remarks	Level 2	Input	Doc ref/ remarks	Level 3	Input	Doc ref/ remarks
Safety performance monitoring and measurement [3.1]	**SMS Component 3. Safety Assurance**								
	3.1/L1/1			3.1/L2/1			3.1/L3/1		
	There are identified safety performance indicators for measuring and monitoring the organisation's safety performance.			There are lower-consequence safety performance indicators (e.g. non-compliance, deviation events).			There is a procedure for corrective or follow-up action to be taken when targets are not achieved and/or alert levels are breached.		
	3.1/L1/2			3.1/L2/2			3.1/L3/2		
	There are high-consequence data-based safety performance indicators (e.g. accident and serious incident rates).			There are alert and/or target level settings within the safety performance indicators where appropriate.			Safety performance indicators are reviewed by the safety committee for trending, alert levels that have been exceeded and target achievement where applicable.		
The management of change [3.2]	3.2/L1/1			3.2/L2/1			3.2/L3/1		
	There is a procedure for review of relevant existing aviation safety-related facilities and equipment (including HIRA records) whenever there are pertinent changes to those facilities or equipment.			There is a procedure for review of new aviation safety-related facilities and equipment for hazards/risks before they are commissioned.			There is a procedure for review of relevant existing facilities, equipment, operations or processes (including HIRM records) whenever there are pertinent changes external to the organisation such as regulatory/industry standards, best practices or technology.		
	3.2/L1/2			3.2/L2/2					

	There is a procedure for review of relevant existing aviation operations and processes (including HIRA records) whenever there are pertinent changes to those operations or processes.		There is a procedure for review of new aviation safety-related operations and processes for hazards/risks before they are commissioned.		–		

SMS Element	Level 1	Input	Doc ref/ remarks	Level 2	Input	Doc ref/ remarks	Level 3	Input	Doc ref/ remarks
Continuous improvement of the SMS [3.3]	3.3/L1/1			3.3/L2/1			3.3/L3/1		
	There is a procedure for periodic internal audit/assessment of the SMS.			There is a follow-up procedure to address audit corrective actions.			SMS audit/assessment has been carried out according to plan.		
	3.3/L1/2			3.3/L2/2			3.3/L3/2		
	There is a current internal SMS audit/assessment plan.			–			There is a process for SMS audit/assessment reports to be submitted or highlighted for the accountable manager's attention when necessary.		
	3.3/L1/3			3.3/L2/3			3.3/L3/3		
	There is a documented internal SMS audit/assessment procedure.			The SMS audit plan includes the sampling of completed safety assessments.			The SMS audit plan covers the SMS roles/inputs of contractors where applicable.		
Training and communication [4.1, 4.2]	**SMS Component 4. Safety Promotion**								
	4.1/L1/1			4.1/L2/1			4.1/L3/1		
	There is a documented SMS training/familiarisation policy for personnel.			Personnel involved in conducting risk evaluation are provided with appropriate risk management training or familiarisation.			There is evidence of organisation-wide SMS education or awareness efforts.		
	4.1/L1/2			4.1/L2/2			4.1/L3/2		
	The manager responsible for SMS administration has undergone an appropriate SMS training course.			Personnel directly involved in the SMS (safety committee/SAG members) have undergone appropriate SMS training or familiarisation.			There is evidence of a safety (SMS) publication, circular or channel for communicating safety and SMS matters to employees.		

	4.1/L1/3						
	The accountable manager has undergone appropriate SMS familiarisation, briefing or training.						

SUBTOTAL	**LEVEL 1**		**LEVEL 2**		**LEVEL 3**
Y					
N					
N/A					
Number of questions completed					
GRAND TOTAL (Sum of levels 1, 2 and 3)					
Y	31		**ASSESSMENT RESULT from Grand Total [Y / (Y + N)]:**		
N	51		**____%**		
N/A	3				
Number of questions completed	85				

CORRECTIVE ACTION NOTICE (CAN) PROCEDURE

1) Minimum overall acceptable performance (phased SMS implementation):

   First year/phase of assessment (e.g. 2012) – 45%.
   Second year/phase of assessment (e.g. 2013) – 65%.
   Third year/phase of assessment (e.g. 2014) and thereafter – 85%.
   Ninety (90) days for corrective action to obtain not less than 45% overall performance.

2) Baseline performance (Level 1 questions) (during any year/phase of assessment subsequent to CAAM SMS required applicability date:

   Corrective action notice (CAN) to be issued for “No” answers to any Level 1 questions (during any year/phase of assessment).
   (Sixty (60) days for corrective action to obtain a “Yes” answer to the relevant question(s)).

On-site Review Record

1. The On-site review is to validate observations from the document review exercise. This includes deficiencies in the submitted documentation, as well as verifying that the documented policies, processes and procedures are in place and available for immediate use when the applicants request for certification is granted.

2. Deficiencies noted by the review team will be rectified by the air operators prior to acceptance of the SMS.

Company documentation was validated on site and the SMS portion of the organisation is acceptable for initial certification of the air operator.

Date: _____ PM Signature: _____

Name: _____

20.3 Attachment C – SMS Routine Review Guide

20.3.1 Instructions:

20.3.1.1 Table Attachment C-1 is a regulatory SMS assessment checklist (39 questions) to be used for routine SMS assessment after the initial review has been completed successfully. After an organisation's SMS has satisfied the regulator's initial assessment and acceptance process, there will be many assessment questions from the initial assessment checklist that will no longer be expedient or necessary for routine assessment purposes. A routine SMS assessment checklist need only focus on the operational aspects of an SMS and evidence of the satisfactory implementation of its supporting processes.

20.3.1.2 The routine SMS assessment may be conducted on a stand-alone basis or incorporated as part of a routine surveillance audit of the organisation/systems. In case of the latter, such SMS routine assessment questions may accordingly be incorporated as a section within the normal organisation audit checklist. The normal corrective action notices (CAN) protocol of the regulator can also be applied to the routine SMS assessment.

Table Attachment C-1. SMS assessment checklist – Routine SMS assessment

CAAM	**CIVIL AVIATION AUTHORITY OF MALAYSIA**
SMS ASSESSMENT CHECKLIST – ROUTINE SMS ASSESSMENT	

S = Satisfactory; U = Unsatisfactory; N/A = Not applicable

SMS element		*Assessment question*	*S/U/NA*
Management commitment and responsibilities [1.1] Comments:	1	The safety policy is relevant to the scope and complexity of the organisation's operations.	
	2	There is evidence that the safety policy is communicated to all employees with the intent that they are made aware of their individual safety obligations.	
	3	There is a periodic review of the safety policy by senior management or the safety committee.	
	4	The accountable manager's terms of reference indicate his overall responsibility for all safety issues.	
Safety accountabilities [1.2] Comments:	1	There is a safety committee (or equivalent mechanism) that reviews the SMS and its safety performance.	
	2	The accountable manager's final authority over all operations conducted under his organisation's certificate(s) is indicated in his terms of reference.	
Appointment of key safety personnel [1.3] Comments:	1	The manager performing the SMS role has relevant SMS functions included in his terms of reference.	
	2	The manager responsible for administering the SMS does not hold other responsibilities that may conflict or impair his role as SMS manager.	
	3	The SMS manager has direct access or reporting to the accountable manager concerning the implementation and operation of the SMS.	

	4	The SMS manager is a senior management position not lower than or subservient to other operational or production positions.	
Emergency response planning [1.4] Comments:	1	The ERP addresses possible or likely emergency/crisis scenarios relating to the organisation's aviation service deliveries.	
	2	The ERP includes procedures for the continuing safe production, delivery or support of its aviation products or services during emergencies or contingencies.	
	3	ERP drills or exercises are carried out according to plan and the result of drills carried out are documented.	
	4	The ERP addresses relevant integration with external customer or subcontractor organisations where applicable.	
	5	There is evidence of periodic review of the ERP to ensure its continuing relevance and effectiveness.	
SMS element		*Assessment question*	*S/U/NA*
SMS documentation [1.5] Comments:	1	The organisation's SMS components and elements are adequately manifested in the SMS document.	
	2	The organisation's documented SMS components and elements are in line with the aviation authority's SMS requirements.	
	3	There is evidence of relevant SMS coordination or integration with external customer or subcontractor organisations where applicable.	
	4	There is evidence of procedures for periodic review of the SMS document and supporting documentation to ensure their continuing relevance.	
	5	Records pertaining to periodic review of existing safety/risk assessments are available.	
Hazard identification [2.1] Comments:	1	The number or rate of the organisation's registered/collected hazard reports is commensurate with the size and scope of the organisation's operations.	
	2	The hazard reporting system is confidential and has provisions to protect the reporter's identity.	

	3	There is evidence that hazards/threats uncovered during the incident/accident investigation process are registered with the HIRM system.	
	4	There is evidence that registered hazards are systematically processed for risk mitigation where applicable.	
Safety risk assessment and mitigation [2.2] Comments:	1	There is evidence that operations, processes, facilities and equipment with aviation safety implications are progressively subjected to the organisation's HIRM process.	
	2	Completed risk assessment reports are approved by an appropriate level of management.	
	3	There is a procedure for periodic review of completed risk mitigation records.	
SMS element		*Assessment question*	*S/U/NA*
Safety performance monitoring and measurement [3.1] Comments:	1	The organisation's SMS safety performance indicators have been agreed with the relevant national aviation authority.	
	2	There are high-consequence data-based safety performance indicators (e.g. accident and serious incident rates).	
	3	There are lower-consequence safety performance indicators (e.g. non- compliance, deviation events).	
	4	There are alert and/or target level settings within the safety performance indicators where appropriate.	
	5	The organisation's management of change procedure includes the requirement for a safety risk assessment to be conducted whenever applicable.	
	6	There is evidence of corrective or follow-up action taken when targets are not achieved and/or alert levels are breached.	
The management of change [3.2] Comments:	1	There is evidence that relevant aviation safety-related processes and operations have been subjected to the organisation's HIRM process as applicable.	
	2	The organisation's management of change procedure includes the requirement for a safety risk assessment to be conducted whenever applicable.	

Continuous improvement of the SMS [3.3] Comments:	1	There is evidence that an internal SMS audit/assessment has been planned and carried out.	
Training, education and communication [4.1, 4.2] Comments:	1	There is evidence that all personnel involved in SMS operations have undergone appropriate SMS training or familiarisation.	
	2	Personnel involved in conducting risk evaluation are provided with appropriate risk management training or familiarisation.	
	3	There is evidence of a safety (SMS) publication, circular or channel for communicating safety and SMS matters to employees.	

20.4 Attachment D - Flight Operations Checklist for the AOC approval on induction of new aircraft

20.4.1 The latest Checklist may be obtained on the CAAM Website

20.5 Attachment E –Application for Nomination of an Accountable Manager for the Purpose of Air Operator Certification and Supervision

20.5.1 The latest application form may be obtained on the CAAM Website

20.6 Attachment F – Application for Nomination of the Post Holders for the Purpose of Air Operator Certification and Supervision

20.6.1 The latest application form may be obtained on the CAAM Website

20.7 Attachment G – Schedule of Events

CAAM/BOP/AOC/03

	CIVIL AVIATION AUTHORITY OF MALAYSIA
SCHEDULE OF EVENTS 1	

Following events shall be completed chronologically and completion status shall be submitted to CAAM on periodical basis:

No.	Description of events	Applicability			Submission /Completion date
		Passenger Services	Cargo/Mail Services	Helicopter Services	
1	Submission of Formal Application.				
2	Inspection of Base as per Checklist. Follow up inspection until all short-comings are addressed.				
3	Documents/Manuals submission (as per Schedule of Events 2). Repeated review may be required until acceptable for approval.				
4	Aircraft/Helicopter Lease Agreement and/or Purchase Documents. (Provisional documents duly signed by the both parties will be acceptable).				
5	Training of CAAM Inspectors (Airworthiness and Flight Operations).				
6	Inspection of Operations facilities.				
7	Inspection of Training facilities.				
8	Process for Airworthiness Certification of aircraft (if applicable).				
9	Inspection of Maintenance facilities.				
10	Approval and readiness of Flight Crews.				
11	Approval and readiness of Aircraft Maintenance Engineers.				

12	Following satisfactory completion of event 1-11, Airworthiness and operations Inspection of aircraft for Technical Clearance and/or Registration				
13	Issue of Continuing Airworthiness Management Organisation				
14	Issue of Approved Maintenance Organisation				
15	Issue of C of A				
16	Issue of C of R				
17	Final Inspection until full compliance of all Checklists.				
18	Inspection of all Station facilities. (Operations & Airworthiness).				
19	Emergency evacuation and Ditching demonstration (Operations & Airworthiness).				
20	Demonstration flights (Operations & Airworthiness).				
21	Submission of Operations Specification.				
22	Issuance of AOC				
23	Any other events that may be applicable.				

	CIVIL AVIATION AUTHORITY OF MALAYSIA
SCHEDULE OF EVENTS 2	

No.	Description of Documents	Applicability			Submission /Completion date
		Passenger Services	Cargo/Mail Services	Helicopter Services	
1	Operations Manuals				
2	Security Manual				
3	Safety Management System Manual				
4	Safety Emergency Procedure Manual (SEP)				
5	Dangerous Goods Manual				
6	Ground Handling Manual				
7	Flight Dispatch Manual				
8	Continuing Airworthiness Management Exposition (CAME)				
9	Maintenance Organisation Exposition (MOE)				
10	Minimum Equipment List				
12	Master Minimum Equipment List- MMEL.				
12	Aircraft Maintenance Programme				
13	Aircraft Flight Manual				
14	Maintenance Manual				

15	Wiring Diagram				
16	Illustrated Parts Catalogue				
17	Maintenance Planning Document (MPD).				
18	Maintenance Review Board (MRB)				
19	Any other Documents/Manuals that may be applicable				

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