DIRECTORATE OF FLIGHT SAFETY STANDARDS
TECHNICAL GUIDANCE MATERIALS

Liberia Civil Aviation Authority

FLIGHT OPERATIONS INSPECTOR HANDBOOK (FOIH)

PART 2

PROCEDURES

AUGUST 2021

Liberia Civil Aviation Authority	**LIBERIA CIVIL AVIATION AUTHORITY** **DIRECTORATE OF FLIGHT SAFETY STANDARDS** TECHNICAL GUIDANCE MATERIALS	**EDITION No: 01**
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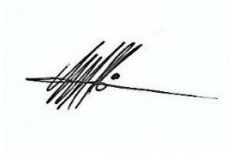
DIRECTORATE OF FLIGHT SAFETY STANDARDS (DFSS)	**HON. MOSES Y. KOLLIE**		**21 AUGUST 2021**

PREFACE

This Operations Inspector Handbook is one in a set of documents forming the technical guidance materials of the Directorate of Flight Safety Standards provided for the conduct of aviation safety oversight by Operations Inspector in the performance of their duties.

It is emphasized that all matters pertaining to an Operations Inspector's duties and responsibilities cannot be covered in this handbook. They are expected to use good judgment in matters where specific guidance has not been given.

This handbook will be treated as a dynamic document. Changes in aviation technology, legislation and within the industry will necessitate changes to requirements.

Comments and recommendations for Amendment action to this publication should be forwarded to Operations Inspection Division which will evaluate the comments and recommendations as per "Procedure for Amendment of Airworthiness Inspector Handbook" detailed in this handbook.

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DIRECTORATE OF FLIGHT SAFETY STANDARDS ORGANOGRAM

CHAPTER 1: AIR OPERATOR CERTIFICATION

1.1 THE CERTIFICATION PROCESS

(a) The purpose of the certification process is to provide a means by which prospective air operators or service providers are authorized to conduct business in a manner which complies with Liberia Civil Aviation Act of 2019, all applicable regulations and directives. The process is designed to preclude the certification of applicants who are unwilling or unable to comply with the regulations or to conform to safe operating practices.

(b) The applicant will not be certificated until the LCAA is assured that the applicant is capable of complying with the regulations.

(c) The certification process is a series of steps outlined in five phases:

(1) **Phase 1: Pre-Application Phase.** This phase provides the applicant with guidance for initial contact with the LCAA and provides for planning and coordination between the DG and the Flight Safety Standards Department in configuring the Certification Project Team(CPT). It includes completion of the Prospective Organization Pre-Assessment Statement (POPS). During this phase, the applicant will receive an initial orientation briefing, including an overview of the system safety based certification process, and training. This phase includes a determination of continuance by all parties and a review of all applicant submissions by the CPT and ends when all phase 1 requirements have been met.

(2) **Phase 2: Formal Application Phase.** To begin the formal application phase, the team will receive the application and attachments. During this phase, a formal application meeting is tentatively scheduled after the LCAA receives all submissions required in the Pre-application Phase. The Certification Project Team (CPT) reviews the applicant's submissions for completeness and accuracy before confirming the formal application meeting date. During the formal application meeting, the applicant's management personnel must demonstrate knowledge of their system design.

(3) **Phase 3: Document Evaluation/Compliance Phase.** In this phase, the application receives a thorough review for approval or disapproval, and the manual and related attachments undergo review to ensure conformity to the applicable regulations and safe operating practices.

Note: Phase 3 ends when all programs have been accepted or approved, and all requirements have been met.

(4) **Phase 4: Demonstration and Inspection Phase**. In this phase, the certification team ensures that the applicant's proposed procedures are effective and that facilities and equipment meet regulatory requirements. The CPM must decide if demonstrations are necessary.

(5) **Phase 5: Certification Phase.** Once the applicant meets the regulatory requirements of part 9, the certification team will issue the AOC certificate and operations specifications (OpSpecs).

(d) The complexity of the certification process is based on the inspector's assessment of the applicant's proposed operation. For simple certifications, some steps can be condensed or eliminated.

(e) Some applicants may lack a basic understanding of what is required for certification. Other applicants may propose a complex operation, but be well prepared and knowledgeable. Because of the variety in proposed operations and differences in applicant knowledge, the process must be thorough enough and flexible enough to apply to all possibilities.

(f) Each of the above phases is briefly introduced and each will be dealt with in greater detail in the succeeding chapters of this Inspector handbook.

1.2 PRE-APPLICATION PHASE

(a) A prospective operator who intends to apply for an AOC shall enter into preliminary discussions with the LCAA and will be provided with complete information concerning the type of operations which may be authorized, 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. A standard information package has been developed to provide information to applicants and is available for download from LCAA website at www.lcaa.gov.lr.

(b) The LCAA 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. 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.

(c) In those cases where an applicant's organization 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 organization’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.

(d) 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.

(e) If the application is acceptable to the LCAA 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.

(f) The pre-application phase will also include a parallel assessment of the financial, economic and legal 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.

(g) The LCAA is also the entity responsible for carrying out the financial, economic and legal assessment of the applicant and the proposed operation. An application for such assessment should be addressed to the LCAA Air Transport &Economic Regulation Department.

1.2.1 TERMINATING THE PRE-APPLICATION PHASE

(a) The Pre-Application Phase ends when the certification team is satisfied that the applicant is prepared to proceed with formal application. If the applicant is not ready, the team should advise the applicant of the problems and work with the applicant to arrive at solutions or terminate the certification process.

(b) The Pre-Application Phase Job aid (CL: AC-FSS001A) included in Appendix A to this chapter shall be completed prior to proceeding with the formal application phase.

1.2.2 PROCEDURES/ JOB PERFORMANCE SUBTASKS:

(a) There are three distinct activities, which are conducted during this phase:

(1) Respond to initial inquiry;

(2) Review the POPS

(3) Conduct the pre-application meeting

1.2.3 TASK OUTCOMES

(a) File an ISATS report.

(b) *Task Completion.* completion of this task will result in the following:

(1) Acceptance of the POPS;

(2) Termination of the pre-application phase.

(c) *Document Task.* File all supporting paperwork in the operator/applicant's office file such as update the aircraft database.

1.3 FORMAL APPLICATION

(a) An applicant's presentation of an application package and the LCAA office's review of it is considered the Formal Application Phase.

(b) ***Receipt of Formal Application Package.*** On receipt of the formal application package, the applicant will be informed that the LCAA needs a specific period of time to review it. Discussions of its acceptability should be avoided at this time. The applicant should be advised that further discussion will not be productive until the certification team has reviewed the formal application. The applicant should be advised that the certification team

will contact him/her within 10 working days concerning the application package's acceptability and to arrange for a formal application meeting.

(c) ***Application Package Initial Review.*** Upon receipt of a formal application package, the certification team must initially review it and make a determination of its acceptability. The package generally consists of:

(1) Letter of formal application

(2) Application form

(3) Complete manuals and documents, if applicable

(4) Curricula or personnel training programs, if applicable

(5) A schedule of events

(d) ***Formal Application Meeting***. If the certification team determines the need for a formal application meeting, all members of the certification team must be present. During the meeting the certification team and the applicant review the application package and resolve any discrepancies.

(1) If mutual agreements cannot be reached on any discrepancies, the team should terminate the meeting and inform the applicant that the application package is not acceptable. The application package must then be returned to the applicant with a letter explaining the reasons for the rejection.

(2) When agreement has been reached on corrective action for deficiencies, the team should then encourage the applicant to present questions concerning the certification.

(3) Before the conclusion of the formal application meeting, the team must make certain the applicant clearly understands the following:

(i) The applicant will be notified in writing in the event the application is rejected. This notification should be made within 5days after the formal application meeting. A telephone call concerning the application rejection shall be made to the applicant as soon as the determination is made; indicating that written notification will follow.

(ii) If the application is acceptable, the certification process continues with an in-depth examination of the application and associated documents during the document compliance phase. In some cases, telephone confirmation to the applicant is sufficient; however, written confirmation is recommended. A letter accepting an application is necessary because the 90-day time limit begins upon receipt of the application in an acceptable form.

(iii) Acceptance of the application does not constitute acceptance or approval of any attached documents. Attachments will be reviewed, and the applicant will be expected to take corrective action, if required. Acceptance or approval of each attachment should be indicated separately.

(e) ***Application Rejection.*** Rejection of an application is a sensitive issue since the applicant may have already expended funds and resources. It is important for the team to document thoroughly the reasons for the rejection. The reasons should clearly indicate that to proceed with the certification process would not be productive unless the applicant is willing to make the team's suggested corrections. Reasons for rejection might include lack of agreement on appropriate courses of action or evidence that the applicant does not understand regulatory

requirements and the certification process. In the event of rejection, the application and documents submitted are returned to the applicant with a letter of rejection.

1.3.1 TERMINATING THE FORMAL APPLICATION PHASE

(a) If the certification team accepts the application package, the Formal Application Phase of the certification process ends, and the Document Compliance Phase begins.

(b) The certification project Manager (CPM) should not proceed to the next phase until all requirements of the previous phase are met.

(c) Job Aid CL:AC-FSS002AAOC Formal Application Phase Checklist described in Appendix B to this chapter shall be utilized and completed to confirm the acceptability of the formal package.

1.3.2 PROCEDURES/ JOB PERFORMANCE SUBTASKS

(a) Receive the Formal Application package. Ensure submission and completeness of all documents.

(b) Conduct initial review of the formal application.

(1) Review schedule of events.

(2) Review company general operations manual/policies and procedures manuals.

(3) Review training curriculum.

(4) Review management qualifications/resumes.

(5) Review documents of purchase, contracts, & leases.

(6) Review compliance statement.

(c) Determine if the initial formal application package is acceptable.

(d) Conduct a Formal Application Meeting. Answer any open questions concerning the package before proceeding to the next phase. Do this in the most effective way possible (e.g., meetings or correspondence).

(e) Conclude formal application meeting.

(1) Specify corrections or additional items needed.

(2) Do not proceed to Phase III until Phase II is satisfactory.

(f) Evaluate the Formal Application Package. Based on the initial survey of the application package, make a decision whether or not to continue with the certification process.

(g) Termination of the formal application phase

(h) Proceed to document compliance phase of certification process

1.3.3 TASK OUTCOMES

(a) File an ISATS report.

(b) *Task Completion.* Successful completion of this task will result in the following:

(1) Issuance of the Acceptance Letter of Formal Application (sample letter provided in Annex B)

(c) *Document Task.* File all supporting paperwork in the operator/applicant's office file such as update the aircraft database.

1.4 DOCUMENT COMPLIANCE PHASE (OPS, AW)

1.4.1 BACKGROUND

(a) After the formal application has been accepted, the LCAA 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 LCAA should endeavor 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.

(b) 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.

(c) 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.

1.4.2 DOCUMENTS AND MANUALS TO BE EVALUATED

(a) The following documents and manuals shall be provided by the applicant:

(1) Draft operations specifications;

(2) Statement of compliance;

(3) Management personnel resumes providing qualifications and aviation experience;

(4) Aircraft flight manuals;

(5) Operations manual (individual manuals and items listed below form part of the operations manual.

(6) Aircraft operating manual;

(7) Minimum equipment list (MEL);

(8) Configuration deviation list (CDL);

(9) Aircraft performance manual;

(10) Mass and balance control manual;

(11) Aircraft loading and handling manual or ground handling manual;

(12) Training manuals for flight crew, cabin crew, operations personnel and ground personnel;

(13) Route guide;

(14) Dangerous goods manual;

(15) Passenger briefing cards;

(16) Aircraft search procedure checklist;

(17) Operational control procedures, dispatch, flight following, etc.;

(18) SMS manual, including a description of the flight safety document system;

(19) Security programme manual;

(20) Maintenance Control manual (MCM);

(21) Maintenance programme for each aircraft type;

(22) Plan for demonstration flights, as applicable.

(b) 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.

(c) Manuals will require appropriate revision and amendment when new requirements, operations or equipment are introduced.

1.4.3 EVALUATION OF THE DOCUMENTS

(a) ***Draft operations specifications.*** Operations specifications form part of the AOC. LCAA 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 LCAA certification team to add necessary authorizations, 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 authorization may be utilized) shall be available in the operations manual. Subsequent amendments to the specifications can be initiated later by the operator or the LCAA, as required by changing circumstances.

(b) Schedule of Events

(1) The Schedule of Events is prepared by the applicant.

(2) The Schedule of Events is a list of events and activities that must be concluded, and aircraft and/or facilities that must be available to the applicant, and the dates on

which any inspection items will be ready for inspection by the Civil Aviation Authority of Liberia. The list should include, but is not limited to, the following items.

(i) Dates when crew members will begin:

(A) Basic indoctrination training; and

(B) Aircraft systems training; and

(C) Simulator training; and

(D) Aircraft flight training; and

(E) Flight attendant training

(ii) Dates when Authority staff commence training, if applicable

(iii) Dates when maintenance personnel training will begin

(iv) Dates when maintenance facilities will be ready for Civil Aviation Authority of Liberia inspection

(v) Dates when each of the required manuals will be available for assessment

(vi) Dates when aircraft will be ready for inspection

(vii) Date of emergency evacuation and ditching demonstrations

(viii) Date when terminal facilities will be ready for inspection

(ix) Date when proving flights will begin

(x) Date when proposed operations will begin

(xi) Date of proposed assessment of head of training and checking and other approved persons.

(3) The Schedule of Events will enable the project teams to plan workloads so as to achieve certification by the required date. Each team should examine the Schedule of Events to determine manpower requirements. Where resources are inadequate, it will be necessary to re-negotiate the schedule with the applicant. Flight Operations Inspectors should examine the schedule to check for possible conflicts (for example, a proving flight scheduled before the Flight Operations Inspector has completed his or her type-specialist training, or before the destination terminal facilities are ready), and negotiate changes immediately with the applicant.

(4) Once the Civil Aviation Authority of Liberia has accepted the Schedule of Events at the formal application meeting, every effort should be made to keep to the schedule, provided safety aspects are not compromised. The Project Manager must ensure that adequate team members are available to meet the schedule.

(5) Since all required manuals must be reviewed and accepted or approved, the Schedule of Events must allow sufficient time to accomplish these tasks prior to the beginning

of proving tests. The timing of other events, such as training, aircraft conformity checks, emergency evacuation demonstrations, should also be assessed to determine the reasonableness of the schedule. It may be necessary to advise the applicant that the proposed schedule is unrealistic and that additional time will be required to accomplish the required reviews and inspections. This will normally be done at the formal application meeting.

(6) The applicant must be advised that any deficiencies found during the review of the manuals and other documents will require their return for re-drafting. Such action could cause delays in the certification process and this may ultimately affect the Schedule of Events. Failure by the applicant to meet proposed dates on the Schedule of Events and/or unsatisfactory inspections and demonstrations could also result in delays in the certification process. The applicant should be cautioned against premature advertising of the commencement date of operations. Under the Civil Aviation Act, the Civil Aviation Authority of Liberia must not issue an AOC unless they are satisfied that the requirements of the Act have been met.

(7) The time required to train Inspectors must be considered when accepting the Schedule of Events. Should the Civil Aviation Authority of Liberia not have staff qualified on the specific type of aircraft, then the training of at least one Flight Operations Inspector and two Airworthiness Inspectors will be required. The review of Operations Manuals and Operator's Maintenance Manuals cannot be completed until Civil Aviation Authority of Liberia Inspection personnel are qualified. Surveillance of crew training, which is required before proving flights commence, will also require qualified Civil Aviation Authority of Liberia personnel.

(8) The applicant should also be advised that non-compliance can be resolved by the granting of exemptions only where legislation allows for such exemptions. Applicants may seek short term exemptions, without demonstrating 'equivalent safety', in order to commence operations at the planned date, with a proposal that compliance will be achieved at a later date. Such exemptions cannot be granted, since the Act requires the Civil Aviation Authority of Liberia to be satisfied, prior to issuing the certificate, that the applicant has, at the commencement of operations, complied with, or has the capability to comply with, all of the provisions of the Act, and the Rules that relate to safety.

(c) ***Compliance Statement***

(1) The certification team will evaluate the compliance statement, 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.

(2) A properly prepared compliance statement is of benefit to the applicant both directly and indirectly. It provides a system for both the applicant and the Civil Aviation Authority of Liberia to ensure that their obligations under the Act are completely discharged.

(3) The Compliance Statement should be in the form of a list of provisions of the Act, and Rules and those sections of AOC Manual that will be applicable to the proposed operation. The listing should be in sufficient detail to make reference to applicable provisions of the Act or Rules. Next to each item the applicant must provide a brief narrative description of the means of compliance or a reference to a specific section of a manual or other document which shows the manner of compliance.

(4) If the method of compliance has not been fully developed, the applicant should provide a brief statement indicating his or her intent. It is expected that an adequately prepared applicant will have considered in detail how he or she proposes to comply with all regulatory requirements, and consequently there should be few, if any, areas in which the applicant is unable to put forward precise information.

(5) The Compliance Statement should be reviewed to confirm that the applicant has a clear understanding of the legislative requirements applicable to the proposed operation. The manner in which the applicant describes compliance with the specific legislation should be reviewed for adequacy, and any deficiencies discussed with the applicant. Where it is possible and reasonable to specify a particular means of complying with legislation, the applicant is expected to do so by including this in the Operations Manual, or other document, and provide a reference in the Compliance Statement.

(6) In some cases it will be sufficient for the applicant to state "The Board is aware of this limitation" or "The Company acknowledges this requirement" or similar words according to the particular case. An example of such a case may be the Rules which require the nationality mark and registration marks of the aircraft to be permanently affixed and kept clean and visible at all times.

(7) The final compliance statement needs to be completed by the air operator and accepted by LCAA prior to the commencement of the flight operations inspections.

(d) ***Management personnel resumes 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 licenses, ratings and aviation experience.

(e) **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. The Flight Manual shall be the one approved by the CAA for the subject aircraft during the Type Certificate acceptance process.

(f) **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.

(g) Manuals or other items which may be included in the operations manual and which require evaluation are given in (g) to (t). While references below are made to a separate manual, air operators may at their discretion include the information in the Operations Manual, if practicable.

(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 are contained in Chapter 37 of this Inspector Handbook.

(2) **Aircraft operating information/manual (AOM).** Aircraft operating manuals for each type of aircraft to be operated are required by Part9. These manuals are required to contain normal, abnormal and emergency procedures, details of the aircraft systems and the checklists to be used.

(3) **Minimum equipment list (MEL).** An 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.

(4) **CDL.** A CDL for each aircraft type and model may be established by the organization responsible for the type design and approved by the State of Design to provide for the commencement of a flight without specified external parts.

(5) **Aircraft performance manual**. These manuals are required for each type and model of aircraft to be operated.

(6) **Mass and balance control manual**. The manual provides 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. Detailed procedures for the review and approval of a mass and balance control manual are contained in this Inspector Handbook.

(7) **Ground handling manual**. This manual contains procedures and limitations for servicing, fueling, loading and unloading, pre-flight preparation and post-flight securing, applicable to the aircraft type and model.

(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 and recurrent training and conversion and upgrading training.

(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.

(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. Information on the procedures for the review and approval of the dangerous goods manual are contained in this Inspector Handbook.

(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 Part 8.

(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 LCAR Part9.

(13) **Operational control procedures, dispatch, flight following, etc.** The operations manual is required to contain the details of the applicant's operational control procedures and procedures for dispatch and flight following. It shall cover procedures for use in emergency situations and all communication procedures.

(14) **Flight time and duty periods limitations**. 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 LCARs.

(15) **Security programme manual**. This manual shall describe the operator security programme, which shall meet the requirements of the national civil aviation security programme of Liberia. 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 Inspector Handbook as this review will be completed by the LCAA Aviation Security Department.

(16) **MCM**. 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

(17) **Maintenance programme, including maintenance schedule.** A maintenance programme is required for individual aircraft, taking into account the requirements of the type design authority

*Note: The maintenance programme will require the approval of the State of Registry, if the aircraft is not registered in **Liberia.** The maintenance programme of each individual aircraft is approved by CAA if **Liberia** is the State of Registry or accepted by LCAA when the aircraft is registered in another State.*

(h) 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 CAA's assessment of the capabilities of the operational systems established by the applicant. The following factors will be considered when determining the demonstration flight requirement:

(1) 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, unpressurized to pressurized, or narrow body to wide body);

(2) 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);

(3) 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);

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

(5) What level of management experience exists in the company with this type or similar type or make of aircraft.

1.4.4 COMPLETING THE DOCUMENT COMPLIANCE PHASE

(a) When required documents are approved or accepted, the Document Compliance Phase is completed. The certification process continues in the Demonstration and Inspection Phase. The Document Compliance Phase and the Demonstration and Inspection Phase may overlap.

(b) Documentation Evaluation Checklist shall be utilized to confirm the acceptability of the documents provided by the applicant. Many of the items contained in this job aid are to be completed utilizing the more detailed job aids as contained in this inspector handbook.

1.4.5 PROCEDURES/ JOB PERFORMANCE SUBTASKS

(a) Conduct a detailed review of applicant's submissions.

(b) Open work tracking record.

(c) Review the following documents:

(1) Review company operations manual (OM)/policies and procedures manual

(2) Review training curriculum.

(3) Review management qualifications/resumes.

(4) Review weight and balance procedures.

(5) Review CAA approved airplane/rotorcraft flight manual (AFM/RFM).

(6) Review Company Flight Manual.

(7) Review Minimum Equipment List (MEL).

(8) Review cockpit checklist.

(9) Review passenger briefing card.

(10) Review environmental assessments, if applicable.

(11) Review airport runway analysis.

(12) Review deviation request.

(13) Review dangerous good manual

(14) Security Program.

(15) Review cabin attendant manual.

(16) Review dispatch/flight-following/flight-locating procedures.

(17) Review proving/validation test plan.

(18) Review emergency evacuation demonstration plan.

(19) Review compliance statement.

(20) Review compliance with applicable bulletins.

(21) Review exit row seating program.

(22) Review Category II and Category III program.

(d) Termination of the documents compliance phase.

(1) Terminate the applicant file.

(2) Close work tracking record.

(e) Proceed to demonstration and inspection phase.

1.4.6 TASK OUTCOMES

(a) *Task Completion.* Successful completion of this task will result in the following:

(1) Initial approval or acceptance of submitted manuals, documents and plans, as applicable.

(2) Recording of OJT in ITS, if applicable

(b) *Document Task.* File all supporting paperwork in the operator/applicant's office file such as update the aircraft database.

1.5 DEMONSTRATION AND INSPECTION PHASE

1.5.1 BACKGROUND

(a) The preliminary assessment of the application, as described in the preceding chapter, should provide the Liberia CAA with a general appreciation of the scope of the proposed operation and the potential ability of the applicant to conduct it. However, before authorizing the issuance of the AOC, the Liberia CAA will need to investigate thoroughly the operating ability of the applicant. This important and relatively more detailed phase of the investigation will require the applicant to demonstrate through day-to-day administration and operations, including in some cases a series of proving flights over the proposed routes,

the adequacy of facilities, equipment, operating procedures and practices, and the competence of administrative, flight and ground personnel.

1.5.2 OPERATIONAL INSPECTIONS

(a) Operational inspections and required demonstrations will normally be conducted in the following sequence:

(1) Organizational Structure/Management Evaluation

(2) Operational Control Inspection

(3) Training Program Inspection

(4) Training and Qualification Records Inspection

(5) Flight and Duty Time Records Inspection

(6) Station Facility Inspections

(7) Emergency Evacuation Demonstration

(8) Ditching Demonstration

(9) Proving Flights including En Route Cockpit and Cabin Inspections

(b) Detailed information regarding the conduct of these inspections and demonstrations is contained in the sections which follow.

1.5.2.1 Organizational Structure And Management Evaluation

(a) The applicant's organizational structure, managerial style, direction and philosophy must be further evaluated to ensure that necessary and proper control is exercised over the proposed operation and the personnel involved. The preliminary assessment of this area which was conducted in accordance with the preceding chapter mainly ensured that these organizational elements were clearly spelled out in the operator's manuals and instructions. During the operational inspection portion of the approval process, the IIII will have the opportunity to verify that these written policies are fully understood and implemented throughout the organization.

(b) Through discussions with key management personnel and observations, the inspectors must determine whether clear lines of authority and specific duties and responsibilities of subordinate elements and individuals are established. These duties and responsibilities must be clearly outlined in the applicant's operations and maintenance manuals and other company documents, and it should also be determined that acceptable procedures are established, and followed, for conveying such company procedures and operating instructions to keep affected personnel currently informed. The authorities, tasks, responsibilities and relationships of each key position must be clearly understood and followed by individuals occupying these positions.

(c) The applicant's staffing must be investigated to determine whether an adequate number of personnel are employed at the executive and other levels to perform necessary functions. The number and nature of personnel will vary with the size and complexity of the organizations. Through a sampling questioning process, the Liberia CAA inspector must make a finding that management personnel are qualified, experienced and competent to perform their assigned duties.

(d) At all levels applicant personnel must be thoroughly integrated into the operation and be 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.

1.5.2.2 Operational Control Inspection

(a) Evaluation of the overall effectiveness of an operational control organization should include a thorough analysis of the following factors:

(1) An operator is required to establish and maintain an approved method of control and supervision of flight operations. Because of the nature and extent of the duties and responsibilities involved in the supervision of flight operations, the Liberia CAA and the operator should consider the advantages of an approved method of control and supervision of flight operations requiring the services of a flight operations officer/flight dispatcher. In such a system the flight operations officer/flight dispatcher is assigned to duty in the company operations control center and is responsible, while on duty, for carrying out the operational control procedures and policies specified in the operations manual.

(2) The operations manual should specify the responsibilities and functions assigned to flight operations officers/flight dispatchers. The detailed responsibilities should include the provision of assistance to the pilot-in-command in flight preparation; completion of operational and ATS flight plans; liaison with air traffic, meteorological and communication services; and the provision to the pilot-in-command during flight of information necessary for the safe and efficient conduct of the flight. The flight operations officer/flight dispatcher should also be responsible for monitoring the progress of each flight under jurisdiction and for advising the pilot-in-command of company requirements for cancellation, re-routing or replanning should it not be possible to operate as planned. With regard to the foregoing, it should be understood that the pilot-in-command is the person ultimately responsible for the safety of the flight.

(b) Part 4, Chapter 4 of this handbook provides detailed guidance concerning Operational Control inspections. The Operations Inspectorate will follow those procedures when conducting an inspection for initial issuance of an AOC, and will utilize the Checklist/Report form contained in that chapter for reporting the results of the inspection.

1.5.2.3 Training Programme Inspection

(a) The training program could be described in detail in the operations manual or in a training manual, as part of the operations manual but issued as a separate volume. 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 programs in a training manual of one or more volumes to facilitate easy applications and updating. Depending on the scope and complexity of the proposed operation the required training programs 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 this case, the applicant will be required to provide a comprehensive description of the contract training for approval by the Liberia CAA. In any event the Inspector will carry out a thorough analysis of all phases of the applicant's ground and flight training programs. This analysis should permit a determination as to whether the training methods, syllabus, training aids/devices, training standards, related facilities and record keeping are adequate. The qualifications of ground and RRRR personnel should be established as well as evaluation of their effectiveness.

For purposes of initial approval of training programs for issuance of an AOC, the Liberia CAA may require the applicant to formalize in detail only those training courses which must be accomplished prior to the first revenue flight of the airline, such as basic company indoctrination and initial or conversion ground and flight training. Other courses, such as periodic or recurrent flight and ground training, may be fully developed after the commencement of flight operations.

(b) The detailed guidance and procedures contained in Part 3, Chapter 9 and in Part 4, Chapter 7 of this handbook will be used for inspecting and approving training programs for initial issuance of and AOC.

1.5.2.4 Records Inspections

1.5.2.4.1 Primary purpose of records inspections

(a) The primary purpose of records inspections is to ensure that the applicant has set up adequate systems for collecting and maintaining the following types of records:

(1) Operations and Flight (trip) records
(2) Flight and Duty Time records
(3) Training and Qualification records

(b) An operator is not required to remove records from his facilities for purposes of inspection. Liberia CAA inspectors will normally examine all records on the operator's premises. Should removal of records become necessary, the applicant should be given an itemized receipt for all records removed.

1.5.2.4.2 Operations and Flight Records

The primary objective of an operations and flight records inspection during the certification process is to ensure that the operator has established a system for collecting and maintaining specific operational records for a period of at least 3 months. All of the elements of such a system should be in place awaiting the commencement of operations. The operations and flight records system will be inspected in accordance with the guidance contained in Part 4, Chapter 5 of this handbook.

1.5.2.4.3 Flight and Duty Time Records

As with operations and flight records, the applicant will probably not have accumulated any records concerning flight and duty time prior to the commencement of revenue operations. At this phase in the certification process, it will be determined that the applicant has developed an adequate system for maintaining these records. The flight and duty time recordkeeping system will be inspected in accordance with Part 4, Chapter 6 of this handbook.

1.5.2.4.4 Training and Qualification Records

The applicant must have developed a method, including development of proper forms, for recording all training and qualification events which establish the qualification of crewmembers to occupy required positions in an airplane. The system must provide for the secure collection and maintenance of such records. At the time of operational certification for an AOC, the applicant must already have accumulated required training and qualification records for his initial cadre of flight operations personnel. The applicants system for recording events and collecting and maintaining such records will be examined in accordance with the guidance contained in Part 4, Chapter 7 of this handbook.

1.5.2.5 Station Facility Inspections

Each aerodrome which the operator intends to use must be inspected prior to the first revenue flight to that aerodrome, in order to ensure that the operator has the organization, facilities, and staffing to handle his aircraft at that destination. Station facility inspections may be accomplished during proving flights. However, if no proving flight is scheduled to a proposed operator destination, the Liberia CAA and the operator must make arrangements to travel to and inspect that facility by another means. Information on station facility inspections along with the appropriate checklist/report form is contained in Part 4, Chapter 11 of this handbook.

1.5.2.6 Emergency Evacuation Demonstration

In order to demonstrate that the airplane seating configuration, location and operation of emergency exits, and crew training and procedures will permit a successful evacuation of passengers in an emergency situation, the applicant will have to perform an emergency evacuation demonstration, prior to issuance of an AOC, for each aircraft type which he intends to operate. Procedures to be followed for these demonstrations may be found in Part 3, Chapter 4 of this handbook.

1.5.2.7 Ditching Demonstration

The applicant must demonstrate competency in removing and launching liferafts or sliderafts and in the use of emergency and survival equipment contained in those rafts. Procedures for ditching demonstrations are described in Part 3, Chapter 5 of this handbook.

1.5.2.8 Proving Flights

As a final demonstration that he has the proper organization, facilities, equipment, and training to successfully carry out revenue flights, the applicant will be required to perform a series of proving flights in accordance with the guidance contained in Part 3, Chapter 3 of this handbook.

1.5.3 PROCEDURES/ JOB PERFORMANCE SUBTASKS

(a) Open work tracking record.

(b) Continue certification process for the demonstration and inspection phase.

(c) Observe and monitor events.

(1) Training programs (classroom simulator and aircraft).

(2) Airman testing and certification using appropriate CAR Pilot Flight Check Forms.

(3) Record keeping procedures.

(4) Flight control.

(5) Minimum equipment list/configuration deviation list.

(6) Aircraft proving and validation tests

(d) Conclude demonstration and inspection phase.

(1) Termination of the demonstration and inspection phase.

(2) Close work tracking record.

(e) Proceed to the certification phase.

1.5.4 TASK OUTCOMES

(a) Task Completion. Successful completion of this task will result in the following:

(1) Notification of the applicant.

(2) Recording of OJT in ITS if applicable.

(b) Document Task. File all supporting paperwork in the operator/applicant's office file such as update the aircraft database.

1.6 CERTIFICATION PHASE (OPS, AW)

1.6.1 FINAL PREPARATION FOR THE ISSUANCE OF AN AOC

(a) The LCAA CPC will have notified the applicant in writing of all discrepancies that need to be resolved before an AOC and its associated operations specifications can be issued.

(b) The CPC reviews the final operations specifications and makes any changes necessary.

(c) The CPC and the LCAA certification team shall ensure that all the requirements for certification have been met and also have determined that the applicant is fully capable of fulfilling all the responsibilities incumbent in the conduct of the proposed operations and of complying with the applicable laws and regulations, and the provisions of the AOC and operations specifications.

(d) Further, an AOC will not be issued until the LCAA Air Transport and Economic Regulation Department presented a favorable report, and until LCAA is satisfied that the operator has the financial resources to conduct its planned operations, including resources for the disruptions that can be reasonably expected in daily operations.

(e) The CPC will provide a report with appropriate recommendations on the issuance or denial of an AOC to the Manager of Flight Safety Standard for further submission to the Board of Directors. The report shall include the following information.

(1) In the case of a recommendation on issuance of the AOC:

(i) Confirmation that the air operator has been certificated in accordance with the policy and procedures as contained in this Inspector Manual;

(ii) Listing of the applicable job aids/checklists that have been completed to confirm that the air operator is in compliance with LCAR and related guidance material;

(iii) Confirmation that LCAA is satisfied that the operator has the financial resources to conduct its planned operations;

(2) In the case of a recommendation on denial of an AOC:

(i) Listing of the applicable job aids/checklists that have been successfully completed to date;

(ii) Details of certification requirements which the air operator has failed to achieve; and

(iii) Signature of the CPC and the name and title of each team member who assisted in the certification project.

1.6.2 ISSUANCE OF AN AOC AND THE ASSOCIATED OPERATIONS SPECIFICATIONS

1.6.2.1 General

(a) Properly conducted and documented, the assessment and inspection program outlined in the foregoing chapters will enable the Civil Aviation Authority of Liberia to determine if the applicant has fulfilled all technical safety and regulatory requirements for the issuance of an AOC. The program will have provided specific information related to:

(1) the scope of the applicant's proposed operation;

(2) the adequacy of the organization and resources;

(3) the adequacy and effectiveness of company policies, directives, operating instructions and procedures prescribed by the applicant to be followed by the personnel in the conduct of the operation; and

(4) the applicant's willingness and ability to implement the State's operating regulations and rules applicable to the proposed operation.

(b) It will also reveal any deficiencies related to the operation and provide opportunities during the assessment and inspection phases for the applicant to remedy any such deficiencies to the satisfaction of the Director General.

1.6.2.2 Determination On the Application

(a) Following the completion of the assessment and inspection program, the Airworthiness Inspectors will be in a position to recommend to the Director General that the applicant is either:

(1) properly equipped and capable in all respects of conducting the proposed operation safely, efficiently and reliably in accordance with the AOC's operations specifications or limitations; or

(2) is not, or is not yet (pending correction of specified deficiencies), capable of conducting the proposed operation in an acceptable manner.

(b) In those cases, where the application is successful, the Director General will issue an Air Operator Certificate in accordance with the LCAR Part 9. Operations specifications and limitations which will be applicable to the certificate will also be issue to the operator as described in below.

(c) Should the applicant be considered not yet capable of conducting the proposed operation in the required manner, an AOC will not be issued and the applicant will be so advised by letter, indicating the reasons for the lack of approval.

1.6.2.3 Issuance of The Air Operator Certificate

(a) Provided that the Director General is satisfied with the reports of the Civil Aviation Authority of Liberia inspectors and has determined that there is no economic or legal bar to the proposed operation, it should proceed with the issuance of an AOC and the associated operations specifications.

(b) In accordance with the LCAR Part 9, the AOC will contain or make reference to the following information:

(1) operator's identification (name, location);

(2) date of issue and period of validity;

(3) description of the types of operations authorized;

(4) the type(s) of aircraft authorized for use; and

(5) authorized areas of operation and routes.

(c) When the AOC is issued the operator should be provided at the same time with officially authenticated copies of the approved operations specifications. The operator should also be advised as to the procedure to prepare and process future requests for amendments of operations specifications.

(d) Once the operator has received the AOC and the approved operations specifications, the operator may inaugurate the flight operations authorized. Thereafter, the operator is responsible for conducting all operations in full compliance with these authorizations and the applicable provisions of the applicable regulations. From that moment, the Director General will establish a continued audit on the operator to ensure that the required standards of operation are maintained.

1.6.2.4 Issuance of Operations Specifications

(a) Operations specifications (or an equivalent document) and limitations applicable to an AOC will be issued in conjunction with the issue of the certificate. These operating specifications and limitations hereinafter referred to as operations specifications are utilized to supplement the general provisions of the basic certificate and to list authorizations and limitations not specifically covered by Liberia Civil Aviation Authority regulations. The combined issuance of the AOC and the operations specifications constitute Civil Aviation Authority of Liberia approval of the operation.

(b) Operations Specifications are issued along with the AOC and amended as necessary to reflect the current fleet and operating environment of the airline. Amendments to the Operating Specifications serve as variances to the AOC.

(c) The combined issuance of the AOC and the operations specifications constitute Civil Aviation Authority of Liberia approval of the operation.

(d) The operator must make the content of his Operations Specifications available to all company personnel. To that end, they should be included in appropriate sections of his Operations and Maintenance manuals.

1.6.3 AMENDMENTS TO OPERATIONS SPECIFICATIONS

(a) 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.

(b) 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.

(c) Amendments to Operations Specifications may be initiated by either the AAAA or the operator. If the AAAA initiates an amendment, it will prepare the amended page(s) and deliver them to the operator with a cover letter which describes the justification for the change.

(d) If the operator desires to amend the Operations Specifications (typically when adding or deleting routes, airports, or airplanes) he will do so by providing a letter to the BBBB which describes the exact nature of the change requested and provides justification for the operations specifications amendments, including appropriate documentation if necessary. For example, a request for a change to Part G should include a copy of the lease agreement. Upon receipt of the request letter, the AAAA will analyze the narrative justification and attached documents. If the change is approved, applicable pages to the Operations Specifications will be revised, signed, and delivered to the operator under a cover letter. The operator's signature must be obtained on the bottom of the revised pages upon delivery.

1.6.4 RENEWAL OF AN AOC

(a) The continued validity of an AOC is dependent upon an operator maintaining the requirements for an adequate organization, 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 in the AOC and the associated operations specifications, under the supervision of LCAA.

(b) LCAA will conduct continuing surveillance of the operator to continuously determine that the AOC remains valid.

(c) The operator needs to apply for renewal of the AOC at least 60 days 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 procedure and thus will not be an onerous or prolonged process, because of the continuing surveillance exercised by LCAA.

1.6.5 PROCEDURES/ JOB PERFORMANCE SUBTASKS

(a) Continue certification phase.

(1) Open work tracking record.

(b) Perform preparation of the certificate.

(c) Prepare operations specifications.

(d) Issue certificate and operations specifications.

(e) Prepare certification report and operator's office file.

(f) Close work tracking record.

1.6.6 TASK OUTCOMES

(a) Task Completion. Successful completion of this task will result in the following:

(1) Submission of a certification report;

(2) Preparation of AOC and Operations Specifications for signature;

(3) Entering of operator's and aircraft information in the ISATS database;

(4) Recording of OJT in ITS if applicable.

(b) Document Task. File all supporting paperwork in the operator/applicant's office file.

CHAPTER 2: PRELIMINARY FINANCIAL, ECONOMIC, AND LEGAL ASSESSMENT

2.1 GENERAL

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 the initial stage, the less will be the likelihood of having serious problems in the operational inspection phase or during the course of subsequent operations. Such an assessment is essential at an early stage to reveal any critical deficiencies in the applicant's proposals and enable the operator to prepare alternative proposals. If deficiencies are found which are such that they can be rectified, the applicant should be given a reasonable opportunity to do so; otherwise the application should be rejected. This preliminary assessment consists of two phases:

(1) Financial, economic and legal assessment

(2) Technical Assessment/Document review (Chapter 1)

2.2 PRELIMINARY FINANCIAL, ECONOMIC, AND LEGAL ASSESSMENT

(a) In assessing the application prior to a detailed operational inspection it will be necessary for the Air Transport Regulation department to make a preliminary investigation with total satisfaction that the applicant has:

(1) sufficient financial resources;

(2) a route structure for the proposed operation;

(3) an intended level of service that meets a need or demand and is in the public interest;

(4) proposed a type and level of operation that is in accord with bilateral or multi-lateral air transport agreements relating to traffic rights, frequencies, capacity, routes, etc., to which the State is a party;

(5) presented traffic studies or other data indicating that the proposed operation should be economically successful; and

(6) management structure and suitable personnel, equipment, facilities, manuals, buildings, service agreements, etc., or will be able to obtain them.

(b) Frequently, the financial viability of the operation is the critical factor in reaching a decision as to whether an AOC should be awarded. Sufficient financial resources must be available to the operator so that the operator is able to obtain all required equipment, facilities and manpower and be able to fully support operations in the early stages when revenues are difficult to predict and may in any case be very low. Marginal or severely limited resources frequently result in an adverse effect on safety and efficiency. Experience indicates that operators may tend to short cut such vital matters as required maintenance, acquiring adequate spare parts, training of personnel and other similar matters with safety implications. The determination of financial resources of the applicant is usually based on an audit of the operator's assets and liabilities and a thorough evaluation of financial and statistical records and other pertinent data such as proposed arrangements for the purchase or lease of aeroplanes and major equipment.

(c) In recent years the leasing of aircraft with or without flight crew or cabin crew has come into widespread use on an international basis. Thus, in many instances the lease will involve aircraft on the register of one State leased to an operator having the nationality of another State. Unless suitable arrangements are made by the State of Registry and the

State of the Operator, complex legal problems as well as safety problems, particularly in respect of the continuing airworthiness and operations supervision, may result. Consequently, the assessment of any proposed leasing arrangements should be carried out in detail. The overall subject of lease and interchange of aircraft is discussed in Part 3 Chapter 6 of this manual.

(d) If the proposed operation is not considered to be viable in respect of the financial, economic and legal factors, further action should be suspended until it is determined whether the deficiencies can be rectified.

CHAPTER 3: EXEMPTIONS

3.1.1 EXEMPTION PROCEDURE

3.1.2 GENERAL

An application for exemption is a request from an Operator to be exempted from the requirements of Directives and other instructions or circulars. The Director, Safety Regulation maintains a record of all exemptions issued by the Authority, and issues exemption information via letters.

3.1.3 RECEIPT OF APPLICATION FOR EXEMPTION

(a) LCARs Part 1 permits an Operator to apply to the Authority for an exemption from any provisions of the Regulations. Any application for exemption from any provision should be forwarded to the Director-General for consideration. The application should contain the requirements as specified in LCARs Part 1 Subparts 1.4.3 and 1.4.4.

(b) The assigned inspector(s) shall communicate to the applicant within two (2) working days upon receipt of the application, the duration for the evaluation process.

3.1.4 PROCESSING OF APPLICATION FOR EXEMPTIONS

(a) Upon receipt, the Director-General will forward the application to the Director, Directorate of Flight Safety Standards through the Deputy Director General- technical. the Director of Flight Safety Standards shall forward the application to the Assistant Director of Airworthiness who shall review the request and ensure that all necessary information has been provided. The Assistant Director, Airworthiness shall forward to the applicant a letter acknowledging that his application has been received and request further documentation, if required.

(b) The application is forwarded for comprehensive technical review and evaluation.

(c) Airworthiness assigned inspector(s) shall coordinate the involvement of all relevant offices in the process as early as possible. In this regard, the assigned Inspector(s) shall also refer the application internally and externally to offices where the professional advice of the directorate would be required.

(d) The assigned inspector(s) shall conduct a technical assessment of the request and evaluate the arguments and evidence put forward by the party making the request in accordance with the aviation safety and public interest test.

(e) Beginning with the aviation safety test, the assigned inspector(s) shall determine whether an equivalent level of safety shall be maintained by the introduction of stated conditions and procedures. If the result is yes, the inspector(s) shall then determine whether granting the exemption is in the public interest. While each request for an exemption must stand on its own merit, due diligence must be made to each application for exemption for administrative purposes (namely, to see if similar exemptions have been granted before). In an exemption action, maintaining an equivalent or greater level of safety is of primary concern. The analysis should focus on the applicant's justification that safety would not be adversely affected.

(f) The inspector(s) shall document the findings of the assessment, providing the justification to grant or deny the exemption.

(g) The assigned inspector(s) shall forward to the Assistant Director, Airworthiness and Director of Flight Safety Standards, Safety Regulation for review, together with the supporting file, the following documents:

(1) Exemption Request Form;

(2) Assessment Paper; and

(3) Draft Grant or denial of Exemption Document.

(h) The Director shall review the submission and forward it to the Deputy DG for technical who shall again forward for DG's approval.

(i) The grant or denial of the exemption shall be issued to the applicant within ten (10) working days after completion of the review by the assigned Inspector(s).

3.1.5 GRANT OR DENIAL OF EXEMPTION

(a) Decision to Grant. The applicant is issued the document granting the exemption if it is concluded that the applicant's arguments support a grant of exemption. The conditions and procedures under which the exemption is granted shall be outlined in the Exemption document.

(b) A decision to deny the exemption is based on the determination that the exemption would not be in the public interest, would adversely affect safety, or, if applied, would not provide a level of safety intended by the Directive. Under such circumstances, the reasons will be cited in the denial of the exemption document.

(c) Partial Grant of an Exemption. If the Authority determines that part of the applicant's request meets the criteria for granting the application, it may issue a partial grant of exemption. The guidelines above for grant of exemption and denial of exemption documents should be followed citing reasons. The document must fully discuss those parts of the request that are being denied and those that are being granted.

(d) The Authority shall publish a report of its decision to grant the application for exemption. The report shall specify the duration of the exemption and any conditions or limitations of the exemption. The means of publication shall be the LCAA website.

3.1.6 REQUEST FOR AN EXTENSION OF THE TERMINATION DATE OF AN EXEMPTION

(a) Upon receipt of a request from an applicant to extend the termination date of an exemption, the Authority shall prepare a letter of agreement or denial. The following information is to be included:

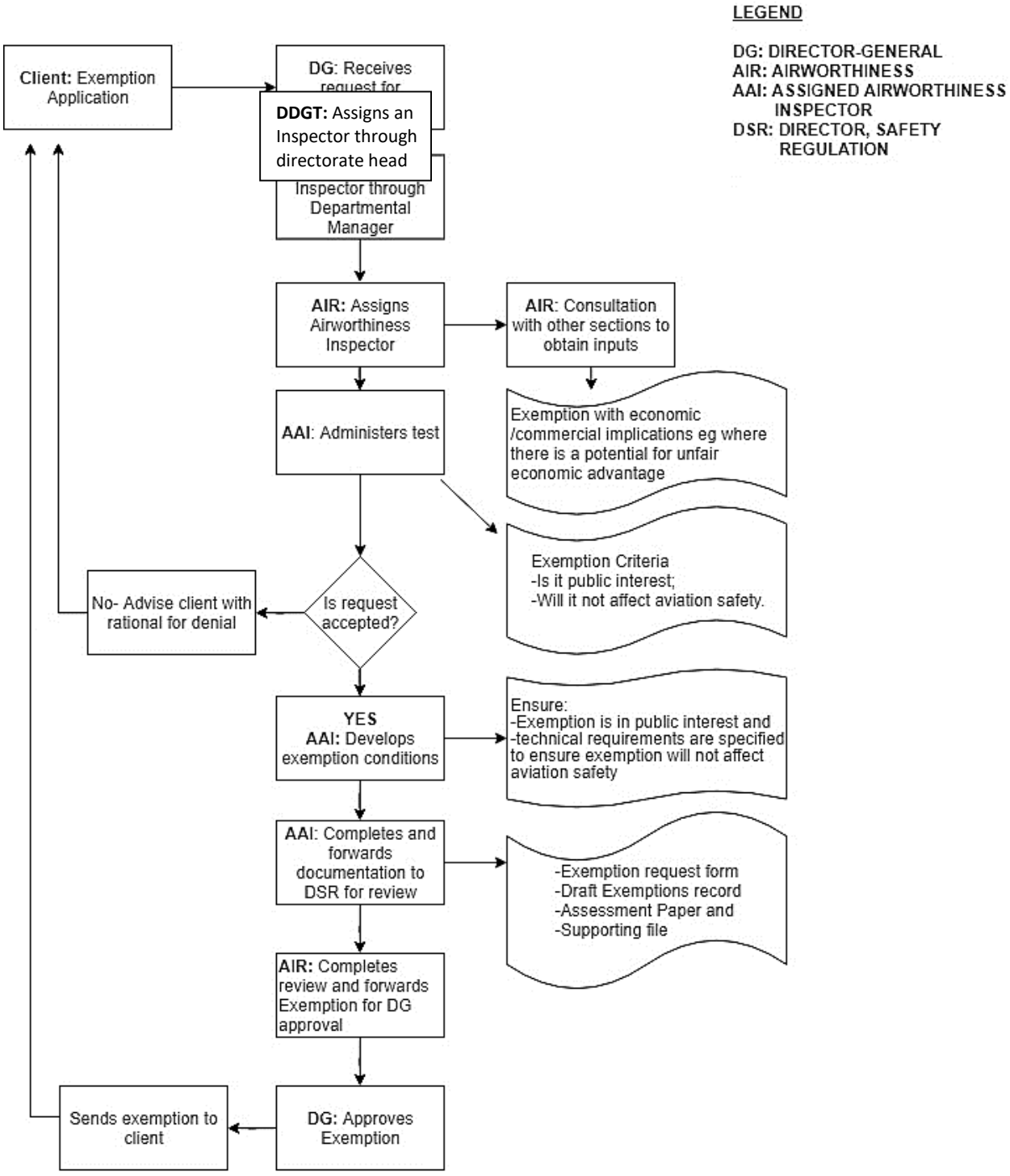
(1) The applicable Directive;

(2) Grant or denial statement; and

(3) Exemption number (after signed).

(b) A copy of the extension or denial shall be filed on in the Operator's file prior to the original exemption termination date.

3.2 EXEMPTION PROCESS FLOWCHART



CHAPTER 4: APPROVAL OF CHECK AIRMEN AND INSTRUCTORS

4.1 BACKGROUND AND OBJECTIVES

Operators are required to provide enough instructors and Check Airmen to carry out the flight training and checks specified in their approved training programs. The LCAA must specifically approve operator personnel who are to serve as Check Airmen after a thorough review of the candidate's background, experience, training, and competency. Whereas instructors are not specifically approved, they must meet certain qualifying criteria and their performance is subject to LCAA evaluation.

4.2 ELIGIBILITY REQUIREMENTS FOR CHECK AIRMEN

(a) Operator personnel who are to serve, as Check Airmen must meet the following requirements:

(1) For pilot Check Airmen, hold the required certificate and ratings to serve as a PIC of the specific aircraft in revenue service. For Check Flight Engineers, hold the required certificate and ratings to serve as flight engineer in the specific aircraft in revenue service.

(2) For pilot Check Airmen and Check Flight Engineers, hold a Class 1 medical certificate.

(3) For pilot Check Airmen and Check Flight Engineers, have completed the operator's approved RRRR and Check Airmen qualification training program.

(4) For pilot Check Airmen meet the training and currency requirements to serve as PIC, including ground and flight training, proficiency or Competency Checks, and 90-day landing currency. For Check Flight Engineers, meet the training and currency requirements to serve as a flight engineer.

(5) Maintain line currency as a crew member in the position(s) for which checks are authorized.

(6) Have achieved and maintained a favorable record as a crew member

(7) Satisfactorily demonstrate to the Liberia CAA the ability to conduct the category of checks for which he seeks approval.

4.3 CLASSIFICATION OF CHECK AIRMEN

(a) There are seven Check Airmen designations; five of which are pilot Check Airmen designations and two are flight engineer Check Airmen designations. Approval for each Check Airmen designation is contingent on the Check Airmen having been properly certificated in the applicable aircraft and crew position; having been trained in accordance with the operator's approved Check Airmen training program for the specific designation; and having demonstrated to the Liberia CAA the ability to conduct and accurately evaluate an airman's performance on the flight checks authorized for that designation. The seven Check Airmen designations are:

(1) *Proficiency Check Pilot - Aircraft.* This designation authorizes the Check Pilot to conduct proficiency or competency checks and to provide flight instruction from either seat in an aircraft in actual flight; supervise the re-establishment of landing currency; conduct special checks such as CAT II or CAT III qualifications provided the Check Airmen is qualified in that activity; and to provide ground instruction if authorized by the operator.

(2) *Proficiency Check Pilot - Simulator*. This category authorizes a Check Airmen to conduct pilot proficiency or checks in an approved flight simulator or flight training device, to provide flight instruction in a flight simulator or flight training device, supervise the re-establishment of landing currency, when authorized in a flight simulator; conduct special checks such as CAT II and CAT III in a simulator, provided the Check Airmen is qualified in the activity for which the special check is being conducted; and, when authorized by the operator, provide ground instruction for airmen and certification of the satisfactory completion of a ground training curriculum segment

(3) *Line Check Pilot.* This category permits the Check Airmen to conduct annual pilot line checks from either pilot seat or the jump seat; to act as a supervisory pilot from either seat for route training/qualification of new line pilots and to conduct training and checks in special operations, provided the Check Airmen is qualified in the activity being conducted; and, when authorized by the operator, to conduct ground instruction for airmen and certification of the satisfactory completion of a ground training course.

(4) *Check Pilot - All Checks*. This category permits the Check Pilot to conduct all checks and training contained in categories (1) through (3) above.

(5) *Check Flight Engineer* - Airplane Only. This designation is intended for those operators who do not use simulators or training devices in their flight engineer training programs. This category of Flight Instructor authorizes the person to conduct flight engineer proficiency checks and instruction to flight engineers in flight in an airplane and, when authorized by the operator, to provide ground instruction for airmen and certification of the satisfactory completion of a ground training curriculum segment.

(6) *Check Flight Engineer* - All Checks. This category of Check Airmen is intended for those operators who use flight simulators or training devices in all or part of their flight engineer training program. A person so designated may conduct flight engineer proficiency checks in an approved flight training device, an engineer simulator, a flight simulator, or an airplane. He may also provide instruction to flight engineers in a flight simulator, an engineer simulator, a flight training device, or an airplane; and, when authorized by the operator, provide ground instruction for airmen and certification of the satisfactory completion of a ground training course or portion thereof.

4.4 CHECK AIRMEN APPROVAL PROCESS

(a) The following sequence of events will be followed for DG approval of Check Airmen:

(1) The operator will submit a letter requesting a specific Check Airmen designation for the proposed Check Airmen. This letter will include a brief resume of the airman's background and experience and copies of his license(s) and medical certificate. Copies of training records which document that the prospective Check Airmen has completed the operator's approved courses of training for instructor and Check Airmen duties must also be included.

(2) The DG will review the letter of request and attached documentation to ensure that the prospective Check Airmen meets all applicable requirements. Following this review, the applicant will be interviewed to ensure that he has a firm understanding of the duties of a Check Airmen and the proper attitude to carry out those duties.

(3) Following a successful document review and interview, the prospective Check Airmen will be observed conducting the entire type of check or checks for which he seeks approval.

(4) Provided that steps a through c above are satisfactorily accomplished, the airman will be issued an approval letter which contains the following information:

(i) Check Airmen name and applicable DG and/or foreign license numbers.

(ii) Specified Check Airmen designation

(iii) Specified aircraft

(iv) Operator or operators the Check Airmen may serve

(v) Effective date of designation

See Figure 2-1 part 3 at the end of this chapter for a sample of a Check Airmen authorization letter.

(5) In the event that the prospective Check Airmen is not found to be satisfactory during any of steps (1) through (3) above, the DG will write a letter to the operator explaining the reason for the disapproval.

4.5 CONDUCT OF A CHECK AIRMEN EVALUATION

(a) The purpose of the Check Airmen evaluation is to ensure that the candidate has achieved the required skills for briefing, evaluating, and debriefing an airman being checked. Except for an initial cadre designation, a Check Airmen evaluation does not entail an evaluation of the candidate's proficiency in the basic crew position. An operator should not request designation of an individual as a Check Airmen when there is any question about the airman's skills in the basic crew position. Should the DG inspector have reason to question the airman's basic qualifications, the Check Airmen evaluation shall not be conducted until the candidate's qualifications are definitely and thoroughly verified and accepted. An acceptable means of establishing the airman's basic qualifications is for an inspector to conduct a proficiency, competency, or line check of the Check Airmen candidate on a separate occasion before the Check Airmen evaluation. Such checks, however, are not routinely required.

(b) The following general guidance applies to all Check Airmen evaluations:

(1) Inspectors assigned to conduct Check Airmen evaluations must become thoroughly familiar with the operator's methods and procedures. Inspectors should also become familiar with the regulatory requirements for the check to be conducted by the Check Airmen candidate. This familiarity is necessary if the inspector is to make a determination as to whether or not the Check Airmen has the ability to conduct a check consistent with the operator's approved procedures and regulatory requirements.

(2) An inspector conducting a Check Airmen evaluation must arrange to meet with the Check Airmen candidate in sufficient time for a pre-evaluation briefing. The inspector shall inform the candidate of the purpose of the evaluation and that the check should be conducted as if the candidate was fully qualified for the requested Check Airmen designation. During the briefing, the inspector should also ask questions of the candidate to determine if the candidate has a thorough knowledge and understanding of applicable LCAA regulations, operator policies, methods and procedures, and of the actions to be taken when acceptable standards are not met. Inspectors should not ask questions of this nature while the check is actually being conducted.

(3) While the check is in progress, the inspector must observe, but should not interrupt or interfere with the techniques and actions taken by the Check Airmen candidate. The inspector must determine if all required events were accomplished and if each event was properly conducted. The candidate's evaluation of the airman's performance

must be accurate. The candidate's debriefing of the airman must be accurate, complete, and constructive.

(4) If the inspector determines that a Check Airmen candidate does qualify for the requested Check Airmen designation, the inspector shall inform the candidate that a recommendation of approval will be reported to the Liberia CAA. In this case, the Check Airmen candidate shall certify to the proficiency of the airman being given the check and complete the necessary records. As a matter of policy, the new Check Airmen may be scheduled immediately by the operator to perform checks, even though processing of the designation letter has not been completed.

(5) If the inspector determines a candidate does not qualify for the requested Check Airmen designation, the inspector shall inform the candidate of the unsatisfactory performance and of not being approved as a Check Airmen. In this case, the inspector must determine whether the airman that received the check performed satisfactorily, and must certify to the proficiency of the airman who was checked for the purpose of Check Airmen evaluation (satisfactory or otherwise), and complete the necessary records. Inspectors shall sign operator forms indicating success or failure of the airman and make a statement of the circumstances on the operator's forms. The company shall be informed by letter of the reason for the disapproval.

(6) The failure of a Check Airmen candidate is unusual and usually ends a candidate's eligibility for Check Airmen status. In rare circumstances, however, the Liberia CAA may allow a re-evaluation. In such a case, the operator must conduct sufficient additional training, recertify the candidate's proficiency, and then arrange to have another evaluation conducted by a Liberia CAA inspector.

Note: *See Part 4 Chapter 13 for further information regarding proficiency checks and Check Airmen performance*

4.6 PERIODIC RENEWAL OF CHECK AIRMEN DESIGNATIONS

(a) All Check Airmen designations expire one year from the last day of the month on which they were effective. The following procedures will be followed for renewal:

(1) at least one month prior to the expiration date of a particular designation, the operator must submit to the Liberia CAA a letter requesting renewal of that designation, if so desired. Attached to the renewal request will be a record of all of the checks that the Check Airmen has conducted during the preceding 12 months, along with a copy of the Check Airmen current license(s) and medical certificate. The letter should also advise the Liberia CAA as to when the Check Airmen will be available for observation during the next 30 days in the course of conducting a check. At least one primary and alternative date should be provided.

(2) The Liberia CAA will review the letter and attached documentation, giving particular attention to the number of checks which the Check Airmen has conducted within the designation sought over the previous year. This is to ensure that he is being well-utilized by the operator so as to justify his continued designation.

(3) Following a satisfactory review of the documents, the Liberia CAA will schedule an inspector to observe the Check Airmen conduct the type of check for which renewal is sought.

(4) Provided that the evaluation of the Check Airmen's performance was found to continue to be satisfactory, an updated Check Airmen letter of approval (see Figure 2-1 part 3) will be sent to the operator.

(5) If the renewal evaluation of the Check Airmen's performance is found to be unsatisfactory for any reason, the Check Airmen shall be informed immediately and the company provided with a letter stating the reason(s) for the disapproval. In this case, as with the original Check Airmen designation, the Liberia CAA inspector must then approve or disapprove the actual check which was in progress for the purpose of evaluating the Check Airmen.

4.7 GROUND AND RRRRS

An instructor is a person employed by an operator or training center for the purpose of training flight crewmembers in an operator's approved training curriculum. These instructors provide the required training for flight crewmembers to ensure that the acceptable standards of knowledge and the necessary skills to complete a particular curriculum segment are met. When designated by the employer, an air transportation instructor is responsible for certifying to the knowledge and proficiency of each crewmember upon completion of a training curriculum or curriculum segment. Instructors must be knowledgeable in the applicable LCAA requirements and in the operator's required policies and procedures applicable to each designated area of expertise. An instructor must possess effective communicative skills. An instructor's manner should reflect honesty and professionalism, and the instructor must exhibit a positive attitude toward safe aviation practices.

4.7.1 Flight Instructor(s)

(a) The LCAA does not formally approve Flight Instructors. The operator may designate any person to serve as a Flight Instructors in either a simulator or aircraft provided that the following basic qualifications are met:

(1) Pilot instructors must hold and ATPL and the ratings required to serve as a pilot in command on a specific aircraft in revenue service. Flight Engineer instructors must hold a flight engineer certificate and the necessary endorsements to serve as a flight engineer in revenue service

(2) Pilot instructors and flight engineer instructors must have a valid Class 1 medical certificate.

(3) Pilot instructors must meet all training and currency requirements to serve as PIC for the operator including ground and flight training, proficiency or Competency Checks, and the 90-day landing currency. Similarly, flight engineer instructors must meet all training and currency requirements to serve as a flight engineer for the operator.

(4) For pilots, must complete an annual line check or line observation recurrent qualification.

(5) The instructor must have received the Flight Instructors qualification training of the operator's approved training program for this designation.

(6) The instructor must maintain line currency as a crewmember.

(b) During training program inspections, the LCAA will ensure that all of the operator's assigned RRRRs continue to meet the above qualifications.

4.7.2 Ground Instructors

There are no specific qualification criteria for ground instructors. Through periodic inspections of operator training programs as described in Part 4, Chapter 7 of this

handbook, the Liberia CAA will ensure ground instructor competency, uniform methods of presentation, and compliance with approved training syllabi.

Figure 2-1 part 3: SAMPLE CHECK AIRMEN LETTER OF APPROVAL

LCAA LETTERHEAD

03 March, 1997

Mr. (Name)
Chief Pilot
Liberia Airways International Public
Company Ltd. (Address)

Dear (Name)

(Name), (Country of issue) ATPL number) 12345678, is approved as a Check Airmen. This Flight Instructor is approved to conduct checks in the B-737-400 aircraft for employees of Liberia Airways International Public Company Ltd.. This approval is applicable for the following checking functions:

[ ] Proficiency Check Pilot - Aircraft. Effective _____ (Date)
[ ] Proficiency Check Pilot - Simulator. Effective_____ (Date)
[ ] Line Check Pilot. Effective _____ (Date)

[Check Pilot - All Checks. Effective_____Date)

[ ] Check Flight Engineer - Airplane Only. Effective _____(Date)
[ ] Check Flight Engineer - All Checks. Effective_____ (Date)

Please retain a copy of this letter in Mr. (Name's) individual flight training records.

Sincerely,

Chief, Flight Safety Standards Department

CHAPTER 5: PROVING FLIGHTS

5.1 BACKGROUND AND OBJECTIVES

(a) Proving tests consist of a series of flights which are designed to demonstrate prior to the issuance of the AOC that the applicant is capable of operating and maintaining each aircraft type which he proposes to use to the same standards required of an established carrier. Proving flights may also be required of a fully certified airline which is adding a new airplane type to its fleet. Successful proving flights may be considered the final proof that an operator is ready to commence revenue operations with a specific type of airplane. During these inspections, the LCAA will have the opportunity to observe and evaluate the in-flight operations within the total operational environment of the air transportation system. In the course of these flights, paying passengers will not be carried. However, it is generally 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. These company officials may also serve as passengers for purposes of realism, so that the Cabin Attendants can perform their normal duties such as passenger briefings and meal services.

(b) The applicant and the LCAA inspector should plan well in advance for the conduct of the proving 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 and rules. General objectives for pre-certification proving flights should include the determination of the adequacy of:

(1) in-flight procedures laid down in the operations manual and compliance with those procedures;

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

(3) the support provided by operational control to the flight crew;

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

(5) en-route facilities.

(c) Proving test flights are operated exactly as though the applicant is conducting revenue operations. However, during the course of the flights the LCAA may introduce simulated situations which will require appropriate responses by crewmembers and ground personnel.

5.2 SPECIFIC PROCEDURES

(a) Proving flights will consist of a minimum of 10 hours (5 hours for domestic flights) flown over routes for which the operator seeks approval. At least 4 route segments must be flown, if practicable. If the operator seeks approval for night operations, 5 of the 10 hours must be flown at night, if practicable. The sequence of events for the proper planning for and carrying out of proving flights will be as follows:

(1) Well before the proving flights (during the pre-application phase of the certification process) the LCAA will have briefed the operator regarding the necessity for proving flights, what must be accomplished, and the areas which will be evaluated.

(2) At least 10 days prior to the proving flights, the operator must submit a proving test plan consisting of a detailed schedule of the proposed flights including dates, times, and airports to be used, along with a list of names of all crewmembers who will be used on each flight. The applicant should also provide a list of names and titles of non-crewmember personnel who will be aboard the aircraft during the flights. Preliminary flight plan information containing predicted fuel, baggage, and passenger loads for each segment along with predicted gross takeoff and landing weights must also be provided.

(3) After receipt of the proving test plan from the operator, the LCAA team will develop a proving flight scenario consisting of simulated emergencies and other means of testing the crewmembers' and operators operator's ability to cope with actual operational contingencies. Since the primary purpose of the proving flights is to ensure basic compliance with safe operating procedures during routine operations, the introduction of simulated abnormal and emergency conditions should be kept to the minimum required to evaluate the operator's capability to respond to such conditions. The following are typical scenarios which may be useful in evaluating the operator's capabilities:

(i) Diversion to alternate airports for reasons such as weather or maintenance. This tests the company's communications, maintenance, ground handling, and other operational capabilities.

(ii) MEL or CDL situations - this tests crewmembers' understanding of specific operational limitations and the company's operations and maintenance procedures. For example, dispatching with an inoperative AC generator tests the operator's ability to comply with the operational and maintenance provisions of the MEL.

(iii) Performance problems - this requires the aircrew and dispatch or flight control personnel to demonstrate competency and knowledge of such items as aircraft performance, airport analysis charts, and alternative company procedures. For example, simulating one-half inch of standing water on a departure runway will test the operator's ability to make performance adjustments.

(iv) Hazardous cargo - the introduction of simulated hazardous cargo will test the applicant's ability to properly document and handle such items.

(v) Simulated aircraft emergencies such as engine failure - this test the flight crew's knowledge and competency in handling emergency situations. It also tests the operator's communications, maintenance, and other capabilities. Under no circumstances may an actual engine shutdown be required. However, at the discretion of the LCAA team leader, a throttle may be retarded to idle thrust during flight and throughout the approach and landing.

(vi) Simulated cabin emergencies - this tests the ability of the Cabin Attendants to deal with cabin abnormalities in accordance with established company procedures and to coordinate with the flight deck crew. Possible scenarios may include a simulated incapacitated passenger in need of immediate medical assistance, a simulated lavatory fire, or a simulated loss of pressurization.

(4) The proving test flights are then carried out in accordance with the operator's plan and the LCAA scenario.

(5) Following each segment of the flight, the operator should be debriefed by the LCAA team leader regarding the progress thus far. Unsatisfactory conditions noted by the

team leader should immediately be brought to the attention of the applicant for corrective action. The opportunity should be provided to 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 must be corrected or resolved to the satisfaction of the LCAA team leader before the series of flights can be considered successful. Some examples of deficiencies requiring corrective action are:

(i) flight crew member not properly trained, e.g. requires assistance from applicant supervisors or a LCAA inspector;

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

(iii) cabin crew member not properly trained or not familiar with location or use of emergency equipment or emergency evacuation procedures;

(iv) numerous aircraft deficiencies and/or systems malfunctions;

(v) inadequate mass and balance or load control;

(vi) unsatisfactory operational control, e.g. improper flight planning and flight release procedures;

(vii) unacceptable maintenance procedures or practices; and

(viii) improper aircraft servicing and ground handling procedures.

(6) Within 24 hours after the entire series of proving flights is 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.

5.3 EVALUATION AND REPORTING

The routine portion of the applicant's operational performance during the series of proving test flights will be evaluated using the Cockpit Enroute Inspection Checklist/Report form and the criteria contained in part 4, Chapter 9 of this handbook, the Cabin Enroute Checklist/Report along with criteria contained in part 4, Chapter 10, and the Station Facility Inspection Checklist/Report along with the criteria contained in part 4, Chapter 9 (if applicable). These will be attached to the Proving Flight Checklist/Report form which is shown in Figure 3-1 part 3 at the end of this chapter. Emergency and abnormal scenarios which were conducted during the proving flights will be listed in item 4 of figure 3-1 part 3.

Figure 3-1 part 3

LCAA

AIR OPERATOR PROVING FLIGHT REPORT

1. Airline.

2. Aircraft Type.

3. Flight Information

Dates	Route Segments (List 3-letter identifiers of origin and destination airports)	Flight Time	
		Day	Night

4. Emergency/Abnormal Scenarios. (list)

5. Results: 0 Satisfactory 0 Unsatisfactory

A. Remarks: (Continue on back if necessary)

Note: *Attach en route cockpit and cabin report forms and station facility inspection report forms if applicable, along with copy of letter to company advising whether flights were found to be satisfactory or unsatisfactory.*

Inspector's Signature: _____

CHAPTER 6. EMERGENCY EVACUATION DEMONSTRATIONS

6.1 CATEGORIES OF EMERGENCY EVACUATION DEMONSTRATIONS

(a) There are two categories of emergency evacuation demonstrations:

(1) Full-scale evacuation and
(2) Partial evacuation.

6.1.1 Full-scale Evacuation Demonstration

(a) The primary purpose of a full-scale evacuation demonstration is to ensure that the airplane design and seating configuration will permit the safe and complete evacuation of all passengers through 50 per cent of the installed emergency exits within a specified time frame. Adequacy of the crewmember compliment and operational procedures and training is also evaluated.

(a) A full-scale evacuation demonstration requires the use of an aircraft, parked on apron or in a hanger, with a complete complement of crew members (flight deck and cabin) and each passenger seat occupied by a "passenger" participant. The crewmembers are required to simulate an aborted takeoff followed by a situation which requires the immediate evacuation of the aircraft in 90 seconds or less.

(b) Full scale demonstrations are usually conducted by the manufacturer for the State of manufacture during the type certification process. Subsequent full-scale evacuations are only required when an airline uses a seating capacity which is greater than what has previously been demonstrated. It is unlikely that the LCAA will ever have to require an operator to perform a full-scale evacuation. Because a full-scale evacuation demonstration is a complex undertaking with an inherent risk of minor injury to the participants, in the event that a full-scale demonstration is required of a Liberian operator, the LCAA will obtain assistance from another State which is highly experienced in conducting such demonstrations.

6.1.2 Partial Evacuation Demonstration

For issuance of an AOC or variation to an AOC, the adequacy of an operator's training and procedures along with the proper functioning of emergency exits can be determined through a partial evacuation demonstration. In this demonstration, a full complement of crew members are required to carry out the procedures for an emergency evacuation, including opening 50 per cent of the emergency exits and successfully deploying the escape slides at those exits within a specified time frame. No passenger seats are occupied an no person is required to actually exit the airplane by means of an escape slide.

6.2 PROCEDURES FOR PARTIAL EVACUATION DEMONSTRATION

(a) The following procedures will be followed in conducting a partial emergency evacuation demonstration:

(1) A planning meeting will be held with the operator well in advance of the demonstration in order to discuss the exact procedures to be followed and the criteria for a successful demonstration.

(2) The operator will provide for the demonstration an aircraft of the type, model, and cabin configuration for which approval is sought, along with a qualified and current cockpit crew and two complete compliments of cabin crew members. The purpose of requiring two complete compliments of Cabin Attendants is so that the LCAA may select, immediately prior to the demonstration, the flight attendants who will actually participate in the demonstration. This is to lessen the possibility that the operator will provide extra training to those flight attendants which it knows in advance will participate in the demonstration, so that their performance will not be representative of the level of proficiency of all of the operator's Cabin Attendants.

(3) The demonstration will be conducted in darkness, either on an apron at night or in a hangar with the lights extinguished.

(4) During the steps leading to the commencement of the timing of the demonstration, the airplane's electrical system will be fully powered by either an external power unit or the APU.

(5) Crewmembers will simulate complete preparation for takeoff, including the execution of all checklists up to and including the takeoff checklist. Engine operation will be simulated. Cabin Attendants will be seated at their normal stations for takeoff.

(6) The cockpit crew will simulate the commencement of the takeoff roll followed by a high-speed, aborted takeoff due to an engine fire or other appropriate simulated malfunction.

(7) The evacuation of the airplane will be signaled through the failure normal electrical power (by disconnecting the external power unit or APU). Interruption of normal power will be a clear signal to all involved that the timing of the demonstration has commenced. Outside, the aircraft's external lights (taxi lights, anti-collision lights, position and logo lights) will extinguish. Inside, normal cabin lighting will extinguish and all emergency exit lights and floor-level lighting (if installed) will illuminate if functioning properly.

(8) Immediately upon failure of the normal electrical system the flight attendants will be required to unbuckle their safety harnesses, leave their jump seats, ascertain which exits are usable, open the usable exits, and deploy the escape slides. In order for the demonstration to be successful, the total time which elapses from the interruption of electrical power until full deployment of all activated slides must not exceed 15 seconds. Slides are not considered fully deployed until they reach the ground and are inflated to a firmness which would safely support the egress of passengers.

(9) To monitor, time, and evaluate the demonstration, LCAA personnel will be positioned in the cockpit and at each exit inside of the airplane and outside the airplane at each exit. The LCAA inspector who is responsible for the timing of the demonstration will be positioned outside of the airplane with a stop watch. He will commence timing when the external lights of the aircraft are extinguished. After precisely 15 seconds, he will call "time" to all participants and the demonstration will be considered complete. He will then confer with the LCAA team members who were stationed at the exits both inside and outside of the airplane to confirm whether or not procedures were properly followed and that the slides were adequately deployed by the time 15 seconds elapsed.

(10) Only 50 per cent of the exits will be used. The operator's personnel inside the airplane should not know in advance which exits will be used and which will be rendered unusable. One method for indicating to the UUUU immediately after the commencement of the demonstration which exits are unusable is to station LCAA personnel with bright flashlights outside of those exits. When the exterior lights of the airplane are extinguished and the timing begins, those LCAA personnel will shine their flashlights directly on the windows of the emergency exits which are to be considered inoperable, thus simulating a fire on that side of the airplane. In accordance with their procedures, Cabin Attendants must look through the window of an emergency exit to make sure that it is usable before opening it and deploying the escape slide for use by passengers. In this case, if the cabin attendant approaches an exit and observes a light shining on the window, he or she will consider it inoperative and choose an alternative exit to be opened.

6.3 EVALUATION OF THE PARTIAL EVACUATION DEMONSTRATION

(a) Specific points to be noted during the evacuation demonstration are:

(1) adherence by flight and cabin crew members to the execution of assigned duties and responsibilities both in the aircraft and on the ground;

(2) effectiveness of the pilot-in-command in the exercise of command responsibilities;

(3) succession to command in event of casualties;

(4) effectiveness of crew members in performing their assigned evacuation duties; and

(5) shortcomings, deficiencies or delays encountered.

(b) If the applicant cannot satisfactorily demonstrate emergency evacuation for each particular type, model and configuration of aircraft within 15 seconds, the applicant will be required to take steps to correct the deficiency which could include the following:

(1) revising evacuation procedures;

(2) improving crew training;

(3) modifying or changing the equipment used;

(4) changing the passenger compartment arrangement; and

(5) reducing total passenger seating capacity.

6.4 EMERGENCY EVACUATION DEMONSTRATION REPORT

Figure 4-1 part 3, which follows, contains a sample of the report form which is to be used for documenting the demonstration.

Figure 4-1 part 3

Liberia CAA

AIR OPERATOR PARTIAL EMERGENCY EVACUATION DEMONSTRATION REPORT

- **Name of operator:** ____
- **Date/time of demonstration:**
- **Aircraft type/model:**
- **Number of installed seats:**
- **Crewmember names:** (List name and crew position of each participant)
- **Results:** ○ **Satisfactory** ○ **Unsatisfactory**
- **Remarks:** (Include description of which exits were used and whether or not slides were deployed within 15 seconds of commencement of drill - continue on back if necessary.)

Inspector's Signature _____

CHAPTER 7: DITCHING DEMONSTRATIONS

7.1 GENERAL

(a) A ditching demonstration is be required during the operational inspection phase of the certification process for each aircraft type, model and configuration which will be operated on extended flights over water routes (on any route which passes more than 50 nautical miles from land). The purpose of the demonstration is to evaluate the operator's ability to safely prepare passengers, airplane, and ditching equipment for a planned water landing. Prior to conducting this demonstration, the Liberia CAA should determine whether the aircraft has an airworthiness certification covering ditching. If the aircraft is not certificated for ditching, extended flights over water should not be authorized. During the demonstration, the following four areas are evaluated:

(1) Emergency training program

(2) Ditching procedures

(3) Crewmember competency

(4) Equipment adequacy and reliability

(b) Similar to the emergency evacuation, there are two types of ditching demonstrations which may be required: full-scale and partial. Since full-scale ditching demonstrations have been conducted by the manufacturer during the type certification process for most airplane types, it is likely that the Liberia CAA will only require a partial demonstration by an applicant for an AOC.

7.2 PARTIAL DITCHING DEMONSTRATION

(a) The following procedures will be followed in conducting a partial ditching demonstration:

(1) The demonstration must be conducted during daylight hours or in a lighted hanger if conducted at night.

(2) All required crewmembers must be available and used

(3) Passenger participants (company personnel other than crewmembers who are acting as "passengers") will be used only when the operator's procedures require passengers to assist in the removing and launching of life rafts. If used, passengers will not receive any instructions before the demonstration except what is contained in the operator's manual.

(4) To commence the demonstration, the crewmembers will simulate, in a parked airplane, a normal takeoff and climb to cruise flight. Engine start will be simulated and all checklists will be accomplished. Upon the LCAA team leader's signal, the captain will order the crew to prepare for ditching. At that time, the team leader will commence timing for 6 minutes in order to give the crew time to prepare for a simulated water landing. After the simulated water landing, all liferafts must be removed from storage. This action is not specifically time; however, the crewmembers must demonstrate competency in removing the rafts from storage and the raft must be capable of being removed from the airplane for deployment in a reasonable period of time.

(5) When the ditching signal is given, each evacuee must put on a life preserver in accordance with the operator's manual and the flight attendants' briefing.

(6) Each liferaft must be removed from stowage for inspection.

(7) One liferaft, selected by the LCAA, will be inflated and launched and the evacuees assigned to that raft will get in it. The crewmembers assigned to the raft will locate and describe the use of each item of emergency equipment contained in the raft.

Note: *For the purpose of the demonstration, "launching" a liferaft means to remove it from stowage, manipulate it out of the airplane by means of stands or ramps, and position it on the ground before inflation. Launching a slideraft means to inflate it in the normal manner then lower it to the ground.*

7.3 EVALUATION OF THE DITCHING DEMONSTRATION

(a) The following are specific points to be noted and evaluated during the ditching demonstration:

(1) A sufficient number of items of emergency equipment, i.e. life rafts, inflatable slides, life jackets, medical kits, first aid kits, emergency locator transmitter, etc., are carried on board;

(2) emergency equipment is properly stowed and can be readily removed or ejected from the aircraft in the time specified;

(3) means are provided and utilized to prevent emergency equipment from drifting away from survivors;

(4) slides, life jackets and life rafts inflate fully within acceptable time limits and other emergency equipment functions properly, including proper deployment of inflatable slides;

(5) selection of emergency exits to be utilized and that such exits can be opened readily;

(6) emergency procedures and related checklists are adequate and are properly used by the crew members;

(7) the crew is properly trained;

(8) crew members are familiar with and adhere to the timely execution of their assigned duties and responsibilities;

(9) crew members, using available emergency equipment and following the procedures outlined in the operations manual, can facilitate the evacuation of the aircraft under those critical conditions expected during the short period of time the aircraft would remain afloat; and

(10) adequate safety precautions are followed by the crew members to prevent possible injury to evacuees or themselves.

(b) In assessing the effectiveness of the ditching demonstration the Liberia CAA inspector should record the following:

(1) Time from start of ditching until each exit door or emergency exit to be utilized is open;

(2) time when each life raft is launched;

(3) time required to inflate each life raft; and

(4) time when all life rafts are boarded.

(c) Any deficiencies noted during the ditching demonstration regarding the evacuation procedures or related emergency equipment such as inflatable slides, emergency exits, life

rafts, etc., must be rectified by the applicant. This may require additional demonstrations before these emergency procedures can be considered acceptable by the Liberia CAA.

7.4 REPORTING PROCEDURES

The form shown in figure 5-1 part 3 below will be used for reporting ditching demonstrations.

Figure 5-1 part 3

Liberia CAA

AIR OPERATOR PARTIAL DITCHING DEMONSTRATION REPORT

1. **Name of operator:** ____

2. **Date/time of demonstration:**

3. **Aircraft type/model:**

4. **Crewmember names:** (List name and crew position of each participant)

5. **Times.**

   (a) From start of demonstration until each exit door or emergency exit to be utilzed is opened:

   (b) Time when raft is launched:

   (c) Time required to inflate raft:

6. **Results:** ◯ **Satisfactory** ◯ **Unsatisfactory**

7. **Remarks:** (Include description of which exits were used and whether or not slides were deployed within 15 seconds of commencement of drill - continue on back if necessary.)

Inspector's Signature _____

CHAPTER 8: LEASE AND INTERCHANGE AGREEMENTS BETWEEN STATES

8.1 BACKGROUND

(a) ICAO specifies that the fundamental responsibility for the operation of an aircraft lies with the State of Registry. However, special conditions may arise as a result of aircraft leasing or interchange agreements between a TTTT Operator and an operator or leasing company in another State. Unless suitable arrangements are made, complex legal, safety, and enforcement problems may be created for both the State of Registry and State of the Operator. It is therefore essential that agreement is reached on two key issues:

(1) Which State's regulations are to be applied and which State is responsible for the safe operation and airworthiness of the aircraft.

(2) Which operator (lessor or lessee) is responsible for the day to day operational control of the leased aircraft.

(b) The two above issues are closely related because responsibility for the safe operation and airworthiness of an aircraft may be viewed from two directions: Responsibilities of the State of Registry under certain specific articles to the Chicago Convention; and the responsibilities (contained in Annex 6 Part 1) of the State who oversees the AOC of the operator which has operational control. In this regard, the following ICAO articles are especially germane:

(1) *Article 12 - Rules of the Air*. Article l2 makes States responsible for ensuring that every aircraft carrying its nationality mark, wherever such aircraft may be, shall comply with the State's rules and regulations relating to the flight and manoeuvre of aircraft.

(2) *Articles 17, 18, 19 and 20 - Nationality of Aircraft*. These articles provide that aircraft have the nationality of the State in which they are registered; that an aircraft cannot be registered in more than one State, but its registration may be changed from one State to another; and that every aircraft engaged in international air navigation shall bear its appropriate nationality and registration marks.

(3) *Article 30 - Aircraft Radio Equipment*. Aircraft radios must be licensed by the State of Registry if they are to be carried in or over the territory of other Contracting States. The use of radio apparatus must be in accordance with the regulations of the State flown over. Radios can only be used by members of the flight crew licensed for that purpose by the State of Registry.

(4) *Article 31 - Certificates of Airworthiness*. Every aircraft engaged in international navigation must be provided with a certificate of airworthiness issued or rendered valid by the State of Registry.

(5) *Article 32 - Licenses of Personnel*. The pilot and crew of aircraft engaged in international navigation must be provided with certificates of competency issued or rendered valid by the State of Registry. States can refuse to recognize, for the purpose of flight above their territory, certificates of competency and licenses granted to any of its nationals by another Contracting State.

(c) In addition to responsibilities which go with the nationality of an airplane, as enumerated in the preceding articles, States are required to approve and oversee all facets of their AOC holders' maintenance and flight operations in accordance with paragraph 4.2 of Part 1 to Annex 6. Depending upon the exact nature of a lease agreement, these responsibilities may mix and overlap between two States.

(d) Article 83 bis of the Chicago convention, which will come into full force upon ratification by 98 contracting States, provides that in the case of lease, charter, or interchange operations, the State of Registry may enter into an agreement with the state to which the aircraft is leased to transfer all or part of its responsibilities under articles 12, 30, 31, and 32. Many developed countries have already ratified this article and are entering into such agreements as a means of resolving many regulatory oversight problems associated with lease agreements.

8.2 DEFINITIONS

For purposes of this section, the following definitions will be useful:

(1) Wet Lease. The lease of aircraft with a full or partial flight crew.

(2) Dry Lease. The lease of an aircraft without crew.

8.3 SPECIFIC PROCEDURES REGARDING LEASES

(a) When an applicant or holder of a Liberian AOC wishes to use leased aircraft in the operation, the operator should provide the LCAA with the following information:

(1) The aircraft type and serial number;

(2) the name and address of the registered owner;

(3) State of Registry and registration marks;

(4) Certificate of airworthiness and statement from the registered owner that the aircraft fully complies with the airworthiness requirements of the State of Registry;

(5) name, address and signature of lessee or person responsible for operational control of the aircraft under the lease agreement, including a statement that such individual and the parties to the lease agreement fully understand their respective responsibilities under the application regulations;

(6) copy of the lease agreement or description of lease provisions; and

(7) duration of the lease.

(b) After careful review and liaison as necessary with other competent authorities, the LCAA will make the determination as to which party to the lease agreement is in fact responsible for conducting the operation. In making this determination the LCAA must consider the responsibilities of the parties under the lease agreement for:

(1) Flight crew member certification and training;

(2) crew member training;

(3) airworthiness of the aircraft and performance of maintenance;

(4) dispatch or flight following;

(5) scheduling of flight crew and crew members; and

(6) signing the maintenance release

(c) If the agreement is determined to be a wet lease, the lessor normally exercises operational control over the aircraft and the responsibility for the airworthiness and operational oversight of the airplane will remain with the State of Registry. If the agreement is in the nature of a dry lease, then responsibility for operational control will normally rest with the lessee, and it may be advantageous for the State of Registry to enter into agreement with the State of the operator to transfer or share various facets of operational and airworthiness oversight. However, leasing agreements are often very complex instruments wherein the line between wet and dry is blurred and arguments for which operator should exercise day to day operational control are not clear cut. For example, flight crews may be comprised of a mix of personnel from both the lessor and lessee.

(d) Whatever the case, the LCAA will firmly establish, through written agreements with the LCAA of the other State concerned with the transaction, which State will have responsibility for every facet of operational and airworthiness oversight of the leased aircraft. All responsibilities must be considered and assigned: those associated with the State of Registry, and those associated with the State which oversees the AOC of the airline which has operational control

CHAPTER 9: REQUIRED MANEUVERS AND PERFORMANCE STANDARDS FOR AIR TRANSPORT PILOT PROFICIENCY CHECK

9.1 GENERAL

(a) Flight crew proficiency checks are required twice each year for an air transport pilot-in command and co-pilot/second-in command. This chapter describes the maneuvers and procedures which must be performed by all pilots during such an air transport Pilot Proficiency Check along with performance standards for evaluating the performance of those maneuvers and procedures. All maneuvers and procedures must be performed in flight in an airplane or in a LCAA approved Level I or Level II flight simulator except as provided in 7.1.(b) below.

Note: *See ICAO Doc 9625-AN/ 938 for definitions and qualifying criteria for Level I and Level II flight Simulators.*

(b) Certain maneuvers and procedures may be performed in a LCAA approved visual flight simulator other than Level I or Level II, in a non-visual simulator, or in a training device, if so indicated by one of the following symbols after the description of a maneuver or procedure in paragraph 7.2 below:

(1) (PV) Permitted in an approved visual simulator other than Level I or Level II
(2) (PN) Permitted in an approved non-visual simulator
(3) (PT) Permitted in an approved training device
(4) (RS) Required to be performed in simulated instrument conditions

(c) Whenever a maneuver or procedure is authorized to be performed in a nonvisual simulator, it may also be performed in a visual simulator; when authorized in a training device, it may be performed in a visual or nonvisual simulator. Other symbols used to denote special requirements in 7.2 below are:

9.2 REQUIRED MANEUVERS

(a) Throughout the maneuvers prescribed in this paragraph, good judgment commensurate with a high level of safety must be demonstrated. In determining whether such judgment has been shown, the person conducting the check considers adherence to approved procedures, actions based on analysis of situations for which there is no prescribed procedure or recommended practice, and qualities of prudence and care in selecting a course of action.

(b) The procedures and maneuvers set forth in this chapter must be performed in a manner that satisfactorily demonstrates knowledge and skill with respect to

(1) The airplane, its systems and components;

(2) Proper control of airspeed, configuration, direction, altitude, and attitude in accordance with procedures and limitations contained in the approved Airplane Flight Manual, the certificate holder's operations Manual, check lists, or other approved material appropriate to the airplane type; and

(3) Compliance with approach, ATC, or other applicable procedures.

9.2.1 Preflight

(a) Equipment examination (oral or written).

As part of the practical test the equipment examination must be closely coordinated with, and related to, the flight maneuvers portion but may not be given during the flight maneuvers portion. The equipment examination must cover:

(1) Subjects requiring a practical knowledge of the airplane, its powerplants, systems, components, operational, and performance factors;

(2) Normal, abnormal, and emergency procedures, and the operations and limitations relating thereto; and

(3) The appropriate provisions of the approved Airplane Flight Manual.

The person conducting the check may accept, as equal to this equipment test, an equipment test given to the pilot in the certificate holder's ground school within the preceding 6 calendar months.

(b) Preflight inspection. The pilot must:

(1) Conduct an actual visual inspection of the exterior and interior of the airplane, locating each item and explaining briefly the purpose for inspecting it; and

(2) Demonstrate the use of the prestart check list, appropriate control system checks, starting procedures, radio and electronic equipment checks, and the selection of proper navigation and communications radio facilities and frequencies prior to flight, (PT).

(c) Taxiing.

This maneuver includes taxiing (in the case of a second in command proficiency check to the extent practical from the second in command crew position), sailing, or docking procedures in compliance with instructions issued by the appropriate traffic control authority or by the person conducting the checks.

(d) Power plant checks. As appropriate to the airplane type. (PN).

9.2.2 Takeoff

(a) Normal.

One normal takeoff which, for the purpose of this maneuver, begins when the airplane is taxied into position on the runway to be used.

(b) Instrument

One takeoff with instrument conditions simulated at or before reaching an altitude of 100 feet above the airport elevation. (RS) (PV).

(c) Crosswind.

One crosswind takeoff, if practicable, under the existing meteorological, airport, and traffic conditions.

Requirements (a) and (c) may be combined, and requirements (a), (b), and (c) may be combined if (b) is performed inflight.

(d) Power plant failure.

One takeoff with a simulated failure of the most critical powerplant. (PV).

(1) At a point after V1 and before V2 that in the judgment of the person conducting the check is appropriate to the airplane type under the prevailing conditions;

(2) At a point as close as possible after V1 when V1 and V2 or V2 and Vr are identical;

(e) Rejected.

A rejected takeoff may be performed in an airplane during a normal takeoff run after reaching a reasonable speed determined by giving due consideration to aircraft characteristics, runway length, surface conditions, wind direction and velocity, brake heat energy, and any other pertinent factors that may adversely affect safety or the airplane. (PV).

9.2.3 Instrument Procedures

(a) Area departure and area arrival.

During each of these maneuvers the applicant must: (RS) (PN).

(1) Adhere to actual or simulated ATC clearances (including assigned radials); and

(2) Properly use available navigation facilities.

(b) Holding.

This maneuver includes entering, maintaining, and leaving holding patterns. It may be performed in connection with either area departure or area arrival. (RS) (PN).

(c) ILS and other instrument approaches. There must be the following:

(1) At least one normal ILS approach. (RS) (PV).

(2) At least one manually controlled ILS approach with a simulated failure of one powerplant. The simulated failure should occur before initiating the final approach course and must continue to touchdown or through the missed approach procedure. (RS).

(3) At least one nonprecision approach procedure that is representative of the nonprecision approach procedures that the certificate holder is likely to use. (RS) (PV).

(4) Demonstration of at least one non precision approach procedure on a letdown aid other than the approach procedure performed under subparagraph (3) of this paragraph that the certificate holder is approved to use. (RS) (PV).

Each instrument approach must be performed according to any procedures and limitations approved for the approach facility used. The instrument approach begins when the airplane is over the initial approach fix for the approach procedure being used (or turned over to the final approach controller in the case of CA approach) and ends when the airplane touches down on

the runway or when transition to a missed approach configuration is completed. Instrument conditions need not be simulated below 100 feet above touchdown zone elevation.

(d) Circling approaches.

If the certificate holder is approved for circling minimums below 1000ft/3sm, at least one circling approach must be made under the following conditions: (PV).

(1) The portion of the approach to the authorized minimum circling approach altitude must be made under simulated instrument conditions. (RS).

(2) The approach must be made to the authorized minimum circling approach altitude followed by a change in heading and the necessary maneuvering (by visual reference) to maintain a flight path that permits a normal landing on a runway at least 90° from the final approach course of the simulated instrument portion of the approach.

(3) The circling approach must be performed without excessive maneuvering, and without exceeding the normal operating limits of the airplane. The angle of bank should not exceed 30°.

If local conditions beyond the control of the pilot prohibit the maneuver or prevent it from being performed as required, it may be waived. However, the maneuver may not be waived under this provision for two successive proficiency checks. The circling approach maneuver is not required for a second in command if the certificate holder's manual prohibits a second in command from performing a circling approach.

(e) Missed approach.

(1) Each pilot must perform at least one missed approach from an ILS approach (PV).

(2) Each pilot in command must perform at least one additional missed approach. (PV).

A complete approved missed approach procedure, to a holding fix or other point as required by ATC, must be accomplished at least once. At the discretion of the person conducting the check a simulated powerplant failure may be required during any of the missed approaches. These maneuvers may be performed either independently or in conjunction with maneuvers required under Sections III or V of this appendix. At least one missed approach must be performed in flight.

9.2.4 Inflight Maneuvers:

(a) Steep turns.

At least one steep turn in each direction must be performed. Each steep turn must involve a bank angle of 45° with a heading change of at least 180° but not more than 360°. (RS) (PN).

(b) Approaches to stalls.

For the purpose of this maneuver the required approach to a stall is reached when there is a perceptible buffet or other response to the initial stall entry. Except as provided below there must be at least three approaches to stalls as follows: (RS) (PN).

(1) One must be in the takeoff configuration (except where the airplane uses only a zero flap takeoff configuration).

(2) One in a clean configuration.

(3) One in a landing configuration.

At the discretion of the person conducting the check, one approach to a stall must be performed in one of the above configurations while in a turn with the bank angle between 15° and 30°.

If the certificate holder is authorized to dispatch or flight release the airplane with a stall warning device inoperative the device may not be used during this maneuver.

(c) Specific flight characteristics.

Recovery from specific flight characteristics that are peculiar to the airplane type. (PN).

(d) Powerplant failures.

In addition to specific requirements for maneuvers

With simulated powerplant failures, the person conducting the check may require a simulated powerplant failure at any time during the check. (PN).

9.2.5 Landings and Approaches to Landings

Notwithstanding the authorizations for combining maneuvers, at least two actual landings (one to a full stop) must be accomplished. Landings and approaches to landings must include the following, but more than one type may be combined where appropriate:

(a) Normal landing. (RS).

(b) Landing in sequence from an ILS instrument approach.

Except that if circumstances beyond the control of the pilot prevent an actual landing, the person conducting the check may accept an approach to a point where in his judgment a landing to a full stop could have been made. (RS).

(c) Crosswind landing.

If practical under existing meteorological, airport, and traffic conditions. (RI).

(d) Maneuvering to a landing with simulated powerplant failure as follows:

(1) In the case of 3 engine airplanes, maneuvering to a landing with an approved procedure that approximates the loss of two powerplants (center and one outboard engine). (PV).

(2) In the case of other multiengine airplanes, maneuvering to a landing with a simulated failure of 50 percent of available powerplants, with the simulated loss of power on one side of the airplane. (PV).

(e) Landing from a circling approach.

If the certificate holder is approved for circling minimums below 1000 - 3, a landing under simulated circling approach conditions. However, when performed in an airplane, if circumstances beyond the control of the pilot prevent a landing, the person conducting the check may accept an approach to a point where, in his judgment, a landing to a full stop could have been made. B* (PV).

(f) Rejected landing.

A rejected landing, including a normal missed approach procedure, that is rejected approximately 50 feet over the runway and approximately over the runway threshold. This maneuver may be combined with instrument, circling, or missed approach procedures, but instrument conditions need not be simulated below 100 feet above the runway. B (PV).

9.2.6 Normal and Abnormal Procedures

Each applicant must demonstrate the proper use of as many of the systems and devices listed below as the person conducting the check finds are necessary to determine that the person being checked has a practical knowledge of the use of the systems and devices appropriate to the airplane type:

(1) Anti-icing and deicing systems. (PN).

(2) Autopilot systems. (PN).

(3) Automatic or other approach aid systems. (PN).

(4) Stall warning devices, stall avoidance devices, and stability augmentation devices. (PN).

(5) Airborne radar devices. (PN).

(6) Any other systems, devices, or aids available. (PN).

(7) Hydraulic and electrical system failures and malfunctions. (PN).

(8) Landing gear and flap systems failure or malfunction. (PT).

(9) Failure of navigation or communications equipment. (PT).

9.2.7 Emergency Procedures

Each applicant must demonstrate the proper emergency procedures for as many of the emergency situations listed below as the person conducting the check finds are necessary to determine that the person being checked has an adequate knowledge of, and ability to perform, such procedure:

(1) Fire in flight. (PN).

(2) Smoke control. (PN).

(3) Rapid decompression. (PN).

(4) Emergency descent. (PN).

(5) Any other emergency procedures outlined in the appropriate approved Airplane Flight Manual. (PN).

9.3 SPECIFIC GUIDANCE FOR THE CONDUCT OF PROFICIENCY CHECKS

The information presented in this paragraph is intended to provide additional, detailed guidance for the manner in which proficiency checks must be conducted. To that end, specific techniques are discussed and the maneuvers listed in paragraph 7.2 above are further explained and clarified.

9.3.1 Preparation and Surface Operations

(a) Pilots shall be observed performing interior, exterior, and emergency equipment inspections and performing engine start, taxi, and powerplant checks in accordance with the operator's aircraft operating manual.

(1) *Exterior Inspection.* The exterior inspection is not an extension of the oral phase in which systems knowledge is examined but rather a demonstration of an applicant's ability to perform appropriate safety checks. Inspectors and examiners shall limit questions to only those necessary for determining if an applicant can recognize when a component is in an unsafe condition. The exterior inspection may be conducted before or after the flight test at the inspector's or examiner's discretion.

(2) *Cabin Inspection.* Pilots shall be evaluated on the ability to perform a cabin inspection when this inspection is specified as a pilot responsibility by the operator's aircraft operating manual. Inspectors and examiners should occasionally sample an pilot's knowledge of the location and use of emergency equipment in the cabin, and the operation of cabin doors, even when the cabin inspection is not designated as a flight crewmember responsibility.

(3) *Cockpit Preflight Inspection.* A pilot shall be required to complete the cockpit preflight checks using the procedures specified in the operator's aircraft operating manual and using the appropriate checklists. The proper challenges and responses to the checklist must be used. When the flight test is conducted in a flight simulator, it is appropriate for the inspectors or examiners to present minor malfunctions to determine if the pilot is accurately performing the specified checks.

(4) *Engine Start Procedures.* A pilot shall be required to perform an engine start using the correct procedures. When the flight test is conducted in a flight simulator, it is appropriate for inspectors and examiners to present an abnormal condition such as a hot-start or malfunctioning air or start valve. The abnormal condition should be carried through to the expected conclusion in line operations, for the purpose of evaluating crew coordination and the pilot's proficiency.

(5) *Taxiing or Sailing.* Inspectors and examiners shall evaluate the pilot's ability to safely maneuver the airplane on the surface and to manage outside vigilance while accomplishing cockpit procedures. The pilot must ensure the taxi path is clear of obstructions, comply with local taxi rules and control tower instructions, make proper use of checklists, and maintain control of the crew and airplane.

(6) *Powerplant Checks.* Powerplant checks must be accomplished in accordance with the appropriate checklist and procedures before takeoff. In a flight simulator, inspectors and examiners should present appropriate instrument or system malfunctions to determine if the pilot is accurately performing these checks.

9.3.2 Takeoff Events

(a) A pilot shall be required to accomplish each of the following takeoff events. These events may be combined when convenient and practical.

(1) *Normal Takeoff*. A normal takeoff is defined as a takeoff beginning from a standing or rolling start (not from a touch and go) with all engines operating normally during the takeoff and initial climb phase.

(2) *Instrument Takeoff.* An instrument takeoff is defined as one in which instrument conditions are encountered or simulated at or before reaching an altitude of 100 feet above airport elevation. In a flight simulator, the visibility value should be set to the minimum authorized by the operator's operations specifications or for the runway in use. A pilot shall be evaluated on the ability to control the airplane, including making the transition to instruments as visual cues deteriorate. A pilot must also be evaluated

on the planning of the transition to an instrument navigation environment. This event may be conveniently combined with an area departure.

(3) *Engine Failure On Takeoff (For Multiengine Airplanes).* A pilot must demonstrate the ability to maintain control of the airplane and to continue a takeoff with the failure of the most critical powerplant. When the flight test is conducted in an airplane, the failure shall be simulated. The takeoff configuration, airspeeds, and operational procedures must be in accordance with the operator's aircraft operating manual. When the flight test is conducted in two segments (simulator and airplane), this event shall be conducted in the simulator segment of the flight test. This event should not be repeated in the airplane portion of the flight test unless an unusual situation occurs. The engine failure shall be introduced at a speed after V1 and before V2, and appropriate to the airplane and the prevailing conditions. When either V1 and V2 or V1 and VR are identical, the failure shall be introduced as soon as possible after V1 is passed.

(4) *Rejected Takeoff.* A rejected takeoff is a potentially hazardous situation that flightcrews must be trained to handle correctly. As a testing event it must be presented in a realistic and meaningful manner. The event is a test of a pilot's ability to correctly respond to a critical situation and to correctly manage the actions necessary for safeguarding the airplane and passengers once the airplane is brought to a stop.

(i) When a flight test is conducted in a flight simulator, performance parameters should be adjusted to make the takeoff critical. For example, the temperature and airplane weight can be adjusted so that takeoff performance is runway-limited. Another technique is to lower the visibility and make the runway wet, presenting the pilot with a tracking problem. Inspectors and examiners should take care in selecting the malfunction used to induce the reject response. The malfunction should be one that clearly and unequivocally requires rejection of the takeoff. The malfunction should be introduced at a speed which is as close to V1 as possible yet still allowing the pilot enough time to perceive and respond to the problem before reaching V1. It is appropriate for inspectors and examiners to occasionally introduce a problem in a way that leads to an evacuation of the aircraft. This event shall not be waived in a flight simulator.

(ii) When a flight test is conducted in an airplane, a rejected takeoff at approximately V1can be unsafe and can cause damage to the airplane. Inspectors and examiners are expected to use caution when inducing a rejected takeoff in an airplane for flight test purposes. For this event to be meaningful, it should be introduced at a speed close to V1. Therefore, inspectors and examiners are authorized to waive this event and should do so when the airplane weight, ambient temperature, and tire limits preclude the event from being conducted in a realistic manner.

(iii) A pilot must be able to recognize the need to initiate a rejected takeoff, perform the correct procedures in a timely manner, and to bring the airplane to stop on the runway. Once the airplane or flight simulator is brought to a stop, appropriate procedures must be initiated. Consideration must be given to the possibility of overheated brakes and fire.

(5) *Crosswind Takeoffs.* A crosswind takeoff from a standing or rolling start (not a touch and go) must be evaluated to the extent practical. When appropriate, a crosswind takeoff may be evaluated simultaneously with other types of takeoffs.

(i) When the flight test is conducted in an airplane, inspectors and examiners will usually have very little control over existing meteorological, airport, and traffic

conditions. Inspectors and examiners are expected to make a reasonable attempt to evaluate a takeoff on a runway not favorably aligned with the prevailing wind. It will frequently be necessary, however, to evaluate this event with the crosswind component that exists on the active runway.

(ii) Flight simulators are capable of realistically duplicating crosswinds. Crosswind takeoffs shall be evaluated on all flight tests conducted in a flight simulator. The crosswind component entered in the simulator computer shall be between 10 and 15 knots. Occasionally, however, the crosswind components should be in excess of 15 knots, but must not exceed the crosswind component allowed by the operator's aircraft operating manual (or the maximum demonstrated value given in the AFM). The purpose of testing at such higher crosswind components is to determine whether pilots are being trained throughout the range of the flight envelope.

9.3.3 Climb, En Route, And Descent

(a) *Area Departures and Arrivals.* The area departure and arrival events should include intercepting radials, tracking, and climbs or descents with restrictions. Whenever practical, a standard instrument departure or standard arrival should be used. Many of the standard procedures, however, are not suitable for the purpose of testing a pilot's abilities. For example, common radar departures are essentially initial climb instructions for a radar hand-off and provide little opportunity to test a pilot's ability to set up and use the navigation equipment normally used on an area departure. If a suitable published procedure is not available and circumstances allow, the inspector or examiner should give a clearance that presents the desired tests. Inspectors and examiners should allow pilots to use all installed equipment. The autopilot may or may not be used at the inspector's or examiner's discretion. The pilot's use of navigation equipment, and other crewmembers, and the pilot's ability to adhere to ATC clearances and restrictions shall be evaluated.

(b) *Holding.* Inspectors and examiners should give holding clearances with adequate time available for the pilot to identify the holding fix, select the appropriate speed, and plan the entry. Pilots should be allowed the use of all aids normally available in the cockpit (such as wind drift readouts). At least the initial entry and one complete turn in the holding pattern should be completed before another clearance is issued. The pilot's performance shall be evaluated on the basis of compliance with the holding procedures outlined in the operator's aircraft operating manual, compliance with instructions issued by ATC, and the published holding pattern criteria. Holding airspeed must be as specified by the operator's aircraft operating manual, however it must not be allowed to exceed the regulatory limit. If the operator's manual requires a speed higher than that allowed by regulation, the pilot must resolve the conflict by requesting an amended ATC clearance or by selecting an aircraft configuration in which it is safe to comply with the regulatory speed.

(c) *Steep Turns.* This event consists of a level turn in each direction with a bank of 45 degrees, continuing for at least 180 degrees, but not more than 360 degrees. Airspeed, altitude, and bank angle must be controlled within the tolerances specified in paragraph 7.4 of this chapter. Inspectors and examiners shall direct special attention to a pilot's smoothness, coordination, and orientation.

(d) *Approaches to Stalls.* Inspectors and examiners shall evaluate the pilot's ability to recognize and recover from an approach to a stall in three separate airplane configurations. The three configurations are the clean configuration, the takeoff configuration, and the landing configuration. When the airplane uses only a zero-flap takeoff configuration, the takeoff configuration and the clean configuration stall are combined and only two stalls are required. At least one stall must be performed while in a turn with a bank angle between 15 and 30 degrees.

(1) Approaches to stalls should be entered by increasing the angle of attack smoothly, so that the airspeed decreases at a uniform rate. The use of power during approach to and recovery from stalls should be as specified in the operator's aircraft operating manual.

(2) When stalls are performed in an airplane, the operator's minimum entry and recovery altitudes must be observed. When stalls are performed in a flight simulator or training device, the operator's minimum entry and recovery altitudes need not be observed and an altitude that is realistic from a performance standpoint and convenient (in terms of the sequence of events) may be used.

(3) When the flight test is conducted in a flight simulator or training device, inspectors and examiners shall occasionally require a pilot to recover from a high altitude stall. Evaluation of stalls in various flight regimes should be accomplished to determine whether the operator's training program has adequately prepared pilots for flight in those regimes.

(4) A pilot must recognize the first indication of the approaching stall and immediately initiate recovery with a minimal loss of altitude. An actual stall should not be allowed to develop. Procedures used must be in accordance with the operator's aircraft operating manual.

(e) *Specific Flight Characteristics.* This event consists of recovery from flight characteristics specific to the airplane type, such as dutch-roll or a high rate of descent. Inspectors and examiners shall evaluate a pilot on recognition and recovery from these specific flight characteristics, when applicable. The procedures used for recovery must be those specified in the operator's aircraft operating manual.

9.3.4 Approaches

(a) The approaches described in this paragraph are required on all proficiency checks. They may be combined when appropriate.

(1) ***ILS or MLA Approaches.*** Inspectors and examiners shall require pilots to fly a minimum of one normal (all engines operative) ILS or MLA. In addition, when multiengine airplanes are used, one manually-controlled ILS or MLA with a powerplant failure is also required. When the flight test is conducted as a two-segment flight test, a manually-controlled, normal ILS or MLA must be flown in the airplane segment of the flight test.

(i) When the operator's aircraft operating manual prohibits raw data approaches, the flight directors must be used during the manually-controlled ILS or MLA approaches. In this case, a raw data approach is not required to complete the flight test.

(ii) If the operator's aircraft operating manual permits raw data ILS approaches to be conducted, the operator must provide training in the use of raw data for controlling an aircraft during ILS approaches. If the operator's aircraft are equipped with a flight director system, the flight director must be used on at least one manually-controlled ILS approach. While raw data approach is not required to complete a flight test, inspectors and examiners should occasionally require a raw data approach to determine whether the operator's training program is adequately preparing pilots.

(iii) The pilot must be able to track the localizer and glideslope smoothly and without significant excursion during the final approach segment. For all raw data and flight director ILS or MLA approaches flown in a flight simulator or training device, inspectors and examiners shall require pilots to use a DH of

200 feet above the touchdown zone. The localizer and glideslope indication shall not exceed 1/4 scale deflection at DH. When the ILS indicator is calibrated with the first dot at the 1/2 scale deflection point and a second dot at the full-scale point, the deflection at DH must not exceed half the distance to the first dot. When raw data is used on ILS or MLA approaches in an airplane, inspectors and examiners shall require pilots to use a DH of 200 feet above the touchdown zone. When the flight director is used on ILS or MLA approaches in an airplane, inspectors and examiners shall require pilots to use a DH of 100 feet above the touchdown zone. However, if the pilot has accomplished an ILS using a 200 foot HAT in the simulator segment of the flight test, the published DH shall be used in the airplane portion of the test. The DH shall be determined by barometric altimeter. The localizer shall not exceed 1/4 scale deviation (1/2 dot) at decision height. The glideslope shall not exceed 1/2 scale deviation (one dot) at decision height. Inspectors and examiners shall inform pilots that this DH is for flight test purposes only and does not correlate to any minimums used in actual operations. If the flight test is being conducted in actual weather conditions, the DH shall be the published decision height.

(iv) When the operator's airplanes are equipped with autopilot couplers, at least one coupled autopilot ILS or MLA approach must be flown. If the autopilot has the capability and the operator is authorized by operations specifications to conduct automatic landings, the coupled approach shall terminate in either an autolanding or a coupled missed approach. When an autoland is conducted, it shall not be credited as one of the three required manually-controlled landings. When the flight test is conducted entirely in an aircraft or entirely in a flight simulator, the autopilot coupled approach may be combined with the normal ILS (all-engines operative) approach. This combination is permitted because the pilot's ability to manually control an ILS approach is evaluated on the ILS with an engine out.

(v) Qualification check requirements for CAT II and CAT III operations, including the required number and types of approaches are established by the operator's approved training program. If a pilot is simultaneously qualifying for these authorizations during the proficiency check, the approaches discussed in subparagraphs (i),(ii), and (iii) may be credited toward these requirements when the approach requirements are compatible.

(vi) Inspectors and examiners shall use a crosswind component of 8 to 10 knots (not to exceed 10 knots) on at least one of the ILS or MLA approaches conducted in a flight simulator. The use of this crosswind is to evaluate the pilot's ability to track the localizer and not his ability to accomplish a crosswind landing.

(vii) When the flight test is conducted in a flight simulator or flight training device, the runway visual range should be set to the minimum value specified for the approach. If the inspector or examiner plans for the pilot to acquire the runway and to continue below DH, the ceiling should be set to a value not more than 50 feet above HAT (the exact value depending on the characteristics of the specific simulator). When the flight test is conducted in an airplane, the vision restriction device must remain in use until just before the airplane arrives at the DH used for the flight test.

(viii) Flightcrew procedures, airplane configuration, and airspeeds must be as specified in the operator's aircraft operating manual. During each phase of the approach, the airspeed must not deviate from the target speed by more

than the tolerances specified in paragraph 7.4 of this chapter. Turbojet airplanes must be stabilized before descending below 1,000 feet above the touchdown zone.

(2) ***Nonprecision Approaches.*** Inspectors and examiners shall require pilots to demonstrate two nonprecision instrument approaches that are authorized in the operator's operations specifications. The second approach must be based on a different type of NAVAID than the first approach.

(i) Inspectors and examiners shall allow the pilot to use any aid normally available in the cockpit, such as the flight director and drift and ground speed readouts. Many operators train their pilots to perform non precision approaches using the autopilot. While this training should be encouraged, at least one non precision approach must be manually flown on the flight test.

(ii) When no precision approaches are conducted in a flight simulator, a crosswind component of 10 to 15 knots shall be used on at least one of the non precision approaches. The purpose of the crosswind component is to test a pilot's ability to track the approach course, not to evaluate crosswind landings. Crosswind landings, however, may be combined with a non precision approach.

(iii) In an airplane, the vision restriction device shall remain in use until the airplane arrives at MDA and a distance from the runway approximating the required visibility for the approach. In a flight simulator or flight training device, inspectors and examiners shall enter a ceiling of not more than 50 feet higher than the published MDA. A visibility value of not more than 1/4 mile greater than the published minimums value shall be used, depending on the characteristics of the particular flight simulator or training device.

(iv) Pilots must remain within 5 degrees of the approach course. The reason for this tolerance is terrain clearance. When tracking is accomplished by means of a bearing pointer only, the tolerance is + 5 degrees of the final approach course. When tracking a localizer signal, the tolerance is less than a full-scale deviation on the course deviation indicator. When tracking a VOR signal, the tolerance is a 1/2 scale deviation of the course deviation indicator. Also, at the visual descent point or its equivalent, the aircraft must be in a position that it can be aligned with the runway without excessive maneuvering. Turbojet airplanes must be stabilized before descending below the MDA or 500 feet, whichever is lower.

(3) ***Circling Approach Maneuver***. Operators are not required to train flight crewmembers in circling approach maneuvers, if the operator's manual prohibits such maneuvers with a ceiling below 1000 feet and a visibility of less than 3 miles. Inspectors and examiners shall waive this event if the operator does not train flight crewmembers for the maneuver.

(i) For the purpose of flight testing, the visual maneuvering portion of a circling maneuver begins at the circling MDA of a non precision approach and requires a change in heading from the final approach course to the runway heading of at least 90 degrees. The inspector or examiner, however, may use his authority to modify this event. For example, when traffic conditions preclude a circling approach, if tower approval is attained, the visual portion of the event can be entered from a modified VFR traffic pattern at a point downwind and abeam the touchdown point.

(ii) The angle of bank for a circling maneuver should not exceed 30 degrees. Altitude and airspeed must not exceed the tolerances specified in paragraph 7.4. The airplane must not descend below MDA until the runway environment is clearly visible to the pilot, and the airplane is in a position for a normal descent to the touchdown point. Turbojet airplanes must be stabilized in the landing configuration before descending below the MDA or 500 feet above touchdown zone elevation, whichever is lower.

(4) ***Maneuver To a Landing With 50% of Powerplants Inoperative.*** Inspectors and examiners shall require a pilot to demonstrate an approach and landing with 50% of powerplants inoperative.

(i) Inspectors and examiners should introduce this event in a realistic manner. Consideration should be given to the airplane weight, atmospheric conditions, and airplane position. The airplane position, when the engine failure is introduced (second engine in a three- or four-engine airplane) should provide enough room for the pilot to maneuver the aircraft. In the simulator, the weight should be adjusted to simulate realistic conditions but still allow the pilot enough time to exercise judgment. In a three-engine airplane, this event must be performed with the center and an outboard engine failed. In a four-engine airplane, both powerplant failures must be on the same side.

(ii) In two-engine airplanes, the engine-out ILS or MLA may be credited simultaneously with this event. In three- and four-engine aircraft, this event should be conducted in visual conditions. A visual pattern should be used rather than a vector to the final approach, so that the pilot's judgment with respect to maneuvering the airplane can be evaluated. When this event is conducted in a flight simulator, the electronic glideslope or VASI shall not be made available for the pilot's use. In the airplane, it may not be possible to have the VASI's turned off. In daylight conditions, however, inspectors and examiners should request that the VASI be turned off. In an airplane at night, an electronic glideslope or VASI must be available and used.

Note: *An approach with a simulated failure of the most critical powerplant must always be performed in the airplane segment of a two-segment flight test. That event is required in the airplane segment, even when a maneuver and landing with 50% of powerplants inoperative has already been previously accomplished in a flight simulator.*

(5) ***No-Flap or Partial-Flap Approach.*** Inspectors and examiners shall require a pilot to perform a no-flap approach in all airplanes except those airplanes which have alternate flap extension procedures and for which it has been determined that no-flap approaches are not required. If a no-flap approach is not required, a partial-flap approach will be accomplished. In this case, inspectors and examiners are only required to evaluate a pilot's demonstration of a partial-flap approach. However, inspectors and examiners may evaluate pilots conducting partial-flap or no-flap approaches anytime procedures for such approaches are published in the operator's aircraft operating manual.

(i) For either a partial or no-flap approach, the limitations specified for the use of VASI and electronic glideslope guidance in the 50% engine failure maneuver (subparagraph D.(2)) apply. The approach shall be flown from a visual pattern from at least a downwind position, so that the pilot may be evaluated on planning for the approach. The approach should be presented in a realistic manner. In a flight simulator, inspectors and examiners shall adjust the landing weight to require a pilot to exercise judgment in matters such as approach speed and runway limitations.

(ii) A touchdown from a no-flap or partial-flap approach is not required and shall not be attempted in an airplane. The approach must be flown to the point that the inspector or examiner can determine whether the landing would or would not occur in the touchdown zone. In a flight simulator, the landing must be completed to a full stop so that the pilot's ability to control the airplane and to use correct procedures may be evaluated.

Note: *The events required in subparagraphs D and E should be conducted in a flight simulator whenever practical. These events should not be repeated in the airplane segment of the flight test, unless an unusual situation occurs.*

(6) ***Acceptable Performance for Approach Events.*** The airspeed and altitude on downwind and base leg, or on an intercept to final approach must be controlled within the tolerances specified in paragraph 7.4. The airspeed on final approach must be adjusted for wind and gusts in accordance with the operator's aircraft flight manual. The airspeed must be controlled at the adjusted value. The approach angle must be controlled and be appropriate to the airplane and approach being flown. If a windshear or a ground proximity warning should occur, a pilot must respond in a prompt and positive manner. For turbojets, the approach must be stabilized, the airplane in the landing configuration, with a sink rate of less than 1,000 FPM, not later than the following heights:

(i) For all straight-in instrument approaches, the approach must be stabilized before descending below 1,000 feet above the airport or touchdown zone.

(ii) For visual approaches and landings, the approach shall be stabilized before descending below 500 feet above the airport elevation.

(iii) For the final segment of a circling approach maneuver, the approach must be stabilized 500 feet above the airport elevation or, at the MDA, whichever is lower.

Note: *Use of the stabilized concept is mandatory for all turbojet aircraft operations. It is recommended for all propeller-driven aircraft and rotorcraft when conducting operations in IFR weather conditions.*

9.3.5 Landing Events

(a) A total of three manually-controlled landings must be accomplished on all proficiency checks. When a two-segment, flight simulator and airplane flight test is conducted, a minimum of three manually-controlled landings must be performed in the airplane. If the flight test is conducted in an amphibious airplane, one landing must be on water. The required events are as follows:

(1) *Normal Landings*. A normal landing is defined as a manually-controlled landing in the normal landing configuration (as specified in the operator's aircraft operating manual), with normal power available, and without reference to an electronic glideslope. A normal landing can be accomplished from either a visual pattern or from a non precision approach.

(2) *Crosswind Landings.* A manually-controlled landing with a crosswind must be accomplished on all flight tests. The crosswind landing may be combined with any other landing event.

(i) When the flight test is conducted in an airplane, inspectors and examiners usually have little control over existing meteorological, airport, and traffic conditions. As such, an inspector or examiner is expected to make a reasonable attempt to evaluate a landing on a runway not favorably aligned with the prevailing wind. It will frequently be necessary, however, to evaluate this event with the crosswind component currently existing on the active runway.

(ii) Flight simulators are capable of realistically duplicating a crosswind for landing. Crosswind landings must be evaluated on all flight tests conducted in flight simulators. The crosswind component entered in the simulator computer shall be between 10 to 15 knots. Occasionally, however, the crosswind components should be in excess of 15 knots, but must not exceed the crosswind component allowed by the operator's aircraft operating manual (or the maximum demonstrated value given in the AFM). The purpose of testing at such higher crosswind components is to determine whether pilots are being trained throughout the range of the flight envelope. Crosswind landings should normally be performed from a VFR traffic pattern, but may be accomplished from a non precision approach.

(3) *Landing in Sequence from an ILS or MLA Approach.* On the landing from an ILS or MLA approach, the runway environment should become visible to the pilot as close as possible to the DH being used for the flight test. The pilot must complete the landing without excessive maneuvering and within the touchdown zone. The approach angle must not be erratic, excessively steep, or shallow in the visual segment.

(4) *Rejected Landing.* The rejected landing shall be initiated from a point approximately 50 feet above the runway. This event may be combined with an instrument missed approach.

(5) *Engine-Out Landing.* One landing with the most critical powerplant inoperative must be evaluated. When a two-segment flight test is conducted, this event must be performed in the airplane. When conducted in an airplane, the engine failure shall be simulated.

(6) *Landing with 50% of Powerplants Inoperative.* A landing with 50% of powerplants inoperative must be evaluated. In a three-engine airplane, the event must be performed with the center and one outboard engine inoperative. In a four-engine airplane both powerplant failures must be on the same side. When this event is conducted in an airplane, the engine failures shall be simulated.

(7) *No-Flap or Partial-Flap Landings.* No-flap or partial-flap landings are not required to complete the check. When the proficiency check is accomplished in an airplane i actual flight, a touchdown from a no-flap or partial-flap approach is not required and shall not be attempted. The approach must be flown to the point that the inspector or examiner can determine whether the landing would or would not occur in the touchdown zone. In a flight simulator, the landing should be completed to a full stop so that the pilot's abilities to control the aircraft and use correct procedures under abnormal circumstances may be evaluated. For example, the aircraft might have a pitch-up tendency with spoiler extension in the no-flap or partial-flap landing configuration.

(8) *Acceptable Performance for Landing Events.* Landings must be in the touchdown zone, at the correct speed for the airplane, without excessive float, and on runway center line. The rate of descent at touchdown must be controlled to an acceptable rate for the airplane involved. Side load on the landing gear must not be excessive, and positive directional control must be maintained through the rollout. Management of spoilers and thrust reversers must be in accordance with the operator's aircraft operating manual.

9.3.6 Missed Approach Events

(a) Missed approaches from two separate instrument approaches are required to complete the flight test. At least one missed approach must be flown through the entire missed approach procedure, unless traffic or ATC restrictions prevent completing the entire procedure. One missed approach is required from an ILS or MLA. When the flight test is conducted in a multiengine airplane that has a single-engine climb capability, one missed approach should be accomplished with the most critical powerplant inoperative. The engine-out and ILS or MLA missed approaches may be combined, however to complete the flight test, at least two missed approaches are required. When the flight test is a two-segment flight test, the engine-out missed approach should be accomplished in the simulator segment.

(1) A missed approach from an approach with 50% of powerplants inoperative is not required to complete the flight test for three- and four-engine airplanes. However, when procedures for 50% of powerplant-inoperative missed approaches are published in the operator's aircraft operating manual, inspectors and examiners may evaluate the event to determine if pilots are being trained to proficiency in the event. When this event is conducted in a three-engine airplane, the center and one outboard engine must be inoperative. When this event is conducted in a four-engine airplane, two engines on the same side must be inoperative. When the missed approach event is conducted in an airplane, the engine failures shall be simulated.

(2) When a flight test is conducted in a flight simulator or flight training device, inspectors and examiners should make use of the "trouble buttons," as well as weather, to induce the missed approach decision. For example, many flight simulators have provisions to off-set the localizer so that the airplane is not in a position to continue the approach below DH.

(3) Pilots must promptly execute the missed approach procedure if the runway environment is not acquired at DH on an ILS or MLA approach. If the runway environment is not in sight on a non precision approach, or if the aircraft is not in a position to land at the missed approach point, the pilot must initiate a missed approach. Should conditions prevent continuation of any type of approach at any point, the pilot must initiate a missed approach. For example, a missed approach above DH might be required when an instrument failure flag appears. A missed approach is required if the aircraft is below DH or MDA and cannot be properly aligned with the runway or if the pilot loses sight of the runway environment. A pilot must adhere to the published missed approach or the instructions given by ATC and observe the procedures and limitations in the operator's aircraft operating manual. A pilot must properly use the available aids and other crewmembers when making the transition back to the instrument navigation environment.

9.3.7 Normal and Abnormal Procedures

(a) Inspectors and examiners shall require a pilot to demonstrate the proper use of as many of the airplanes systems and devices as necessary to determine if the pilot has a practical knowledge of the use of these systems. Evaluation of normal and abnormal procedures can usually be accomplished in conjunction with other events and does not normally require a specific event to test the pilot's use of the airplane's systems and devices. A pilot's performance must be evaluated on the maintenance of aircraft control, the ability to recognize and analyze abnormal indications, and the ability to apply corrective procedures in a timely manner. Systems to be evaluated include, but are not limited to, the following:

(1) Anti-icing and deicing systems

(2) Autopilot systems

(3) Automatic or other approach system aids

(4) Stall warning devices, stall avoidance devices, and stability augmentation devices

(5) Airborne radar devices

(6) Any other available systems, devices, or aids (such as flight management systems)

9.3.8 Emergency Procedure Events

(a) A pilot must be able to competently operate all installed emergency equipment and to correctly apply the procedures specified in the operator's aircraft operating manual.

(1) *Powerplant Failures.* Inspectors and examiners may introduce malfunctions requiring an engine shutdown at any time during the flight test. This provision is not intended as authority to require an unrealistic number of failures, but to permit such failures at times when they are most appropriate. Powerplant failures should be limited to those necessary for determining a pilot's proficiency. A pilot must promptly identify the inoperative engine and initiate correct action while maneuvering the airplane safely. If the airplane is not capable of maintaining altitude with an engine inoperative, the pilot is expected to maintain the best engine-out climb speed while descending. Smooth application of flight controls and proper trim are required.

(2) *Other Emergency Procedures.* Inspectors and examiners should sample as many of the following events as necessary for determining whether a pilot is proficient in identifying and responding to emergency situations:

(i) Fire in flight

(ii) Smoke control

(iii) Rapid decompression

(iv) Emergency descent (with and without structural damage)

(v) Hydraulic and electrical system failure or malfunctions (if safe and appropriate)

(vi) Landing gear and flap systems failure or malfunctions

(vii) Navigation or communications equipment failure

(viii) Any other emergency procedures outlined in the operator's aircraft operating manual or training program

9.4 STANDARDS OF ACCEPTABLE PERFORMANCE

3.1

An air transport pilot must possess the highest degree of piloting skills, and must be the master of the airplane, the crew, and the situation throughout the aircraft's operational envelope. Inspectors and examiners shall sample a pilot's ability to safely and practically operate the aircraft throughout the range of the approved operational envelope. The determination of whether a pilot's performance is acceptable or not is derived from the experience and judgment of the inspector or examiner. It is imperative that inspectors and examiners be fair and consistent when making these determinations. The airspeed, altitude, and heading standards which are listed below will be used in making their determinations. These standards must be applied with consideration for the prevailing conditions. Weather, aircraft responsiveness, traffic, and other factors beyond a pilot's control may cause the pilot to briefly deviate from a standard. For example, the airspeed tolerances for a final approach should be read as the tolerance allowed solely for control manipulation errors. In smooth air the pilot should be able to remain within these tolerances once stabilized on the approach. If atmospheric conditions are causing airspeed fluctuations, it may be physically impossible for the speed to be controlled within the tolerances specified. The pilot is expected to adhere to the procedures for adjusting the target speed as specified in the operator's aircraft operating

manual. In such situations, a pilot who makes determined efforts, and is generally successful in remaining within prescribed standards, and who does not deviate to the extent safety is compromised, should be considered to have met the standards. The pilot's ability to remain within the prescribed standard limits, however, is not the only criteria for acceptable performance. The pilot's performance must be such that the inspector or examiner is never seriously in doubt of the successful outcome of each event of the flight test.

9.4.1 Heading, altitude, and airspeed parameters other than during approaches

(a) While maneuvering in all flight regimes other than during approach and landing, the following standards will be observed:

(1) *Heading:* Within 10 degrees of assigned or intended heading.

(2) *Altitude:* Within 100' of assigned or intended altitude.

(3) *Airspeed:* Within 10 knots of assigned or intended airspeed.

9.4.2 Approach Performance Criteria

(To Be Developed)

CHAPTER 10: ADDITION OF A NEW AIRCRAFT TYPE TO A CERTIFICATED OPERATOR'S FLEET

10.1 GENERAL

The addition of a new aircraft type to a certificated operator's fleet requires many of the same inspections, reviews, demonstrations, authorizations, and approvals by the LCAA 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 8.2 through 8.5 below are followed.

10.2 DOCUMENT REVIEW

(a) 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:

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

(2) 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.

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

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

(5) 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 LCAA signature.

(6) Passenger briefing cards in English and other appropriate languages.

(7) A revised Flight Attendant Manual or other suitable reference for flight attendants concerning the configuration of the new aircraft type, location and operation of installed cabin equipment, and duties and responsibilities during normal and abnormal operations.

(8) Weight and balance information and procedures

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

(10) Written training programs for cockpit and cabin crewmembers and flight dispatchers/flight operations officers.

10.3 DEMONSTRATIONS

(a) The following demonstrations must be successfully completed by the operator for the new aircraft type:

(1) Emergency evacuation and ditching drills should be conducted to demonstrate the ability of the cabin crew to safely evacuate passengers and utilize aircraft emergency equipment.

(2) 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.

10.4 INSPECTIONS

(a) In addition to the manual inspections and approvals outlined in 8.2 above, the LCAA must conduct the following inspections to ensure that the operator is fully prepared to operate the new aircraft type:

(1) 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.

(2) The Dispatch/Operational Control center should be inspected to ensure adequacy of flight planning, briefing, and record-keeping associated with the new aircraft type.

3.2

10.5 OTHERS

All crewmembers must receive the full range of technical training before operations commence. All crewmembers should receive training on duties during emergencies and on operation of emergency equipment installed on the aircraft. Flight attendants should receive hands-on training in door operation and deployment of escape slides, if applicable. Training records for all crew members should be verified. The maintenance program for the new aircraft type must be submitted to and approved by the Airworthiness division.

10.6 REVISED OPERATIONS SPECIFICATIONS

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 formal approval for the operator to commence revenue operations with the new aircraft type.

CHAPTER 11: APPROVAL OF CREW MEMBER AND DISPATCHER (FLIGHT OPERATIONS OFFICER) TRAINING PROGRAMS

11.1 BACKGROUND AND OBJECTIVES

(a) This chapter contains direction and guidance to be used by LCAA personnel responsible for the evaluation, approval, and surveillance of commercial operator crewmember training programs.

(b) An applicant for an Air Operator Certificate (AOC) is required to develop a training program for crewmembers and dispatchers. An existing operator may need to revise its training program when purchasing new equipment, operating in a new environment, obtaining new authorizations, or when new LCAA requirements are specified. Each operator must obtain LCAA approval of curriculums used for training crewmembers, instructors, check airmen, and aircraft dispatchers. The operator is responsible for ensuring that its training program is complete, current, and in compliance with LCAA guidance. (Unless otherwise specified in this chapter, the term "operator" applies equally to an applicant for a certificate and an existing certificate holder).

(c) A "modular" approach to training is emphasized in this chapter, and categories of training are defined which are based upon the circumstances for which training is required. Operations inspectors are responsible for ensuring that regulatory requirements are met and that the operator‘s crewmembers and dispatchers can competently perform their assigned duties before they are authorized to enter revenue service. Operators should be encouraged to modify existing training programs to conform to this modular approach and to submit new programs in conformance with this format. However, it is the policy of the LCAA to encourage operators to be innovative and creative when developing training curriculums, methods and techniques. Other formats may be acceptable as long as all training requirements are met.

11.2 DEFINITIONS

(a) The following terms are used throughout this chapter and are defined as follows:

(1) *Training Program:* A system of instruction which includes curriculums, facilities instructors, check airmen and examiners, courseware, instructional delivery methods, and testing and checking procedures. This system must satisfy the training program requirements of the LCAA and ensure that each crewmember and dispatcher remains adequately trained for each aircraft, duty position, and kind of operation in which the person serves.

(2) *Modular Training:* The concept of program development in which logical subdivisions of training programs are developed, reviewed, approved, and modified as individual units. Curriculum segments and modules may be used in multiple curriculums. The modular approach allows great flexibility in program development and reduces the administrative workload on both operators and instructors in the development and approval of these programs.

(3) *Categories of Training:* The classification of instructional programs by the requirement the training fulfills. Categories of training consist of one or more curriculums. The categories of training are initial new-hire, initial equipment, transition, upgrade, recurrent (periodic), and requalification.

(4) *Curriculum:* A complete training agenda specific to an aircraft type, a crewmember or dispatcher duty position, and a category of training. An example is an "initial new-

hire, Boeing 737 first officer curriculum". Each curriculum consists of several curriculum segments.

(5) *Curriculum Segment:* The largest subdivision of a curriculum containing broadly related training subjects and activities based on regulatory requirements. Curriculum segments are logical subdivisions of a curriculum which can be separately evaluated and individually approved. Examples are a "ground training" segment and a "flight training" segment. Each curriculum segment consists of one or more training modules.

(6) *Training Module:* A subpart of a curriculum segment which constitutes a logical, self-contained unit. A module contains elements or events which relate to a specific subject. For example, a ground training curriculum segment could logically be divided into modules pertaining to aircraft systems (such as hydraulic, pneumatic, and electrical). As another example, a flight training curriculum segment is normally divided into flight periods, each of which is a separate module. A training module includes the outline, appropriate courseware, and the instructional delivery methods. It is usually, but not necessarily, completed in a single training session.

(7) *Element:* An integral part of a training, checking, or qualification module that is subject oriented and not task-oriented. For example, an "electrical power" ground training module may include such elements as a DC power system, an AC power system, and circuit protection.

(8) *Event:* An integral part of a training, checking, or qualification module which is task-oriented and requires the use of a specific procedure or procedures. A training event provides a student an opportunity for instruction, demonstration, and/or practice using specific procedures. A checking or qualification event provides an evaluator the opportunity to evaluate a student‘s ability to correctly accomplish a specific task without instruction or supervision.

(9) *Checking and Qualification Module:* An integral part of a qualification curriculum segment which contains checking and qualification requirements. For example, a qualification curriculum segment may contain a proficiency check module, a LOFT module and an operating experience (qualification) module.

(10) *Courseware:* Instructional material developed for each curriculum. This is information in lesson plans, instructor guides, computer software programs, audiovisual programs workbooks, aircraft operating manuals, and handouts. Courseware must accurately reflect curriculum requirements, be effectively organized, and properly integrate with instructional delivery methods.

(11) *Instructional Delivery Methods:* Methodology for conveying information to a student. For example, this may include lectures, demonstrations, audiovisual presentations, programmed and directed self study workshops, and drills. Training devices, simulators, aircraft, and computer work stations are also considered instructional delivery methods.

(12) *Testing and Checking:* Methods for evaluating students as they demonstrate a required level of knowledge in a subject, and when appropriate apply the knowledge and skills learned in instructional situations to practical situations.

(13) *Training Hours:* The total amount of time necessary to complete the training required by a curriculum segment. This must provide an opportunity for instruction, demonstration, practice, and testing, as appropriate. This time must be specified in hours on the curriculum segment outline. A training hour includes time for normal breaks, usually 10 minutes each hour. Lunch breaks are not included.

(14) *Programmed Hours:* The hours specified for certain categories of training (initial new-hire, initial equipment, and recurrent). Programmed hours are specified in curriculum segment outlines in terms of training hours.

(15) *Duty Position:* The functional or operating position of a crewmember or aircraft dispatcher. Common duty positions are pilot-in-command (PIC), second-in-command (SIC), flight engineer (FE), flight attendant (FA), and aircraft dispatcher (AD).

(16) *Training/Checking Month (Base Month):* The calendar month during which a crewmember or aircraft dispatcher is due to receive required recurrent training, a required flight check, a required competency check, or required operating familiarization. Calendar month means the first day through the last day of a particular month.

(17) *Eligibility Period*: Three calendar months (the calendar month before the "training/checking month," the "training/checking month," and the calendar month after the "training/checking" month). During this period a crewmember or aircraft dispatcher must receive recurrent training, a flight check, or a competency check to remain in a qualified status. Training or checking completed during the eligibility period is considered to be completed during the "training/checking month" and is due in the "training/checking month" in the following year.

(18) *Initial Approval:* A LCAA letter which conditionally authorizes an operator to begin instruction to qualify personnel under a specific curriculum or curriculum segment pending an evaluation of training effectiveness. An initial approval letter must specify an expiration date for the conditional authorization.

(19) *Final Approval:* A LCAA letter, without an expiration date, which authorizes an operator to continue training in accordance with a specific curriculum or curriculum segment.

11.3 TRAINING PROGRAMS: A Schematic Depiction

(a) Some elements of a training program are depicted in figure 9-1 part 3 at the end of this chapter to show the relationship between the total training program and the categories of training, curriculums, curriculum segments, and training modules. The illustration in figure 9-1 part 3 is representative only and is intended to present a framework for the modular development of a training program. By using this "modular approach," the inspector has various strategies available for the evaluation of training effectiveness and for the planning of long-term surveillance.

(b) The illustration in figure 2.9.1 consists of five parts as follows:

(1) Part A depicts representative components which, when combined, constitute an operator‘s overall training program. These components differ in that some must be specifically approved by the LCAA (for example, courseware and check airmen), while others are accepted as essential supporting elements (for example, facilities and equipment).

(2) Part B illustrates the six categories of training that are recognized by the LCAA.

(3) Part C is an example of a curriculum which is a complete agenda of training specific to an aircraft type and crewmember or dispatcher duty position. This example depicts a PIC B-747-400 transition training curriculum.

(4) Part D is an example of a specific curriculum segment and shows that it consist of several training modules. This example is the flight training curriculum segment of the PIC B-747-400 transition training curriculum.

(5) Part E is an example of a specific training module. In this case the module is simulator lesson number 4.

11.4 CATEGORIES OF TRAINING

(a) There are six basic categories of training applicable to commercial operators. The primary factors which determine the appropriate category of training are the student's previous experience with the operator and previous duty position. Each category of training consists of one or more curriculums, each one of which is specific to an aircraft type and a duty position (for example: B-747 FE, B-747 SIC, and B-747 PIC). Training should be identified with and organized according to specific categories of training. When discussing training requirements, Liberia CAA inspectors should be specific regarding the category of training being discussed and use the nomenclature described in this manual. Inspectors should encourage operators to use this nomenclature when developing new training curriculums or revising existing training curriculums. Use of this common nomenclature improves standardization and mutual understanding. The six categories of training are briefly discussed in the following subparagraphs:

(1) *Initial New-Hire Training.* This training category is for personnel who have not had previous experience with the operator (newly-hired personnel). It also applies, however, to personnel employed by the operator who have not previously held a crewmember or dispatcher duty position with the operator. Initial new-hire training includes basic indoctrination training and training for a specific duty position and aircraft type. Except for a basic indoctrination curriculum segment, the regulatory requirements for "initial new-hire" and "initial equipment" training are the same. Since initial new-hire training is usually the employee's first exposure to specific company methods, systems, and procedures, it must be the most comprehensive of the six categories of training. For this reason, initial new-hire training is a distinct separate category of training and should not be confused with initial equipment training. as defined by this manual, initial equipment training is a separate category of training.

(2) *Initial Equipment Training.* This category of training is for personnel who have been previously trained and qualified for a duty position by the operator (not new-hires) and who are:

(i) Being reassigned to any duty position on an airplane of a different group. As defined by this manual, Group I refers to reciprocating and turbo propeller powered aircraft and Group II refers to turbojet powered.

(ii) Being reassigned to a different duty position on a different airplane type when the flight crewmember has not been previously trained and qualified by the operator for that duty position and airplane type.

(3) *Transition Training.* This category of training is for an employee who has been previously trained and qualified for a specific duty position by the operator and who is being assigned to the same duty position on a different aircraft type. The different type aircraft must be in the same group. If it is not in the same group, initial equipment training is the applicable category of training.

(4) *Upgrade Training.* This category of training is for an employee who has been previously trained and qualified as either SIC or FE by the operator and is being assigned as either PIC or SIC, respectively, to the same aircraft type for which the employee was previously trained and qualified.

(5) *Periodic or Recurrent Training.* This category of training is for an employee who has been trained and qualified by the operator, who will continue to serve in the same duty position and aircraft type, and who must receive recurring training and/or checking within an appropriate eligibility period to maintain currency.

(6) *Requalification Training.* This category of training is for an employee who has been trained and qualified by the operator, but has become unqualified to serve in a particular duty position and/or aircraft due to not having received recurrent training

and/or a required flight or competency check within the appropriate eligibility period. Requalification training is also applicable in the following situations:

(i) PIC's who are being reassigned as SIC's on the same aircraft type when seat-dependent training is required

(ii) PIC's and SIC's who are being reassigned as FE's on the same aircraft type, provided they were previously qualified as FE's on that aircraft type

(7) *Summary of Categories of Training.* The categories of training are summarized in general terms as follows:

(i) All personnel not previously employed by the operator must complete initial new-hire training.

(ii) All personnel must complete recurrent training for the duty position and aircraft type for which they are currently assigned within the appropriate eligibility period.

(iii) All personnel who have become unqualified for a duty position on an aircraft type with the operator must complete requalification training to reestablish qualification for that duty position and aircraft type.

(iv) All personnel who are being assigned by the operator to a different duty position and/or aircraft type must complete either initial equipment, transition, upgrade, or requalification training, depending on the aircraft type and duty position for which they were previously qualified.

11.5 DESCRIPTION OF CURRICULUM SEGMENTS

(a) *Basic Indoctrination.* The objective of basic indoctrination is to introduce the new-hire flight crewmember to the operator and its manner of conducting operations in air transformation. It acquaints the student with the operator's general policies and practices that relate to his or her specific position, but not to a specific aircraft type or configuration. General subject areas during basic indoctrination training may be divided into "operator specific" and "job function specific" training. Examples of *Operator Specific* training modules include duties and responsibilities of flight crewmembers (or UUUU ,etc.) , appropriate provisions of the 1DDD and air navigation orders, contents of the operators operating specifications, company history, scope of operations, administrative procedures, rules of conduct, benefits, and contracts. Examples of *Job Specific* general knowledge training modules for flight crewmembers and dispatchers would include basic aircraft systems overview, weight and balance, aircraft performance, meteorology, navigation, airspace and ATC procedures. Job Specific training modules for Flight Attendants would include basic aircraft systems and functions, duties of flight attendants, overview of emergency equipment, etc.

(b) *Aircraft Ground Training.* The primary objective of aircraft ground training is to provide crewmembers and dispatchers with the necessary knowledge for understanding the functions of aircraft systems specific to an aircraft type or configuration, the use of individual system components, the integrations of aircraft systems, and operational procedures. Aircraft ground training may be conducted using many methods including classroom instruction, computer based instruction, flight training devices, flight simulators and static aircraft.

(c) *Aircraft Flight Training.* Flight training means the conduct of training events in an aircraft, flight simulator, or flight training device. The primary objective of aircraft flight training is to provide flight crewmembers with the skill and knowledge necessary to perform to a desired standard. This skill and knowledge is acquired through demonstration, instruction,

and practice of maneuvers and procedures pertinent to a particular aircraft and crewmember duty position.

(d) *Emergency Training*. Emergency training means the conduct of training events which impart knowledge and skill in reacting properly to emergency situations.

(e) *Differences Training.* Differences training refers to training which is provided to acquaint crewmembers and dispatchers with differences in configuration, equipment, systems, and procedures between different versions aircraft of the same basic type of aircraft. For example, flight crewmembers and dispatchers may require training in different avionics installations, and cabin crew members may require training in different cabin configurations and installed emergency equipment.

11.6 TRAINING APPROVAL PROCESS

11.6.1 Requests for Initial Approval

(a) The approval process begins when the operator submits its training proposal in writing, for initial approval, to the LCAA. The operator is required to submit to the LCAA an outline of each curriculum or curriculum segment and any additional relevant supporting information requested by the LCAA. These outlines, any additional supporting information, and a letter must be submitted to the LCAA. This letter should request LCAA approval of the training curriculum. Two copies of each curriculum or curriculum segment outline should be forwarded along with the letter of request to the LCAA.

(b) Each operator must submit its own specific curriculum segment outlines appropriate for its type of aircraft and kinds of operations. These outlines may differ from one operator to another and from one category of training to another in terms of format, detail, and presentation. Each curriculum should be easy to revise and should contain a method for controlling revisions, such as a revision numbering system. Curriculums for different duty positions may be combined in one document, provided the positions are specifically identified and any differences in instruction are specified for each duty position. Each curriculum and curriculum segment outline must include the following information:

(1) Operator‘s name

(2) Type of aircraft

(3) Duty position

(4) Title of curriculum and/or curriculum segment including the category of training

(5) Consecutive page numbers

(6) Page revision control dates and revision numbers

(c) Each curriculum and curriculum segment must also include the following items, as appropriate:

(1) Prerequisites prescribed by the Air Navigation 1DDD or required by the operator for enrollment in the curriculum

(2) Statements of objectives of the entire curriculum and a statement of the objective of each curriculum segment

(3) A list of each training device, mockup, system trainer, procedures trainer, simulator, and other training aids which require LCAA approval (The curriculum may contain references to other documents in which the approved devices, simulators, and aids, are listed.)

(4) Descriptions or pictorial displays of normal, abnormal, and emergency maneuvers and procedures which are intended for use in the curriculum, when appropriate (These descriptions or pictorial displays, when grouped together, are commonly referred to as the flight maneuvers and procedures document. The operator may choose to present detailed descriptions and pictorial displays of flight maneuvers and procedures in other manuals. For example, the flight maneuvers and procedures document may be described in an aircraft operating manual. However, as a required part of the training curriculum, it must either be submitted as part of the curriculum or be appropriately referenced in the curriculum.)

(5) An outline of each training module within each curriculum segment (Each module should contain sufficient detail to ensure that the main features of the principal elements or events will be addressed during instruction.)

(6) Training hours which will be applied to each curriculum segment and to the total curriculum

(7) The checking and qualification modules of the qualification curriculum segment used to determine successful course completion.

11.6.2 Initial Review Of Requests For Approval

The assigned inspector must review the submitted training curriculum and supporting information for completeness, general content, and overall quality. A detailed examination of the documents is not required at this time. If after initial review, the submission appears to be complete and of acceptable quality, or if the deficiencies are immediately brought to the operator‘s attention and can be quickly resolved, the inspector may begin the in-depth review. If the submission is determined to be incomplete or obviously unacceptable, the approval process is terminated and the inspector must immediately return the documents with an explanation of the deficiencies. The documents must be immediately returned, so the operator will not erroneously assume the LCAA is continuing the process to the next phase. The approval process can be resumed when the revised training curriculum or curriculum segment is resubmitted.

11.6.3 Training curriculums submitted with air operator certificate applications

An applicant for a certificate in the early stages of certification, may be unable to provide all information required for its training program. For example, the applicant may not yet know what training facilities or devices it intends to use. The lack of such information in the formal application does not necessarily mean that the training curriculum attachment must be returned. There should be an understanding between the applicant and the inspector that such portions are missing. The inspector may initiate the in-depth review without this type of information. Initial approval, however, of a curriculum segment must be withheld until all portions pertinent to the curriculum segment have been examined. For example, it may be appropriate to initially approve a ground training curriculum segment even though the simulator has not yet been evaluated and approved for flight training.

11.6.4 In-Depth Review of Submitted Curriculums

(a) This phase is initiated when the LCAA begins a detailed analysis and evaluation of a training curriculum or curriculum segment. The purpose of this phase is to determine the acceptability of training curriculums for initial approval. This phase ends either with the initial approval or with the rejection of all or part of the training curriculum.

(b) Before granting initial approval for a specific curriculum or curriculum segment, the Inspector must ensure that the following evaluations are accomplished.

(1) A side-by-side examination of the curriculum outline with the appropriate regulations and with the direction provided in this manual must be performed. This examination is to ensure that training will be given in at least the required subjects and in-flight training maneuvers. It should also ensure that appropriate training will be given on safe operating practices.

(2) An examination of the courseware developed or being developed by the operator must be performed. This review should include a sampling of available courseware such as lesson plans, audiovisual programs, flight maneuvers and procedures documents, and student handouts. The courseware must be consistent with each curriculum and curriculum segment outline. Form this review, the inspector should be able to determine whether the operator is capable of developing and producing effective training courseware.

(3) An inspection of training facilities, training devices, and instructional aids (which will be used to support the training) must be performed if the Inspector is not familiar with the operator‘s training program capabilities.

(4) The training hours specified in each curriculum segment outline must be evaluated. An inspector should not attempt to measure the qualify or sufficiency of training by the number of training hours alone. This can only be determined by direct observation of training and testing (or checking) in progress, or by examination of surveillance and investigation reports. The specified training hours must be realistic, however, in terms of the amount of time it will take to accomplish the training outlined in the curriculum segment so as to achieve the stated training objectives. During the examination of courseware, an inspector should note the times allotted by the operator for each training module. These times should be realistic in terms of the complexity of the individual training modules. The number of training hours for any particular curriculum segment depends upon many factors. Some of the primary factors are as follows:

(i) The aircraft family in which the specific aircraft belongs

(ii) Complexity of the specific aircraft

(iii) Complexity of the type of operation

(iv) Amount of detail that needs to be covered

(v) The experience and knowledge level of the students

(vi) Efficiency and sophistication of the operator‘s entire training program (including items such as instructor proficiency, training aids, facilities, course ware, and the operator‘s experience with the aircraft)

(c) If after completing these evaluations, the inspector determines that the curriculum or curriculum segment is satisfactory and adequately supported, and that the training hours are realistic, initial approval should be granted. Sometimes a portion of the submittal may appear to be satisfactory. However, if that portion is dependent upon another undeveloped portion or another unsatisfactory portion, initial approval must be withheld. For example, a PIC B-737-400 initial equipment, flight training curriculum segment is satisfactory but related training modules within the initial equipment ground training curriculum segment are unsatisfactory. In such a case, it may be inappropriate to grant initial approval to the initial equipment slight training curriculum segment until the ground training curriculum segment is determined to be satisfactory.

11.6.5 Expiration dates for initial approvals

When the Inspector determines that a training curriculum or curriculum segment should be initially approved, the Inspector must also determine an appropriate expiration date for the initial approval. The expiration date provides an incentive to the operator for refining all aspects of the program to assure that this regulatory requirement is met. The expiration date also provides the LCAA with a time frame with which to plan evaluation activities for determining the effectiveness of the training. The expiration date assigned to an initially approved training curriculum must not exceed 24 months from the date of initial approval. The expiration date of initial approval may be reduced by the LCAA if it is apparent that a 24-month time frame will unnecessarily delay final approval. The inspector should be aware that shortening the initial approval expiration date will commit him to completing the final approval phase within the shorter time period. The inspector may grant final approval any time before the expiration date. Except when unforeseen circumstances preclude an adequate evaluation of training effectiveness, an extension to the initial approval expiration date should not be permitted. A new expiration date, however, may be established for a curriculum segment when there are significant revisions to an initially-approved curriculum segment.

11.6.6 Method Of Granting Initial Approval

(a) Initial approval is granted by letter. A Sample letter granting initial approval is included at the end of this chapter as Figure 9-2 part 3. The initial approval letter must include at least the following information:

(1) Specific identification of the curriculums and/or curriculum segments initially approved, including page numbers and revision control dates

(2) A statement that initial approval is granted, including the effective and expiration dates

(3) Any specific conditions affecting the initial approval, if applicable

(4) A request for advance notice of training schedules so that training may be evaluated.

(b) An initial approval letter serves as the primary record of curriculum or curriculum segment pages that are currently approved and effective may agree to use the method to account for revisions to training documents. If this method is used, the stamp must clearly indicate initial approval and the expiration date. Other acceptable methods include a list of effective curriculum or curriculum segment pages, or pages with a preprinted signature and date blocks.

(c) The original pages of the curriculum or curriculum segment shall be returned to the operator with the transmittal letter. These documents should be retained by the operator as an official record. A copy of the training curriculum or curriculum segment, with a copy of the transmittal letter granting initial approval attached, shall be maintained on file at the LCAA, along with all additional, relevant supporting information.

11.6.7 Method Of Denying Initial Approval

If the Inspector determines that initial approval of a proposed training curriculum or curriculum segment must be denied, the operator shall be notified in writing of the reasons for denial. This letter must contain an identification of the deficient areas of the training curriculum and a statement that initial approval is denied. It is not necessary that each minor deficiency which resulted in the denial be identified; however the major deficiencies should be outlined in the letter. It is the operator‘s responsibility to redevelop or correct the deficient area before resubmission to the LCAA. A copy of the denial letter and a copy of the proposed training curriculum or curriculum segment shall be kept on file in the YYYY. Figure 9-3 part 3 is a sample letter of a denial of initial approval.

11.6.8 Evaluating Initially-Approved Training Curriculums

The final portion of the approval process begins when the operator starts training under the initially-approved curriculum. This phase should provide the operator with adequate time to test the program and the flexibility to adjust the program during LCAA evaluation. The inspector must require an operator to provide ongoing schedules of all training and checking to be accomplished under an initially-approved training curriculum. Whenever possible, the first session of training conducted under initial approval should be monitored by a qualified operations inspector. LCAA inspector does not need to observe every training session. A sufficient sampling of the training sessions, however, should be observed as a basis for a realistic evaluation. Inspectors qualified in the type aircraft, and other individuals knowledgeable of the curriculum subject matter, should assist in evaluating the training. During training under initial approval, the operator is expected to evaluate and appropriately adjust training methods as needed. Often adjustments can be made by changing courseware and instructional delivery without (or with only minor) revisions to the initially-approved curriculum. Conversely, it may be necessary for the operator to substantially change the curriculum which may require another initial approval action by the LCAA before the changes can be put into effect. Sometimes proposed revisions may be transmitted to the LCAA just before the initial approval expiration date. If the change is significant, the LCAA may need to establish a different expiration date for the curriculum segment, or for the revised portions, to allow adequate time for a proper evaluation.

11.6.9 Elements Available For Evaluating Training

(a) The Inspector must develop a plan for systematically evaluating training given under the initially-approved training curriculum. This plan should remain in effect throughout the initial approval period. There are five elements which can be evaluated when assessing the overall effectiveness of training programs. These five elements are: curriculum segment outlines, courseware, instructional delivery methods and training environment, testing and checking, and surveillance and investigation of operator activities. These elements are interrelated, however, each can be separately evaluated. See Figure 9-4 part 3 at the end of this chapter for a summary of these five elements.

(1) Before evaluating a training program, an inspector must become familiar with the contents of the curriculums or curriculum segments to be evaluated. This preparation is essential if an inspector is to determine whether an operator has developed an effective course of instruction from its initially-approved training curriculum.

(2) Direct examination of courseware includes reviewing materials such as lesson plans, workbooks, or Flight Instructor(s) guides. The inspector must determine whether the courseware is consistent with the curriculum or curriculum segment and that it has been organized to facilitate effective instructional delivery. Courseware is usually the training program element which is most adaptable to revision or refinement. Inspectors must review at least sampling of the courseware.

(3) Direct observation of instructional delivery includes surveillance of training methods, such as instructor lectures, computer-based instruction presentations, and in-flight instruction. Effective learning can only occur when an instructor is organized, prepared, and properly uses the courseware and various training aids. The inspector must determine that the instructional delivery is consistent with the courseware. For example, the inspector should not whether the instructor teaches the topics specified in the lesson plan. Training aids and devices should function as intended during the instructional delivery. In addition, during training, the inspector should be sensitive to the type of questions being asked by students and should identify the reasons for any excessive repetition. These conditions may indicate ineffective instructional

delivery or courseware. The inspector must also determine if the instructional environment is conducive to learning. Distractions which adversely affect instructional delivery, such as excessive temperatures, extraneous noises, poor lighting, cramped classrooms or work spaces, are deficiencies because they interfere with learning.

(4) Direct observation of testing and checking is an effective method for determining whether learning has occurred. Examining the results of tests, such as oral or written tests or flight checks, provides a quantifiable method for measuring training effectiveness. The Inspector must examine and determine the causal factors of significant failure trends.

(5) Direct observation of training and checking in progress is an effective method of evaluating training. Sometimes the opportunity for direct observation, however, will be limited. In such cases, the Inspector will have to rely more on his evaluation of other sources of information such as reports of surveillance and investigations. Results of inspection reports, incident or accident reports, enforcement actions, and other relevant information about the operator‘s performance should be reviewed by the Inspector for indications of training effectiveness. The Inspector must establish methods to evaluate these sources of information for trends which may develop while training is being conducted under initial approval. For example, repeated reports of deficiencies such as excessive taxi speed, navigation deviations, incomplete briefings, or incorrect use of the checklists, may be traceable to a lack of specific training or ineffective training. Such information may provide indications that revisions or refinements are needed for a curriculum segment and/or training modules.

11.6.10 Method for Granting Final Approval

(a) This phase involves the granting of final approval of an operator‘s training curriculum. Based on the results of the evaluation, the LCAA must determine whether to grant or deny final approval of a training curriculum. This determination must be made before the expiration date of the initial approval. If the LCAA decides that final approval should be granted, the following procedures apply:

(1) The original and a copy of each page of the training curriculum and/or curriculum segment shall be stamped for approval, dated, and signed by the Inspector.

(2) The original stamped curriculum or curriculum segment must be transmitted to the operator with an approval letter signed by the LCAA. This letter must specifically identify the curriculum or curriculum segment; contain a statement that final approval is granted; and provide the effective date of approval. This letter must also state that final approval shall remain in effect until otherwise notified by the LCAA that a revision is necessary provided the operator continues to train in accordance with the approved curriculum. Figure 9-5 part 3 at the end of this chapter is an example of a letter of final approval.

11.6.11 Revisions to Training Curriculums

(a) To incorporate significant revisions into a training curriculum with final approval usually requires the full training approval process Revisions to initially-approved training curriculums will normally be processed as described in paragraphs in the paragraphs 9.6.1 to 9.6.10. . Final approval, however, may be directly granted to a proposed revision, if the revision involves any of the following situations:

(1) Correction to administrative errors such as typographical or printing errors

(2) A reorganization of training, or any changes in the sequence of training that does not affect the quality or quantity of training

(3) An improvement to the quality, or an increase in the quantity, of training

(b) Other proposed revisions, including any proposal to reduce the approved number of training hours, are subject to the training program approval process. Although each step in the process must be completed, the process may be abbreviated in proportion to the complexity and extent of the proposal. There are many factors that could require revisions to training curriculums. Such factors include the following:

(1) The effects and interrelationships of changes in the kind of operations

(2) The size and complexity of an operation

(3) The type of aircraft being used

(4) Any special authorizations through operations specifications

(5) A revised MEL

(6) Any exemptions or deviations

Figure 9-1 part 3

SCHEMATIC DEPICTION OF TRAINING PROGRAMS

A. TRAINING PROGRAM

FACILITIES	COURSEWARE	INSTRUCTORS	INSTRUCTIONAL DELIVERY METHODS
EQUIPMENT	CATEGORIES OF TRAINING	CHECK AIRMEN	QUALITY CONTROL

B. CATEGORIES OF TRAINING

Initial New-hire Training	Initial Equipment Training	Transition Training	Upgrade Training	Periodic Training	Requalification Training
❍ PIC ❍ SIC ❍ FE ❍ FA ❍ FO	❍ PIC ❍ SIC ❍ FE ❍ FA ❍ FO	❍ PIC ❍ SIC ❍ FE ❍ FA ❍ FO	❍ PIC ❍ SIC	❍ PIC ❍ SIC ❍ FE ❍ FA ❍ FO	❍ PIC ❍ SIC ❍ FE ❍ FA ❍ FO

C. EXAMPLE OF CURRICULUM

PIC B-747-400 Transition Training	
❍ Ground Training ❍ Flight Training ❍ Emergency Training ❍ Differences Training ❍ Qualification Requirements	Segments within a Cirriculum

Figure 9-2 part 3

EXAMPLE OF INITIAL APPROVAL LETTER

ABC Airlines
Attn: Mr. Sampat Thongtep
Director of Training Address

Dear Mr. Thongtep:

This letter is in reference to ABC Airline's B-737-400 Pilot-in-Command and Second-in Command Initial Equipment Ground Training curriculum, pages 100/1 through 100/15, dated April 14, 1997. This curriculum is granted initial approval, effective April 30, 1997.

The expiration date of this initial approval is April 30, 1999. This office requests ABC Airlines provide at least 7 days advance notice of any training to be conducted under this curriculum to allow for evaluation of the training for final approval.

Manager, Flight Safety Standards Department
LCAA

Figure 9-3 Part 3

EXAMPLE OF LETTER OF DENIAL OF INITIAL APPROVAL

ABC Airlines
Attn: Mr. Prasit Viriyabaditgul
Director of Training

Dear Mr. Viriyabaditgul

This letter is in response to your request for initial approval of Revision 2 to ABC Airline's B-747-400 Pilot-in-Command and Second-in-Command Recurrent Ground Training curriculum, dated August 2, 1997. Your request for initial approval of revision 2 is denied for the following reason:

A portion of your scheduled operations occur in areas which during the winter months, are subject to cold weather, snow, ice, and sleet. Your pilot workforce must have adequate training in the safe operating practices associated with a cold weather environment, to enable them to cope effectively with such hazards. Revision 2 deletes training previously given on major aspects of cold weather operations and does not provide any identifiable instruction to your crews for operating flights in such conditions. Presently there is not another course of training for ABC Airline's pilots containing adequate information on cold weather procedures.

Manager, Flight Safety Standards Department
LCAA

Figure 9-4 part 3
ELEMENTS FOR TRAINING EVALUATION

ELEMENTS AVAILABLE FOR EVALUATING TRAINING	
CURRICULUM SEGMENT OUTLINES	Curriculum segment outlines contain the specific training modules and the amount of time allocated for the curriculum segment. The modules must be consistent with regulatory requirements and safe operating practices. This element requires direct examination.
COURSEWARE	Courseware converts curriculum outline information into usable instructional material. Courseware must be consistent with the curriculum outline and be organized to permit effective instructional delivery. It is readily adaptable to adjustments and refinement by the operator. This element usually requires direct examination.
INSTRUCTIONAL DELIVERY METHODS AND TRAINING ENVIRONMENT	Instructional delivery methods are used to convey information to the student. Effective learning is maximized if the instructional delivery adheres to and properly uses the courseware. The training environment should be conducive to effective learning. This element requires direct observation.
TESTING AND CHECKING	Testing and checking is a method for determining whether learning has occurred. Testing and checking standards are used to determine that a desired level of knowledge and skill has been acquired. Testing and checking also measures the effectiveness of courseware and instructional delivery. This element requires direct observation. It can be supplemented by examining operator records of test and checks.
SURVEILLANCE AND INVESTIGATION OF OPERATOR ACTIVITIES	Surveillance and investigations produce information about an operator's overall performance. A high rate of satisfactory performance usually indicates a strong, effective training program. Repeated unsatisfactory performances can often be traced to deficiencies in a training program. This element requires the examination and analysis of surveillance and investigative reports.

Figure 9-5 Part 3

EXAMPLE OF LETTER OF FINAL APPROVAL

ABC Airlines, Inc.
Attn: Mr. Prasit Viriyabaditgul
Director of Training
Address

Dear Mr. Viriyabaditgul

Final approval is granted to ABC Airlines' Flight Attendant Recurrent Ground Training curriculum, for pages 1 through 5, dated May 21, 1997, and for pages 6 through 7, dated April 15, 1998.

The effective date of final approval is January 20, 1999. ABC Airlines may continue to train in accordance with this curriculum until a revision is required by the LCAA or, until ABC Airlines revises the curriculum.

Manager, Flight Safety Standards Department
LCAA

CHAPTER 12: SURVEILLANCE OF AIRLINES GENERAL INFORMATION, POLICY AND PROCEDURES

40.1 PURPOSE

The purpose of Part 4 to this Handbook of Air Operator Certification, Administration, and Surveillance, is to clearly define the responsibilities, goals, and methods for surveillance of airline flight operations by the LCAA.

40.2 BACKGROUND

Section 4.2.1 of Part 1 to Annex 6 of ICAO Recommended Standards and Practices requires that member states issue air operator certificates or equivalent documents to air operators. The issuance of an air operator certificate shall be dependent upon the operator demonstrating an adequate organization and method of control and supervision of flight operations, and the continued validity of that certificate shall be dependent upon the operator's continuing maintenance of the standards which it demonstrated upon original issuance of the certificate. Member states must therefore perform surveillance of certificated operators in order to insure that operators continue to meet certification requirements and should incorporate provisions in their national legislation which permit government agencies which are responsible for aviation safety to conduct inspections of air operators.

It is important to make a clear distinction between surveillance and certification activities. Both are important aspects of an inspector's duties, and one should not take precedence over the other. Certification activities are required to license, certificate, or otherwise qualify an airmen or an airline to operate in a prescribed manner. Surveillance, on the other hand, is aimed at ensuring that the airmen or airline continue to adhere to the standards by which they were certificated or approved, through regular inspections of various aspects of an airline's operation.

40.3 OBJECTIVES OF THE CAA SURVEILLANCE PROGRAM

(a) The primary objective of surveillance is to provide the LCAA, by means of a variety of inspections, with an accurate, real-time, and comprehensive evaluation of the safety status of the air transportation system. This surveillance program objective is accomplished by inspectors performing the following:

(1) Determining each airline/operator's compliance with regulatory requirements and safe operating practices

(2) Detecting changes as they occur in the operational environment

(3) Detecting the need for regulatory, managerial, and operational change Measuring the effectiveness of previous corrective actions

40.4 PLANNING AND EXECUTING SURVEILLANCE PROGRAMS

(a) Surveillance is an important duty and responsibility of all aviation safety inspectors assigned to the LCAA. Surveillance programs provide a method for the continual evaluation of operator compliance with government regulations and safe operating practices. Information generated from surveillance programs permits the LCAA to act upon deficiencies which affect or have a potential effect on aviation safety. For surveillance programs to be effective, they must be carefully planned and executed. Inspections are specific work activities within a surveillance program which should exhibit the following characteristics:

(1) A specific work activity title

(2) A definite beginning and a definite end

(3) Defined procedures

(4) Specific objectives

(5) A requirement for a report of findings (either positive, negative, or both)

(b) Planning and executing any type of surveillance program may reasonably be broken down into four phases:

(1) *Phase One* - Developing a surveillance plan by determining the types of inspections necessary and the frequency of those inspections

(2) *Phase Two* - Accomplishing the surveillance plan by conducting the inspections

(3) *Phase Three* - Analyzing surveillance data gathered from inspection reports and related information from other sources

(4) *Phase Four* - Determining appropriate course of action

(i) **Phase One: Developing a Surveillance Plan**

Responsibility for the development of the annual operations surveillance program rests with the Manager, Flight Safety Standards Department. The surveillance program should recognize the need to conduct routine and ongoing surveillance, and should anticipate the possibility of special emphasis surveillance as a result of certain events such as accidents, incidents, repeated violations of Civil Aviation Regulations, and evidence of financial problems. When planning a surveillance program, the Flight Safety Standards Department must identify the program objectives, evaluate the resources available, and determine the specific types and numbers of inspections to be conducted in support of that program. Numbers of inspections should be established taking into consideration the current operating environment which the LCAA oversees (such as number of airplanes and variety of airplane types, number of crewmembers, routes, number and geographic location of transit stations, and the volume of training being conducted). Previous inspection reports, accident/incident information, compliance and enforcement information, and public complaints should also be used to determine both the types and frequency of inspections to be accomplished during a given time frame. History of compliance and cooperation with the inspectorate may also be considered when developing a surveillance program for a specific airline.

(ii) **Phase Two: Conducting Surveillance Plan Inspections**

During the conduct of the surveillance plan inspections, accurate and qualitative inspection reporting is essential. High quality inspection reporting is necessary for the effective accomplishment of the third and fourth phases of a surveillance program. The quality and standardization of inspection reporting will be enhanced through the use of the inspection checklists and report forms contained in this handbook.

(iii) **Phase Three: Analyzing Surveillance Data**

After the inspection data has been reported, an evaluation of the information obtained from inspection reports and related sources must be conducted. The purpose of this evaluation is to identify the areas of concern and note areas such as the following:

- Non-compliance with regulations or safe operating practices
- Both positive and negative trends
- Isolated deficiencies or incidents
- Causes of noncompliance, trends, or isolated Deficiencies

Evaluation of inspection results is a key phase of any surveillance program. The primary purpose of evaluating surveillance data is to identify both negative and positive trends as well as deficiencies which are not associated with an apparent trend. This evaluation of inspection results is also important in terms of redefining and implementing subsequent surveillance objectives and inspection activity. The Inspector must adopt systematic methods that permit accurate and effective evaluation of inspection results. Additionally, other related information from incidents, accidents, enforcement actions and other sources may provide valuable trend information which may relate to the operator's safety and compliance status. For example, if in a series of ramp inspection reports a trend of deficiencies in the use of the MEL is identified, but the cause of these deficiencies cannot be identified, the Inspector may need to adjust the emphasis on the types of inspections conducted. In this case, additional training program inspections, manual inspections, or flight control inspections (flight release procedures) may be more effective in determining the cause of these deficiencies.

(iv) **Phase Four: Determining Appropriate Course of action**

The Director, of Flight Safety Standards Department must use good judgment when determining the most effective course of action to be taken as a result of unsatisfactory inspection findings. The appropriate course of action often depends on many factors, many of which may be quite subjective. Various options which may be considered are: informal discussion with the operator and/or airman; formal written request for corrective action; withdrawal of LCAA approval for a program, manual, or document; and initiation of an investigation leading to formal enforcement/disciplinary action. Corrective action which an operator or airman takes independently of the LCAA should be taken into account. The LCAA must also decide whether or not the results of a specific inspection should result in a modification of their current surveillance program. As previously mentioned, the LCAA may elect to conduct further inspections to determine if the unsatisfactory finding was an isolated incident or part of a trend.

40.5 GUIDELINES FOR FREQUENCY OF OPERATIONAL INSPECTIONS

(a) The minimum numbers of the various types of inspections contained in this manual which must be accomplished are as follows:

(1) ***Manual Inspections***

All operations manuals, instructions, and procedures currently in use with Liberia Registered airlines will be reviewed within two years of adoption of this manual. Thereafter, all changes to manuals should be routed by the operator through the Inspector for concurrence. A complete review of each manual (AOM, AFM, MEL, Cabin Crew, etc., should be accomplished once every three years.

(2) ***Operations Control Inspections***
One inspection annually for each airline.

(3) ***Trip Records Inspections***
One inspection annually for each airline.

(4) ***Flight Time and Duty Records Inspections.***
One inspection annually for each airline.

(5) ***Training Program Inspections***

Approved training manuals covering all types of training conducted by each airline - ground, simulator, and flight - should be reviewed for content and currency within two years after adoption of this manual. Thereafter, all proposed modifications or additions to training programs must be routed through the LCAA for concurrence.

One ground training course, two simulator training periods, and two flight training periods should be observed annually for each aircraft type operated by the carrier, to ensure compliance with the approved training manual and with company procedures and policies.

(6) ***Training Records Inspections***

One inspection annually for each airline.

(7) ***Cockpit Enroute Inspections***

Four random inspections annually on each aircraft type operated by each airline.

(8) ***Cabin Enroute Inspections***

Four random inspections annually on each aircraft type operated by each airline.

(9) ***Station Facility Inspections***

One inspection every two years at each transit base used by each airline.

(10) ***Ramp Inspections***

Three inspections annually on each aircraft type operated by each airline.

(11) ***Pilot Proficiency Check Inspections***

A sufficient number of inspections so that each examiner and Flight Instructor is observed at least once annually in the performance of his duties on at least one type of check which he is qualified to conduct.

(b) It must be emphasized that the preceding are the minimum numbers which must be accomplished to fulfill the LCAA's surveillance responsibilities. Whenever possible, taking into account inspector resources and the demand for certification activities, the LCAA'S DG will schedule a significantly larger number of inspections of cockpit crews, cabin crews, Flight Instructor, and training events.

40.6 SPECIFIC INSPECTION PRACTICES

The remainder of this volume is devoted to the conduct and reporting of the various types of surveillance inspections required by ICAO. A surveillance program which includes

all of the types of inspections which appear in the following chapters will ensure that the LCAA is adhering to the surveillance guidelines provided in Chap. 9 of the ICAO *Manual of Procedures for Operations*.

CHAPTER 13: MAIN BASE INSPECTIONS: GENERAL

41.1 BACKGROUND AND OBJECTIVES

(a) Paragraph 9.6.5.1 of the ICAO *Manual of Procedures for Operations Certification and Inspection* states that Main Base Inspections should be performed at the operator's principal base of operations, sub-bases, and separate maintenance facilities; and the purpose of the inspection is to assess the suitability of the operator's organization, management, facilities, equipment, manuals, personnel, and training records. The operations portion of Main Base Inspections will be accomplished in six increments as follows:

(1) Operations Manual

(2) Operational Control

(3) Operations and Flight (Trip) Records

(4) Flight and Duty Time Records

(5) Training Program

(6) Training and Qualification Records

41.2 GENERAL INSPECTION GUIDELINES

(a) Inspectors should contact the operator well in advance to make appropriate arrangements for inspecting elements of the main base operation. Unlike many types of operations inspections which are most effective when conducted on short notice (such as Ramp Inspections and En- route Inspections) elements of the main base operation are not subject to rapid adjustments on the part of the operator in anticipation of the inspection, and the inspections are most productive following adequate notice and coordination. During the initial contact, the operator should be briefed in detail regarding the specific intent of the inspection, the areas to be covered, and the approximate duration of the inspection. Arrangements should be made to ensure that key company personnel will be present during the course of the inspections to provide information and answer questions. The required company presence will vary according to the type of inspection. For example, when evaluating Operational Control procedures and operations, the inspector will require almost constant contact with personnel who are responsible for each functional area. In contrast, the inspection of Flight and Duty Time records requires very little company involvement except to make records available and answer any initial questions the inspector may have about the operator's record keeping system.

(b) Before commencing each type of inspection listed in 2.1 above, inspectors should familiarize themselves to the maximum extent possible with the operator's manuals, policies, and instructions regarding the area to be inspected. In developing an annual work program, it is therefore, sound practice to schedule an Operations Manual Inspection in advance of the other types of inspections contained in this chapter. This will provide the inspector with an overview of the operator's instructions and policies prior to evaluating their effectiveness in day to day practice. Before performing the individual inspections contained in chapters which follow, inspectors should review for a second time and in greater depth those portions of the operator's manual which pertain to the specific area to be evaluated. In that sense, all inspections which are conducted by operations inspectors become an extension of the formal evaluation of the operator's manual, because unsatisfactory performance in operational areas can often be traced to inadequate planning, guidance, and training.

(c) Upon arriving at the site where the inspection is to be conducted, inspectors should introduce themselves and present their identification to the operator's representatives, if not personally known to them. The inspector should review with the operator the scope of the inspection to be conducted, and assemble key company personnel who are to be available to answer questions during the course of the inspection. The inspector should advise the operator that a time and place will be scheduled at the conclusion of the inspection to review its findings.

41.3 SPECIFIC INSPECTION PROCEDURES AND PRACTICES

Detailed guidance regarding the conduct of the 6 types of inspections listed in 2.1 above, along with inspection checklists/report forms, are contained in Chapters 3 through 8 of Part.

CHAPTER 14: MAIN BASE MANUAL INSPECTIONS

42.1 BACKGROUND AND OBJECTIVES

(a) Paragraph 4.2.2 of Annex 6 Part 1 to the Chicago Convention requires that an operator must provide, for the use and guidance of operations personnel, an operations manual which will be amended or revised as is necessary to insure that information contained therein is kept up to date.

(b) The objective of the LCAA's inspection of a carrier's operations manual is to substantiate that it:

(1) Implements ICAO International Standards and Recommended Practices and The Regulations, and does not conflict with the regulations of any other state where operations will be conducted

(2) Provides clear, complete, and detailed instructions, policies, and procedures so that operational staff are fully informed of what is required of them. Procedures should be effective and represent sound safety philosophy. Through the proper use of this material it is expected that personnel will be able to perform their duties to a high degree of precision, thus resulting in safe and efficient operations.

(3) Presents necessary guidance and instructions to personnel in a suitable and convenient format.

(4) Outlines standardized procedures for all crew member functions

42.2 MANUAL ORGANIZATION

(a) In order to accomplish the above requirements and effectively organize policy and instructions, that portion of an operator's overall manual system which applies specifically to *operations* Personnel are typically divided into several volumes such as:

(1) **A Basic Operations Manual (BOM) or Flight Operations Manual (FOM)** which contains general guidance for flight crew members regarding company organization, policies, procedures, and aspects of flight operations which are applicable to several or all aircraft types which the company may operate.

(2) **An Aircraft Operating Manuals (AOM) or Aircraft Flight Manuals (AFM)** which are specific to aircraft types and contain such information as operating limitations, aircraft equipment and systems, normal, abnormal, and emergency operating procedures and checklists, and performance data.

(3) **A Flight Attendant Manual** which contains general and specific information regarding the Airline’s policy and duties, cabin safety procedures, and information concerning cabin configuration and emergency equipment aboard the types of aircraft operated.

(4) **A Minimum Equipment Lists and Configuration Deviation Lists** which contain guidance regarding the operation of aircraft with inoperative equipment of missing components.

(5) **A Flight Operations Officer or Dispatcher Manual** which contains information regarding operational control of aircraft and dispatcher duties and procedures.

(6) A **Weight and Balance Manual** which contains information regarding aircraft loading and CG considerations

(7) **A Route Manual** which contains enroute charts, aerodrome approach plates, information about communications facilities, navigation aids, air traffic services, etc.

(8) **A Training Manual** which contains descriptions of approved training courses, flight maneuvers, training procedures, and qualification requirements for company flight operations personnel

(9) **A Dangerous Goods Manual** which describes procedures for the identification, labeling, and handling of hazardous materials.

(b) The above list is presented as an example of one method for organizing the wide range of information required of an airline, and is not intended to be all-inclusive or typical of every operator. The overall manual system may be organized in any manner which adequately provides guidance concerning all important aspects of the carrier's operation. Very small operators may reasonably cover all of the required subject areas in one volume.

Note: *Chapter 7 of this Part contains detailed guidance regarding Training Manual inspections.*

42.3 SPECIFIC OPERATIONS MANUAL INSPECTION AREAS

(a) Inspectors should review the airline's operations manual or manual system to ensure that it contains information in sufficient detail to permit all flight operations personnel to perform their duties safely and efficiently. The following areas should be evaluated:

(1) **Organization and readability**

The manual or manuals should be organized so that information specific to various employee positions and types of operations is easy to locate, clear, concise, and unambiguous. Tables of contents should be detailed enough so that specific subject areas may be easily and expeditiously located. Type quality, illustrations, and graphics should be clear and readable. Poorly copied pages from manufacturers' data or from other operators' manuals should not be acceptable.

(2) **Validity and accuracy**

Technical information contained in manuals such as weight and balance charts, performance charts, limitations, etc. should accurately reflect data provided from the manufacturer or have been developed through the use of accepted and approved methods.

(3) **Continuity**

Information presented in the various sections or volumes of a manual should be consistent with that presented in other sections.

(4) **Currency and Conformity**

Information contained in manuals should reflect current company organization, equipment, procedures, and policies; ICAO standards and recommended practices, The Regulations, and technical data. The manual(s) should be easy to update and contain a list of effective pages.

(5) **Distribution and Availability**

The operator should have an effective system for distributing and updating manuals. There should be no question as to who has responsibility for entering changes in specific manuals. The LCAA must be provided with copies of all manuals.

(6) **Approvals**

Certain portions of the operator's manuals are normally reviewed in detail and require specific signature approval by the LCAA. These include, but are not limited to:

(i) Aircraft operating limitations

(ii) Normal, abnormal, and emergency checklists

(iii) Minimum equipment lists

(iv) Training syllabi and procedures

The LCAA *tacitly accepts* other portions of the operator's manual after its review.

(7) **Content**

The *Air Operator Manual Inspection Checklist/Report* form which appears at the end of this chapter will be used for all operations manual inspections. The focus of the manual inspection will be to evaluate the carrier's operations manual in the areas listed above. The "content" area of the form contains a checklist of the minimum subject areas which should be adequately addressed in the operator's manual(s). The checklist items in the "content" area are designed to be used for all operators, both domestic and international. Certain items may not apply to domestic operations. Training subjects are omitted because they are contained in Chapter 7 of this volume. The intent of the inspection is to generally review the operator's manual system and to ensure that all of these subject areas are at least addressed. An inspector will study many of these subject areas in detail in the course of preparing for and conducting other types of inspections (such as Operations Control inspections and Station Facility inspections) and may properly make more detailed assessments of the contents of those areas at that time.

Liberia CAA
Air Operator Manual Inspection Checklist/Report

Operator:	Date:	Location:	Inspector:

S = Satisfactory; **U** = Unsatisfactory; **P** = Potential; **I** = Information; **E** = Exceeds

A. GENERAL

1. **Organization and Readability**
   - Clear
   - Concise
   - Information easily Located
   - Print Quality
2. **Validity and Accuracy**
3. **Continuity**
4. **Currency and Conformity**
5. **Distribution and Availability**
6. **Approvals**

B. CONTENTS

1. Description of Operations Organization
2. Duties and Responsibilities of Operations Management
3. Duties and Responsibilities of Crewmembers and Dispatchers
4. Succession to Command
5. Minimum Crew
6. Flight and Duty Time Limits
7. Report for Duty Policy
8. Compliance with State's Regulations including List of Applicable Regulations
9. Compliance with Foreign Regulations
10. Operational Control Responsibilities and Procedures
11. Flight Planning and Content of Flight Plans
12. Cold Weather Ops
13. High Temperature Ops
14. High Altitude Ops
15. Turbulent Air Procedures
16. Configuration Deviations
17. Minimum Equipment List and Policies
18. Fuel and Oil Policy and Procedures
19. Operating Weather Minima Policy
20. Maximum Flight Altitudes
21. Altimeter Settings
22. Interception of Civil Aircraft
23. Route, Navigation, and Aerodrome information
24. Overweight Landings
25. Flight Diversion
26. Severe Weather
27. Passenger Handling
    - Briefings and Announcements
    - Unruly Passengers
    - Alcoholic Beverages
    - Medical Emergencies
28. Communications
29. Security
30. Hijacking
31. Hazardous Materials
32. Cabin Baggage Policy
33. Loading and Weight and Balance Control
34. Search and Rescue
35. Cockpit and Cabin Emergency Equipment
    - description
    - Location
    - Use
36. Reports/Notification
    - Accidents and Incidents
    - Emergencies
    - Deviations
    - Hazardous Conditions
    - Meteorological
    - Inflight Irregularities
    - Near Misses
    - Pireps
37. Cabin Emergency Proced.
38. Flight Crew Incapacitation
39. Ozone and Solar Radiation
40. Emergency Evacuation
41. Ditching
42. Ground to Air Visual Codes
43. Refueling with Passengers on Board
44. Long Range Nav Procedures
45. Requirement for Flight Crewmembers to Remain at Controls
46. Records Management
    - Flight and Duty Time
    - Disposition of Flight Papers
    - Training and Qual.
47. Admission to Cockpit
48. Maintenance of Logbooks
    - Aircraft
    - Cabin Discrepancies
49. Limited Experience PIC's
50. Aircraft Operating Limitations
51. Aircraft System Descriptions and Operating Instructions
54. Aircraft Performance Data
    - Runway Performance Analysis
    - Phase of Flight Performance Information
    - Buffet Boundaries
52. Aircraft Normal, Abnormal, and Emergency Operating Procedures
53. Aircraft Normal, Abnormal, and Emergency Checklists
54. Operator Certificate and
55. Operating Specifications
56. Simulated Emergency
57. Procedures with Passengers
58. Flight Safety Program

(See back for comments.)

REMARKS: (Continue on back if necessary):	
OVERALL RESULT: ☐ **Satisfactory** ☐ **Unsatisfactory**	**INSPECTOR'S SIGNATURE**

CHAPTER 15: MAIN BASE OPERATIONAL CONTROL INSPECTION

43.1 BACKGROUND AND OBJECTIVES

(a) ICAO Annex 6, Part 1, Section 4.2 requires operators to demonstrate a method of control and supervision of flight operations. Section 5.4.4 of the ICAO *Manual of Procedures for Operations Certification and Inspection* contains general information regarding operations control organizations and sets forth specific areas to be inspected before an operator is certified. Annex 6 Chapter 10 sets forth standards and recommended practices regarding Flight Operations Officers (Dispatchers).

(b) An operational control inspection has two primary objectives. The first objective is for the LCAA to ensure that the operator is in compliance with the minimum requirements of the Regulations and conforms to ICAO international standards and recommended practices. The second objective is for an inspector to ensure that the operator's system of control provides positive assurance of public safety. The operator must meet both objectives to obtain and retain an operating certificate or equivalent document. To make this determination, the inspector must evaluate the operator to ensure the following:

(1) Responsibility for operational control is clearly defined

(2) An adequate number of operational control personnel are provided

(3) Applicable manuals contain adequate policy and guidance to allow operational control personnel and flight crews to carry out their duties efficiently, effectively, and with a high degree of safety

(4) Operational control personnel are adequately trained, knowledgeable, and competent in the performance of their duties

(5) Flight control personnel and flight crews have been provided with the necessary information for the safe planning, control, and conduct of all flights

(6) The operator provides adequate facilities for flight control functions

(7) The operator performs all operational control functions required by the regulations

(8) The operator performs all functions necessary to provide adequate operational control in the environment in which operations are conducted

(9) Adequate emergency procedures and contingency plans have been formulated

43.2 GENERAL INSPECTION PRACTICES AND PROCEDURES

(a) Inspectors conduct operational control inspections through systematic manual reviews, records inspections, observations, and interviews.

(1) **Inspector Preparation and Manual Review**

Before starting an operational control inspection, the inspector must become familiar with the operational control provisions of the operator's manual system. This manual review is both the first step in the inspection process and preparation for subsequent steps. Such a review would be in addition to or in conjunction with the general evaluation of the operator's entire manual system which is addressed in Chapter 3 of this part, and its purpose is to examine operations control policy and guidance in depth.

(2) **Observations, Interviews, and Records Checks**

(i) The inspector should establish with the operator a mutually convenient time for conducting the interviews and records checks, and for observing flight control functions.

(ii) Inspectors should conduct interviews with both management and working-level personnel to meet inspection objectives. Inspectors should plan these interviews so that the required information can be obtained without unduly distracting personnel from their duties and responsibilities.

(iii) Inspectors should observe actual flight-release operations. Before beginning these observations, an inspector should request a tour of the operator's facility for general orientation. During this time, he may observe a operations control personnel performing a variety of job functions. If possible, these observations should be made during periods of peak activity, adverse weather, or during non-routine operations. Inspectors should ask pertinent questions of personnel regarding their individual duties and responsibilities and relationship to the overall operations control effort.

(iv) When possible, inspectors should observe dispatcher 1EEE being conducted to evaluate the knowledge level of dispatchers and the performance of the supervisor.

Note: *Detailed guidance concerning Flight Operations (Trip) records and Flight and Duty Time records is contained in Chapters 5 and 6 of this part. Each type of records inspection has its own checklist and report form. These areas may be examined separately or in conjunction with the remainder of the operational control inspection areas.*

43.3 SPECIFIC INSPECTION PRACTICES AND PROCEDURES

The Air Operator Operational Control Checklist/Report form at the end of this section contains a list of specific inspection "reminders" which should adequately sample the effectiveness of the carrier's operations control organization, functions, and guidance. It will serve as both a checklist of items to be covered and as a means of recording the results of the inspection. The following inspection areas will be evaluated:

(a) POLICIES AND PROCEDURES

(1) Authorized Operations

(i) The type of operations that may and may not be conducted should be clearly specified in manuals and other instructions (VFR, IFR, extended range, CAT II, etc)

(ii) Regulations and the operator's policies applicable to each type of operation should be clearly stated

(iii) Geographic areas and destinations to which extended overwater flights or extended range operations may be conducted should be clearly specified

(2) Manuals

(i) A section of the Operations Manual should be devoted to the policy and guidance for operational control

(ii) If the operator conducts extended overwater or extended range operations, a separate section of the operations manual should contain key considerations regarding these types of operations

(iii) The applicable section(s) of the Operations Manual should be readily available to dispatchers and flightcrews while they perform their duties

(3) **Predeparture Functions**

The responsibility and procedures for accomplishing the following functions should be clearly defined and properly executed:

(i) Crew assignment

(ii) Load planning

(iii) Aircraft routing

(iv) Flight planning

(v) Release of the aircraft from maintenance

(vi) Control of MEL and CDL limitations. Required instruments and equipment should be installed and operational

(vii) Compliance with flight operations limitations

(viii) Weight and balance

(ix) Performance Planning, including consideration of mass, elevation, temperature, wind, obstacles, etc.

(x) Adequate procedures for supervising and verifying these activities should be established

(xi) The operator should have a means for the PIC and dispatcher to ensure that each of these functions has been satisfactorily accomplished before the aircraft departs

(4) **Original Release**

(i) The conditions under which a flight may and may not be dispatched (type of operation, weather, crew compliment, load, etc.) should be clearly defined

(ii) The conditions under which a flight must be re-routed, delayed, or canceled should be defined

(iii) The flight release should contain all the necessary elements.

(iv) A written copy of weather reports and forecasts (including PIREPS) and NOTAMS should be attached to the release and provided to the flight crew

(v) Extended overwater or extended range operations should be conducted under instrument flight rules

(vi) Flight should not be commenced unless it is ascertained by every reasonable means that airports to be used are adequate for the operation

(5) **Dispatcher Briefing**

(i) The operator's procedures should provide for briefing of the PIC by the dispatcher

(ii) The minimum content of the briefing should be specified and adequate

(6) **Dual Responsibility**

(i) The signatures of both the PIC and the Dispatcher should be required on the flight release

(ii) The PIC's obligation to operate the flight according to the release, or to obtain an amended release, should be clearly stated

(7) **Flight-Following**

(i) The dispatcher's flight-following requirements and procedures should be clearly identified

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

(iii) Flight crew reporting requirements and procedures should be clearly stated

(iv) There should be specified procedures for dispatchers to follow when a required report is not received

(v) The operator should maintain a record of communications between the dispatcher and the flight

(vi) Procedures should be established to notify flights en route concerning hazardous conditions relating to aerodromes, navigation aids, etc., and to report changes in forecast weather

(8) **Planned Re-release**

If the operator uses planned re-release procedures in connection with extended overwater operations, the following areas should be considered:

(i) A separate operational analysis should be prepared for the two routes and provided to both the PIC, dispatcher, or flight follower.

(ii) The re-release point should be common to both routes

(iii) Re-release messages should be transmitted, acknowledged, and recorded. The message should include all requirements including NOTAM and weather information.

(iv) The aircraft should meet landing performance requirements at the intermediate destination.

(9) **Inability to Proceed as Released**

(i) Policy concerning the PIC's latitude to deviate from a dispatch release without obtaining a new release should be stated

(ii) Specific and adequate direction and guidance should be provided to PIC's and dispatchers for the actions to take when a flight cannot be completed as planned (such as destinations or alternates below minimums, runways closed or restricted)

(iii) Procedures to follow in case of diversion or holding should be specifically and clearly stated

(iv) Procedures to be followed in case of an emergency procedure which results in deviation from local regulations or procedures should be clearly stated

(10) **Weather**

(i) Weather reports should be obtained from a source approved by the LCAA

(ii) Forecasts should be based on approved weather reports

(iii) The operator have adequate procedures for updating weather information when the aircraft is delayed on the ground

(iv) The operator should have adequate procedures for providing the latest available weather reports and forecasts to flightcrews while the flight is en route

(v) Procedures should be employed for disseminating information pertaining to turbulence, thunderstorms, and other adverse weather phenomena; and as well as the best routes for avoiding them

(vi) The flight should not be released into know icing conditions unless equipped to cope with such conditions

(11) **Aerodrome Operating Minima**

(i) If release under VFR is authorized, the forecast and actual weather reports should permit VFR flight over all portions of the route to be flown under visual flight rules

(ii) IFR departure minimums should be consistent with Air Navigation Act and specific LCAA approvals

(iii) Takeoff alternates should be named on the dispatch release when flights are released with the departure airport below landing minimums, and should meet the requirements of ICAO Annex 6 Para 4.3.4.1 and applicable Air Navigation Act

(iv) Destination weather minimums should be clearly defined

(v) The operator should make provisions regarding weather minimums for "high minimums" (or "low time") captains

(vi) When a flight is released to a destination below CAT I minimums, the airplane type should be equipped and authorized for CAT II or CAT III operations at that location and the captain should be properly qualified

(vii) destination alternates should be named on the dispatch release when required.

(viii) The weather at the named destination alternate airport should be equal to or better than that required by applicable regulations.

(ix) Flights should not be continued toward the aerodrome of intended landing unless the latest available information indicates that operating minima can be complied with.

(12) **Minimum Enroute Altitudes**

The operator should establish minimum enroute altitudes for routes flown, 1 which should not be lower than those established by the LCAA.

(13) **Selection of Alternates**

(i) Policy, direction, and guidance should be provided for the selection of takeoff, enroute, and destination alternates

(ii) Terrain and engine-out performance should be considered in selecting an alternate

(14) **NOTAMS**

(i) NOTAM information should be available and utilized

(ii) LCAA NOTAMs should be provided to appropriate extended overwater operations

(15) **Information**

(i) The operator should make adequate provisions for supplying airport and navigation information to pilots and dispatchers

(ii) The operator should have an adequate method for providing data to dispatchers on takeoff and landing minimums at each airport. Dispatchers should have immediate access to such data

(16) **Fuel and Oil Supplies**

(i) All increments of fuel required by ICAO Annex 6 and LCAA regulations (start & taxi, takeoff to arrival at destination, approach and landing, missed approach, alternate fuel, holding, and contingency) should be provided. Special fuel provisions for extended range operations should be strictly adhered to.

(ii) If aircraft are dispatched without an alternate, adequate contingency fuel should be carried for un-forecast winds, terminal area delays, runway closures, and contingencies

(iii) Minimum fuel procedures should be specified for both dispatchers and PIC's and should be adequate for the environment in which operations are conducted

(17) **Engine Out Performance Considerations**

(i) The operator should take into account engine out performance rules when applicable to specific routes and types of operations.

(ii) Engine out performance analysis should be complete and accurate

(iii) When possible, multiple ETP's should be provided for overwater flights and extended range operations.

(iv) Adequate guidance should be available for drift down computations and fuel dump requirements

(18) **Emergency Procedures**

(i) Emergency action procedures and checklists should be published and readily available to operations control personnel for the following emergencies:

- In flight Emergency
- Crash
- Overdue or missing aircraft
- Bomb threat
- Hijacking

(ii) Operator should have available lists containing information on the emergency and survival equipment carried aboard its airplanes

(iii) Provisions should be made to retain in safe custody the flight recorder of an airplane which becomes involved in an accident

(19) **Changeover Procedures**

During shift changes, an adequate overlap should be provided for dispatchers and other flight operations control personnel to brief their oncoming counterparts.

(20) **Communications and Reports**

Provisions should be made concerning the following:

(i) In flight meteorological observations and reports

(ii) Reports of hazardous conditions other than meteorological

(iii) Coordination with ATS regarding operational instructions to aircraft in flight which change an ATS flight plan

(b) DISPATCHERS AND METEOROLOGISTS

(1) **Qualification**

(i) All dispatchers should be certified in accordance with the LCAA regulations

(ii) Dispatchers should be successfully completed a competency check within a required eligibility period

(iii) Dispatchers should have completed route familiarization within a specified time period

(iv) Dispatchers at foreign locations should hold dispatcher certificates from the country of the operator

(v) Any meteorologists who are employed by the operator should be qualified according to LCAA regulations and operator policy

(2) **Knowledge of Weather**

Dispatchers should be:

(i) Knowledgeable about the following weather conditions:

(ii) Surface (fronts, fog, low ceilings, etc.)

(iii) Upper Air (tropopause, jet streams)

(iv) Turbulence (pressure and temperature gradients)

(v) Severe (Low level windshear, microburst, icing, thunderstorms)

(vi) Able to read terminal reports, forecasts, various weather depiction charts and upper air charts and interpret the meanings

(3) **Knowledge of the Area**

Dispatchers should be:

(i) Able to immediately recognize the airport identifiers for the airports in the area they are working

(ii) Generally familiar with the airports in the area they are working (number and length of runways, available approaches, general location, elevation, surface temperature limitations)

(iii) Aware of which airports in the areas they are working in are special airports, with regard to crew qualifications

(iv) Aware of the terrain surrounding the airports in the areas they are working

(v) Aware of dominant weather patterns and seasonal variations of weather in the area

(vi) Aware of route segments limited by drift down

(4) **Knowledge of Aircraft and Flight Planning**

Dispatchers should have knowledge of:

(i) The general performance characteristics of each airplane with which they are working (such as average hourly fuel burn, holding fuel, engine-out, drift-down height, effect of an additional 50 knots of wind, effect of a 4,000 ft. lower altitude, crosswind limits, maximum takeoff and landing weights, required runway lengths)

(ii) All of the elements contained in the operator's flight plan

(5) **Knowledge of Policy**

Dispatchers should be:

(i) Knowledgeable regarding LCAA policy and authorizations regarding such items as weather minimums

(ii) Aware of the provisions of the operators manual regarding all policies and procedures discussed in this section

(6) **Knowledge of Responsibilities**

Dispatchers should be:

(i) Knowledgeable of their responsibilities under the Regulations (such as briefing PIC; canceling, re-scheduling, or diverting for safety; in flight monitoring; in flight notification of PIC)

(ii) Knowledgeable of their responsibilities under the operator's manual as discussed in paragraph A

(7) **Proficiency**

Dispatchers should be:

(i) Competent in the performance of their assigned duties

(ii) Alert for potential hazards

(8) **Duty Time**

Regulatory requirements should be complied with. In the absence of regulatory requirements, shifts should be of a reasonable length and adequate rest time should be provided between shifts

(c) SUPERVISORS

(1) **Qualification**

Supervisors of dispatchers should themselves be qualified and current as dispatchers

(2) **Conduct of Competency Check**

Competency Check which are administered by supervisors should be appropriate, thorough, and rigorous

(d) FACILITIES AND STAFF

(1) **Physical**

(i) Working space should be adequate for the number of people working in the dispatch center

(ii) Temperature, lighting, and noise levels should be conducive to effective performance by operations personnel

(iii) Access to the facilities should be controlled

(2) **Information**

(i) Dispatchers should be supplied with all the information they require (such as on flight status, maintenance status, load, weather, facilities)

(ii) Information effectively disseminated and displayed; and be quickly and accurately located

(iii) Real time weather displays should be available for adverse weather avoidance

(3) **Communications**

(i) A dispatcher should be able to establish rapid and reliable voice communications with a captain at the gate and to be able to deliver a message to a flight en route and get a response within a reasonable time interval

(ii) Dispatchers should be properly authorized and qualified to use all communications channels required for operational control

(iii) Direct voice radio communications should be available between the control center and line stations to the maximum extent possible

(iv) Backup communications links should be available in case of a failure of the primary links

(v) The operations control center should have adequate communications with appropriate ATS facilities

(4) **Management**

(i) Overall responsibility for operations in progress should be assigned by the operator to one individual who can coordinate the activities of all of the dispatchers

(ii) Adequate internal communications links to flow control type facilities and to high level management officials should be firmly established

(5) **Workload**

(i) The operator should assign enough personnel to adequately handle the workload during periods of both normal and non-routine operations

(ii) Dispatchers should have enough time perform both dispatch and flight-following duties in an effective manner Dispatchers should not be used to perform other functions such as clerks, maintenance officers, etc., to the detriment of their primary function

(iii) Duty time restrictions for certificated personnel should be adhered to.

LCAA
Air Operator Control Inspection Checklist/Report

Operator	Date	Location	Inspector

S = Satisfactory; **U** = Unsatisfactory; **P** = Potential; **I** = Information; **E** = Exceeds

A. **POLICIES AND PROCEDURES**

1. **Authorized Operations**
2. **Manuals**
3. **Predeparture Functions**
   - Crew assignment
   - Load planning
   - Aircraft routing
   - Flight planning
   - Release of the aircraft from maintenance
   - Control of MEL and CDL limitations
   - Compliance with flight operations limitations
   - Weight and balance
   - Adequate Supervision
4. **Original Release.**
5. **Dispatcher Briefing.**
6. **Dual Responsibility.**
7. **Flight-Following.**
8. **Planned Re-release.**
9. **Inability to Proceed as Released.**
10. **Weather**
11. **Aerodrome Operating Minima**
12. **Minimum Enroute Altitude**
13. **Selection of Alternates**
14. **NOTAMs**
15. **Information**
16. **Fuel**
17. **Engine-Out Performance**
18. **Emergency Procedures**
19. **Changeover Procedures**
20. **Comm. and Reports**

B. **DISPATCHERS AND METEOROLOGISTS**

1. **Qualification**
2. **Knowledge of Weather**
3. **Knowledge of Area**
4. **Knowledge of Aircraft and Flight Planning**
5. **Knowledge of Duties and Responsibilities**
6. **Knowledge of Policy**
7. **Proficiency**
8. **Duty Time**

C. **SUPERVISORS**

1. **Qualification**
2. **Conduct of Competency Checks**

D. **FACILITIES AND STAFF**

1. **Adequacy of Facilities**
2. **Pertinent Information**
   - Comprehensive
   - Disseminated
   - Available
   - Current
3. **Communications**
4. **Management**
5. **Workload**

REMARKS: (Continue on back if necessary):

OVERALL RESULT: ☐ **Satisfactory** ☐ **Unsatisfactory**

INSPECTOR'S SIGNATURE

CHAPTER 16: MAIN BASE OPERATIONAL AND FLIGHT (TRIP) RECORDS INSPECTIONS

44.1 BACKGROUND AND OBJECTIVES

(a) ICAO Annex 6, Part 1, Para. 4.3.1 requires that a flight shall not be commenced until flight preparation forms have been completed certifying that the PIC is satisfied that:

(1) The mass of the airplane is such that the flight can be conducted safely taking into account the flight conditions expected, and that the airplane load is properly distributed and safely secured.

(2) Operating limitations have been complied with and that instruments and equipment required for the particular type of operation to be undertaken are installed and sufficient for the flight.

(3) Operational flight planning has been conducted

(4) The airplane is airworthy and a maintenance release has been issued.

(b) ICAO Annex 6, Part 1, Para. 4.3.2 requires that completed flight preparation forms be kept by the operator for a period of three months. Flight preparation forms meeting the above requirements and conforming to LCAA regulations commonly take the following forms: the load manifest, the dispatch or flight release, the flight plan, and the maintenance or airworthiness release.

(c) The primary objective of operations and flight records inspections is to ensure that operators meet established operator procedures and appropriate CIVIL AVIATION REGULATIONS for the proper preparation and retention of operational trip records. Inspectors can evaluate trip records to reconstruct a particular flight or a series of flights by examining flight plans, dispatch or flight releases, loading and weight documents, weather documents, and other related flight information retained by the operator. The inspector's evaluation provides the LCAA with the methods of information acquisition and dissemination used by the operator.

44.2 INSPECTION PRACTICES AND PROCEDURES

(a) Trip records inspections are normally conducted at the operator's principal base of operations. Operators should have established a system where transit stations forward all trip records information to one central location where the information is retained for the required time period. Some operators may have most of their trip records information stored in a computerized format.

(1) Inspectors should contact the operator's personnel responsible for maintaining trip record files and advise them that an inspection shall be conducted. Upon arriving at the record keeping location, the inspector should properly identify himself and request records for a specific series of trips. This ensures that the operator has an effective means of storing record information and is capable of retrieving specific trip information at the LCAA's request. Inspectors should also request space at the operator's facility to conduct the inspection. It is not recommended that inspectors to remove trip records from the operator's facility.

(2) Before conducting the actual inspection, inspectors should familiarize themselves with the operator's trip records procedures, formats, and means of disseminating information to flight crews. If the inspector has previously completed an operational control inspection of the airline or is seconded from that airline, he should already

have a working knowledge of the operator's system. Inspectors should pre-plan the inspection by deciding which specific areas should be concentrated upon, such as listing alternates, accurate fuel loads, dispatch release time versus actual block out time, and accurate and timely weather information.

(3) During the conduct of the actual inspection, inspectors should examine all of the available documents for each flight and cross-check the information between the trip records. For example, the fuel load on a dispatch release should agree with the fuel load on the load manifest, the flight plan, and the fuel slip (if available).

(4) The Airline Operations and Flight Records Inspection Checklist/Report form which is included at the end of this chapter closely follows the information and requirements presented in paragraph 5.3 of this chapter.

44.3 TRIP RECORDS INSPECTION AREAS

Operations and flight (trip) records are divided into five general areas as follows:

(1) **General Inspection Area**

This inspection area refers to those inspection elements that are common to all trip records. Inspectors should evaluate such items as record availability, practicality, legibility, currency, continuity, and conformity as they relate to regulatory record keeping requirements. Inspectors should ensure that each trip record package they examine contains all of the required information and that it pertains to the actual flight it represents. Each document should have a date, flight number or a trip number, and an aircraft registration number which clearly identifies the applicable flight.

(2) **Flight Plan Inspection Area**

This inspection area refers to the flight planning requirements which may be applied to most scheduled airline operations. Inspectors should evaluate flight plan content. Many operators incorporate the flight plan and the dispatch/flight release into one document. This is acceptable and reduces the duplication of information that may be required by both documents. The flight plan should contain the following information:

(i) Aircraft registration number and type of aircraft

(ii) Flight number

(iii) Name of the PIC (usually found on the dispatch release)

(iv) Point and proposed time of departure

(v) Proposed route, cruising altitude (or flight level), and true airspeed at the cruising altitude

(vi) Minimum flight altitude and aerodrome operating minima

(vii) Point of first-intended landing and the estimated elapsed time until over that point

(viii) Amount of fuel on board (in hours)

(ix) An alternate airport, if required by ICAO Annex 6, Part 1, Para. 4.3.4.3 or as specified in appropriate CIVIL AVIATION REGULATIONS.

(x) Number of persons in the aircraft, except where that information is otherwise readily available to the LCAA

(xi) Any other information the PIC or ATC believes is necessary for ATC purposes

(3) **Dispatch/Flight Release Inspection Area**

(i) A dispatch or flight release and a flight plan is normally executed and signed by both the PIC and the dispatcher (flight operations officer) for the following types of flights

- All scheduled flights
- All extra section (unscheduled) flights
- All charter flights
- All ferry flights
- All proving flights
- All flights undertaken to reposition an airplane after landing at an unscheduled Airport.

(ii) The dispatch or flight release should contain the following information:

- Aircraft identification number
- Trip number
- Departure airport, intermediate stops, destination airports, and alternate airports
- A statement of the type of operation (IFR or VFR)
- Minimum fuel required
- Weather reports and forecasts for the destination airport, each intermediate stop, and any alternate airport that is the latest information available at the time the release is signed

(iii) With regard to minimum fuel required, ICAO Annex 6, Part 1, Section 4.3.6 gives international standards for required fuel based on type of airplane and operation. Section 4.2.9.2 requires operators to keep fuel and oil records for at least three months. Inspectors should examine records to ensure that they include an annotation of the minimum fuel required to conduct the flight, and that this fuel load is in accordance with ICAO standards and applicable Civil Aviation Regulations. Many operators will provide a breakdown of fuel loads

such as trip fuel, alternate fuel, reserve fuel, and holding fuel. When examining fuel figures, inspectors should cross-check the dispatch or flight release fuel quantity (or weight) with the load manifest fuel quantity (or weight) to ensure that the figures are the same. Additionally, inspectors must ensure that the operator's flight plan includes the amount of fuel on board (in hours), and that this figure agrees with the figures for the amount of fuel annotated on both the flight release and the load manifest. Inspectors may obtain hourly fuel burn information from the cruise control charts in the applicable Airplane Operating Manual (AFM).

(iv) The operator must comply with Air Navigation Act time limits for the validity of a dispatch or flight release. If flights are delayed beyond a prescribed time, they must be re-released prior to departure. To ensure the operator is re-releasing flights as required, inspectors should determine the actual departure times from company logs, ATC tower logs, or some other means, and then compare those times with the dispatch or flight release times (as applicable).

(4) **Load Manifest Inspection Area**

(i) Each trip records package, regardless of the type of operation, should contain aircraft weight, balance (CG), and loading information. Passenger and cargo weight information must be accurately reflected on the load manifest. Inspectors should inspect and validate the operator's loading documents to ensure their accuracy and compliance with the Act, manufacturer's data, and the aircraft load data sheet. The load manifest should contain the following information:

- The individual weights of the aircraft, fuel and oil, cargo and baggage, passengers, and crewmembers
- Maximum allowable takeoff weight for the runway to be used (both runway-limited and climb-limited weights)
- Maximum allowable takeoff weight (considering anticipated fuel and oil consumption rates) that shall allow compliance with en route performance limitations, destination landing weight limitations, and destination or alternate landing distance limitations
- The total aircraft takeoff weight as computed under approved procedures
- Documentation that the aircraft is properly loaded with the center of gravity within approved limits Passenger names, unless such information is maintained elsewhere by the operator. Operators may have systems which result in weight and balance "finals" being transmitted to the flight crew via ACARS or company radio frequencies after the aircraft has departed the gate or ramp area. This information, which normally consists of adjusted takeoff gross weight and trim settings, is critical to the crewmembers for accurately determining the takeoff data. Inspectors should ensure that the information contained on the load manifest accurately portrays the actual passenger and cargo weights.

(5) **Airworthiness Release Area**

An airworthiness and/or maintenance release should be prepared in accordance with the procedures set forth in the operator's manual and should certify that the following conditions have been met:

(ii) Any work performed on the aircraft was performed in accordance with the requirements of the operator's manual

(iii) All items required to be inspected were inspected by an authorized person who determined that the work was satisfactorily completed

(iv) No known condition exists that would make the aircraft un-airworthy

(v) Concerning the work performed, the aircraft is in condition for safe operation

Note: *The airworthiness release should be signed by an authorized certificated mechanic, repairman, or an authorized official of a repair station that is responsible for the completed work. A certificated repairman should sign the release or entry only for the work for which he is employed and certificated to accomplish. Additionally, the operator may state in the operator's manual that the signature of an authorized certificated mechanic or repairman constitutes certification that the preceding conditions have been met without the requirement of restating all the required conditions.*

(6) **Other Required Documents Inspection Area**

This inspection area refers to such items as pertinent weather forecasts, NOTAM's, fuel slips, route certification requirements (if applicable), and other documents that are issued to flight crewmembers before each flight.

44.4 REPORT PROCEDURES

The *Air Operator Operations and Flight Records Inspection Checklist/Report* form, which is included at the end of this chapter, will be used for recording the results of such inspections.

LCAA
Air Operators and Flight Records Checklist/Report

Operator	Date	Location	Inspector

S = Satisfactory; **U** = Unsatisfactory; **P** = Potential; **I** = Information; **E** = Exceeds

A. GENERAL

1. **Availability**
2. **Practicality**
3. **Currency**
4. **Legibility**
5. **Accuracy**
6. **Conformity**

B. FLIGHT PLAN

1. **Contains the Following Elements:**
   - Type Aircraft
   - Aircraft Registration No.
   - Flight No.
   - PIC Name
   - Point of Departure
   - Proposed Time of Departure
   - Proposed Route, Cruising Altitude, and TAS
   - Minimum Flight Altitude & Aerodrome Oper. Minima
   - Point of Intended Landing
   - ETA
   - Amount of Fuel on Board (in Hours)
   - Alternate Airport (If Required)
   - Numbers of Persons on Board

C. DISPATCH/FLIGHT RELEASE

1. **Contains the Following Elements:**
   - Aircraft Identification No.
   - Trip or Flight Number
   - Departure Airport
   - Intermediate Stops
   - Type of Operation (IFR or VFR)
   - Minimum Fuel Required
   - Weather Reports and Forecasts

D. LOAD MANIFEST

1. **Contains the following Individual weights:**
   - Aircraft
   - Fuel and Oil
   - Cargo and Baggage
   - Passengers
   - Crew
2. **Contains Maximum Allowable T/O Weight in Consideration of:**
   - Runway Limits
   - Climb Limits
   - En Route Performance
   - Landing Weight Limits
   - Alternate Distance
3. **Reflects Total Takeoff Weight**
4. **Reflects Load Distribution and CG Limits**

E. AIRWORTHINESS RELEASE

1. **Certifies Following Conditions Have Been Met**
   - Work Performed on Aircraft IAW Operator' Manual
   - Completed Items Inspected by Authorized Individual
   - Aircraft is Airworthy and in Condition for Safe Operation

F. OTHER REQUIRED DOCUMENTS

1. **Weather Reports, Forecasts, Summaries, and Depictions**
2. **Fuel Slips**
3. **NOTAMs**
4. **Other**

REMARKS: (Continue on back if necessary):

OVERALL RESULT: ☐ **Satisfactory** ☐ **Unsatisfactory**

INSPECTOR'S SIGNATURE

CHAPTER 17: MAIN BASE CREW FLIGHT DUTY AND REST TIME RECORDS INSPECTIONS

45.1 BACKGROUND AND OBJECTIVES

(a) ICAO Annex 6. Part 1, Section 4.2.10 states that an operator shall formulate rules limiting the flight time and duty periods of flight crew members. These rules shall also make provisions for adequate rest periods and shall be such as to ensure that fatigue occurring either in a flight or successive flights or accumulated over a period of time due to these and other tasks, does not endanger the safety of the flight. These rules shall be approved by the state of the operator and included in the operations manual. Attachment A to Part 1 of Annex 6 discusses points which States should consider when formulating flight, duty time, and rest period rules for their operators.

(b) Annex 6 Section 4.2.10 further states that an operator shall maintain current records of flight time of all flight crew members. Paragraph 5.4.3.2 of the ICAO *Manual of Procedures for Operations Certification and Inspection* recommends that flight records be examined to check compliance with statutory regulations relating to flight and duty time limitations.

45.2 GENERAL INSPECTION PRACTICES AND PROCEDURES

(a) At the commencement of the inspection, inspectors should receive a briefing from responsible employees of the operator regarding their flight and duty time record keeping system in its entirety. The inspector should then review a sufficient number of records for individual crewmembers to ensure that regulatory requirements are being met. Figures which are used in flight time summaries (cumulative totals) to track required time intervals should be checked against original flight logs or similar records, to ensure that times for specific flights are being accurately recorded and totaled. Similarly, flight times which appear on flight logs and summaries may be checked against maintenance or payroll records for continuity.

(b) If individual crewmembers participate in more than one type of operation for which different regulatory requirements exist (e.g. domestic vs. international), the inspector should determine that the operator has devised methods to ensure that corresponding flight and duty time limitations are not exceeded.

45.3 INSPECTION AREAS

(a) Operators must develop methods for recording and monitoring flight and duty time for flight crew members to ensure that regulatory limitations are not exceeded. Such a record keeping system should have the following attributes:

(1) **Adequacy**. The recordkeeping forms which the operator uses are adequate for recording essential information which the LCAA requires.

(2) **Practicality**. The operator's method for recording flight time for individual crew members should be easy for employees to use. Forms which are developed for this purpose should be unambiguous and easy to complete. If an operator uses ACARS or a similar system for reporting flight and duty time, personnel should be properly trained in its use.

(3) **Accessibility and Security**. Data regarding flight and duty time should be readily accessible to personnel which have responsibility for monitoring compliance with various time intervals. Records should be secure from tampering by unauthorized individuals.

(4) **Currency.** Data available to personnel responsible for ensuring that individual crewmembers do not exceed regulatory or contractual requirements should be updated expeditiously. The system used by the operator should provide that schedulers and/or flight control personnel are immediately aware when daily totals may be exceeded. Flight time totals from written crew logs must be expeditiously transmitted to the scheduling or flight control office, so that weekly and monthly totals, where required, may be promptly updated.

(5) **Accuracy.** The system should faithfully track daily flight and duty time for crewmembers, and accurately reflect totals for longer prescribed time intervals.

(6) **Conformity.** The records should reflect conformance with regulatory flight and duty time limitations.

45.4 INSPECTION REPORTING PROCEDURES

The *Air Operator Flight and Duty Time Inspection Checklist/Report* form which appears at the end of this section reflects the areas discussed in paragraph 6.3 above and will be used for all such inspections. Inspectors should indicate the scope of their records inspections in the comments section of the report form (i.e. number of individual airmen records inspected, time interval covered, cross-checks with other records).

LCAA

Air Operators Operations Flight and Duty Time Records Checklist/Report

Operator	Date	Location	Inspector

S = Satisfactory; **U** = Unsatisfactory; **P** = Potential; **I** = Information; **E** = Exceeds

1. ADEQUACY. Comments:	
2. PRACTICALITY. Comments:	
3. ACCESSIBILITY and SECURITY. Comments:	
4. ACCURACY. Comments:	
5. CURRENCY. Comments:	
6. CONFORMITY. Comments:	
REMARKS: (Continue on back if necessary):	
OVERALL RESULT: ☐ **Satisfactory** ☐ **Unsatisfactory**	**INSPECTOR'S SIGNATURE**

CHAPTER 18: MAIN BASE TRAINING PROGRAMME INSPECTIONS

46.1 BACKGROUND AND OBJECTIVES

(a) Part 1 to ICAO Annex 6 Paragraph 9.3 requires that operators establish and maintain a ground and flight training program, approved by the state of the operator, which ensures that all flight crew members are adequately trained to perform their assigned duties. In order to accomplish this, the operator should provide adequate ground and flight training facilities and adequately trained instructors. Inspections of the many components of such a training program are an important part of an overall LCAA surveillance program. These inspections are best planned and executed over a period of time that permits a thorough and ongoing evaluation of an operator's training program. This chapter describes a surveillance strategy for training program inspections that is modular in design and that can be flexibly implemented into an overall surveillance plan.

(b) The primary objective of a training program inspection is to ensure that the operator's overall training program continues to provide quality instruction by conducting an evaluation of the training program curriculums, facilities, instructors, Check Airmen courseware, instructional delivery methods, and testing and/or checking procedures, which were previously approved by the LCAA.

(c) Training program inspections also provide the LCAA with the ability to require changes in an operator's training program, to rescind an initially or finally approved program (or segments of that program), and to maintain a current and accurate appraisal of the program's status and ability to train competent and capable flight crewmembers.

46.2 TRAINING PROGRAM INSPECTIONS AREAS

(a) Training programs vary widely in their complexity depending on the operator's size, aircraft fleet diversification, number of crewmembers, training locations, and scope of operation. Training program inspections involve much more than simply observing and evaluating training in progress. Four primary inspection areas may be identified as areas to be observed and evaluated:

(1) Training manual or curriculums

(2) Courseware

(3) Instructional delivery methods

(4) Testing and checking

(b) Information concerning these four areas is as follows:

(1) **Training Curriculums Inspection Area**

Inspectors should evaluate the operator's approved training curriculums. Inspectors should ensure that these training curriculums are consistent with regulatory and general guidance for the type of operation being conducted. The inspector should evaluate the curriculums and their associated outlines that are currently being used by the operator. The inspector should ensure that the curriculum outlines contain enough descriptive detail to ensure that the main features of each principal subject will be addressed during the course of instruction. The LCAA will maintain a copy of each initially or finally approved training curriculum for every operator. This is usually the best source document available for inspectors to review before evaluating currently

used curriculum outlines. Inspectors should evaluate each of the operator's curriculum outlines to ensure that the subject matter is current and appropriate in depth and scope, and also to gain an adequate understanding of what kinds of subject matter will be observed and evaluated during later phases of the inspection. The following is a list of basic curriculums typical of both domestic and international operators. These should be reviewed for all crewmember positions and dispatchers:

(i) Basic Indoctrination Aircraft Ground Training

(ii) Emergency Training

(iii) Flight Training (flight crewmembers only)

(iv) Differences Training (if applicable)

(v) Recurrent Training

(vi) Requalification Training

(vii) Special Curriculums

(viii) Qualification Curriculums

Special curriculums include training which is in addition to the regulatory training requirements, such as crew resource management (CRM) training. Qualification curriculums include training of pilots to conduct CAT II and III approaches and various route qualification courses.

(2) **Courseware Inspection Area**

Inspectors should examine an operator's courseware, such as lesson plans, instructor guides, computer software or audiovisual programs, and hand-outs. The courseware should be examined to ensure that it is consistent with the curriculum outline and be organized to permit effective instructional delivery. The courseware should also be examined to ensure it is current, effective, and germane to the various instructional delivery methods.

(3) **Instructional Delivery Methods Inspection Area**

Inspectors should ensure that the operator's various instructional delivery methods, such as lectures, workshops, slide tape presentations, training devices, and simulators are sufficient to convey information to a student. These methods should be evaluated to ensure that they are effectively creating a transfer of learning to the student, that they are being maintained as originally approved, and that they are updated as necessary.

(4) **Testing and Checking Inspection Area**

Part 1 of Annex 6, Paragraph 9.3.1 requires that a training program shall include examinations to determine competence. Paragraph 9.4.4 requires that pilots receive proficiency or 1EEE. Observing testing and checking is the primary method by which an inspector can determine if learning has occurred.

In this inspection area the inspector can evaluate the operator's standards, reflected by pass/fail rates, which determine whether a desired level of knowledge and skill has been acquired by the students being trained. The inspector should examine the

operator's training records to ensure the operator's regulatory compliance with testing, checking, and other training program requirements. Additionally, Flight Instructor and instructor programs should be examined as the functional quality control element within this area.

46.3 GENERAL TRAINING PROGRAM INSPECTION PRACTICES AND PROCEDURES

(a) The five primary inspection areas previously outlined should constitute the core areas of an operator's training program that were evaluated by the LCAA before the issuance of final approval. These inspection areas apply to all operators and vary only in their complexity from operator to operator. In certain situations, there may be a requirement for the LCAA to initiate a "special emphasis" training program inspection of one or more specific areas. This type of inspection may be initiated for several reasons such as an incident, an accident, or a series of deficiencies discovered through trend analysis of surveillance data. Special emphasis training program inspections usually focus on a limited area, such as use of checklists or windshear training, and are relatively short in duration.

(b) Before the inspector can inspect any particular training program area, the inspector should introduce themselves to the instructor or Check Airmen conducting the training and display his LCAA credentials. The inspector should then inform them that an LCAA inspection of training in progress will be conducted. Inspectors should refrain from active participation in the training being conducted and should make every effort not to influence the training environment or the instruction in the subject matter. If an inspector has comments on any of the areas of training being conducted, the inspector should reserve the comments for the debriefing with the instructor or Check Airmen after the training session.

46.4 SPECIFIC TRAINING PROGRAM INSPECTION PROCEDURES

The four areas discussed in 7.2 above must be carefully considered before granting approval to a training curriculum. Because these areas are broad in terms of scope and context, their key elements have been organized into 10 categories in order to provide a flexible inspection strategy. This approach permits the many components of an operator's training program to be broken down into manageable inspection areas, and provides inspection data which lends itself to meaningful interpretation. This means the Inspector has more latitude in terms of scheduling specific types of inspections, maximizing inspector resource capabilities, and in determining the sequence of the various types of inspections to be conducted.

An inspection of any of the following categories may be conducted as an independent inspection, or categories may be combined when examining a specific training curriculum in detail.

2.4.1 Training Curriculum

(a) The inspector should evaluate each of the operator's approved training curriculums, primarily for format and content. Ideally, each should contain the following:

(1) *Title*. Each curriculum should be appropriately titled with a specific crewmember position (or positions, such as PIC/SIC) and the relevant category of training.

(2) *List of Effective Pages*. Each curriculum should have a list of effective pages and a means to record revisions

(3) *Approvals*. Each page of the curriculum (for finally approved programs) should be signed, dated, and stamped by an operations inspector.

(4) *Detail*. Each curriculum should include comprehensive outlines of course material contained therein in sufficient detail to determine adequacy of coverage.

(5) *Hours*. The total number of training hours should be specified for each curriculum

(6) *Objective*. Each curriculum should list a training objective

(7) *Currency*. The information contained in each curriculum should be current and may not be contrary to the regulations or safe operating practices. Company bulletins, notices, information letters and other means of conveying new or revised information to crewmembers should have been, or are in the process of being, incorporated into the appropriate curriculums

(8) *Conformity*. Scope and content of each curriculum should conform to LCAA and ICAO requirements

2.4.2 Instructor Courseware

(a) In this module, the inspector should evaluate the operator's instructor guides, lesson plans, and/or training outlines. Ideally, this courseware should have the following characteristics:

(1) *Title*. Instructor courseware should be clearly titled for the appropriate curriculum

(2) *Detail*. It should contain sufficient information to permit the instructor to conduct detailed instruction for each subject area

(3) *Usability/Practicality*. It should contain instructional material in a logical order and sequence that is relatively easy to use

(4) *Consistency*. It should be consistent with the curriculum outline

(5) *References*. It should have references to the applicable operator's manuals and publications

(6) *Validation*. Instructor courseware should include some means for determining that the students are properly assimilating the instructed material (such as "responder" panels, multiple-choice questions, or in-class exercises)

2.4.3 Student Courseware

(a) In this module, the inspector should evaluate the information in all of the various "self teaching" training mediums such as video tapes, audiovisual (carousel-type) slide presentations, computer-based training presentations, programmed learning publications, and home-study materials, as follows:

(1) *Consistency*. The information should be consistent with the curriculum outline It should be current with information in the operator's manual and other publications

(2) *Detail*. It should have sufficient detail to ensure that students can clearly understand the applicable subject area

2.4.4 Training Facilities/Environment

(a) The inspector should evaluate the operator's training facilities as follows:

(1) The training facilities and the instructional environment should be conducive to learning by providing adequate seating space for students, storage areas for training materials, and facilities for instructors to prepare their lessons

(2) The facility should be free of distractions which adversely affect instructional delivery, such as excessive temperatures, extraneous noise, poor lighting, and cramped classrooms and/or work spaces

2.4.5 Ground Instructors

(a) The inspector should evaluate the quality of instruction provided by ground instructors as follows:

(1) *Training*. Instructors should be adequately trained in accordance with the operator's approved program and be appropriately documented in the operator's training records

(2) *Knowledge*. Instructors should be knowledgeable in the specific area of instruction and in the operator's training policies and procedures, form completion requirements.

(3) *Instructional Technique and Delivery*. Instructors should exhibit satisfactory instructional methods and techniques. They should be able to present the material in a logical, clear, and organized manner

(4) *Adherence*. Instructors should follow the applicable lesson plans, guides or other training aids to ensure the material is properly presented as designed.

2.4.6 Flight Instructors

(a) In addition to the areas listed in paragraph 7.4.5. above, RRRRs should be evaluated in the following specific areas:

(1) *Proficiency*. Flight instructor(s) should be highly proficient in the operation of aircraft, flight simulators and training devices, and in the performance of maneuvers and procedures which they are teaching.

(2) *Briefing*. Flight instructor(s) should provide a thorough preflight briefing (for flight training devices, flight simulators, or the aircraft) on all maneuvers and procedures that will be conducted

(3) *Debriefing*. Flight instructor(s) should provide a thorough post-flight debriefing to review each individual student's performance during a training session

(4) *Evaluation*. Flight instructor(s) should properly evaluate student progress and provide or recommend additional training when necessary

(b) During evaluations of flight training, the instructor should adhere the events listed for the specific flight training curriculum. Instructors may deviate when necessary, however, to accommodate events from previous or subsequent flight training sessions. Every effort should be expended to alleviate artificiality from the training session and the instructor should be accorded a certain measure of flexibility to ensure the highest level of realistic training is achieved.

2.4.7 Training Aids and Equipment

(a) The inspector should evaluate the operator's training aids and equipment such as audiovisual equipment, systems mock-up boards, panel layouts, ground training devices, instructor station equipment, student responders (if applicable), and other related items, in terms of equipment. Ideally, the following conditions will prevail:

(1) *Instructions for use*. Any equipment designated to be used for "self teaching" purposes (such as CBT platforms) should have clear operating instructions readily available for the student's use

(2) *Condition*. All equipment used in the training program should operate and function in good working order (Replacement parts or components such as slide projector lamps, should be readily available.)

(3) *Fidelity*. Systems panels, layouts, boards, or mock-ups (such as aircraft exit mock-ups) should accurately represent the designated aircraft

2.4.8 Flight Simulators and Training Devices

(a) It is not intended for the inspector to conduct an extensive flight evaluation of the training device or simulator but rather to evaluate the following: the general condition of the equipment, any significant periods of "down time" (and the reasons for the down time), and the operator's general ability to maintain the equipment as approved. The inspector should evaluate the operator's flight simulators and/or flight training devices, as follows:

(1) *Approval*. Flight simulators and flight training devices should be approved by the Liberia CAA and periodically inspected. Inspectors should review the operator's record of simulator evaluations and approval information to ensure compliance.

(2) *Condition*. Flight simulators and flight training devices should function at the same level as when they were initially approved. Inoperative or defective equipment should be properly documented along with the training events that are affected by the inoperative or defective components.

(3) *Publications*. Published instrument approach charts, SID's, STAR's, en route charts, and other information (such as aircraft performance manuals and takeoff/landing data charts) which are contained within the simulator or training device should be current and in generally good condition.

2.4.9 Check Airmen and Examiners

(a) The inspector should evaluate the following elements:

(1) *Staffing*. The number of Check Airmen and examiners employed by the operator should be adequate for the level of training and checking activity

(2) *Training and qualification*. Training records should reflect that Check Airmen and Examiners are qualified in accordance with applicable regulations and the operator's approved training program

(3) *Standardization*. The operator should have an effective standardization program to ensure that Check Airmen and examiners conduct oral and flight examinations in a uniform manner

(4) *Level of activity*. The number of examinations that a Check Airmen or examiner conducts each year should be sufficient to maintain currency and proficiency in performing the performance of his duties.

46.5 INSPECTION REPORTING PROCEDURES

This chapter has provided a broad overview of the many areas of an operator's training program that must be evaluated during the Inspector's annual work program. The *Air Operator Training Inspection Checklist/Report* form which appears at the end of this chapter will be used for all such inspections. It contains the major inspection areas which were discussed in this chapter, broken down into the categories described in paragraph 7.5 of this chapter. This form is designed to be flexible, and appropriate sections should be completed to indicate the scope or content of an inspection which has been conducted. The scope of the inspection should be indicated in the "curriculum" block at the top of the page (e.g. "B-747-400 Pilot Recurrent Ground Training").

LCAA
Air Operator Operations Training Program Inspections Checklist/Report

Operator	Date	Location	Inspector
Curriculum or Segment Inspected			

S = Satisfactory; **U** = Unsatisfactory; **P** = Potential; **I** = Information; **E** = Exceeds

A. TRAINING CURRICULUM

1. Appropriate Title(s)
2. List of Effective Pages
3. Record of Revisions
4. Liberia CAA Approved
5. Sufficient Detail
6. Training Hours Specified
7. Objective(s) Stated
8. Currency
9. Conformity

B. INSTRUCTOR COURSEWARE

1. Title
2. Detail
3. Usability/Practicality
4. Consistency
5. References
6. Validation

C. STUDENT COURSEWARE

1. Consistency
2. Detail
3. Validation

D. TRAINING FACILITIES AND ENVIRONMENT

1. Classroom Space
2. Storage Space
3. Instructor Areas
4. Lighting
5. Noise and Temperature

E. GROUND INSTRUCTORS

1. Training
2. Knowledge
3. Instructional Technique and Delivery
4. Adherence

F. FLIGHT INSTRUCTORS

1. Training
2. Knowledge
3. Proficiency
4. Instructional Technique and Delivery
5. Adherence
6. Briefings
7. Debriefings
8. Evaluation

G. TRAINING AIDS AND EQUIPMENT

1. Instructions for Use
2. Condition
3. Fidelity

H. FLIGHT SIMULATORS AN TRAINING DEVICES

1. Approval
2. Condition
3. Publications

I. CHECK AIRMEN

1. Staffing
2. Training and Qualification
3. Standardization
4. Level of Activity

J. ORAL AND PRACTICAL TEST STANDARDS

1. Conform to Accepted Int'l Standards
2. Comply with Regulations

K. QUALITY CONTROL

1. Training Adequately Monitored
2. Utilizes Progress Evaluations
3. Training Folders

REMARKS: (Continue on back if necessary):

OVERALL RESULT: ☐ **Satisfactory** ☐ **Unsatisfactory**

INSPECTOR'S SIGNATURE

CHAPTER 19: MAIN BASE TRAINING AND QUALIFICATION RECORDS INSPECTION

47.1 BACKGROUND AND OBJECTIVES

(a) Paragraph 9.6.5.6 of the ICAO *Manual of Procedures for Operations Certification and Inspection* states that inspectors should ensure that records are available for each company employee who is required to receive flight, ground, simulator, emergency, or operational control training to confirm that:

(1) Appropriate training prescribed in the approved training program has been conducted as and when required

(2) such records reflect each individual's attendance, participation, aptitude, or performance

(3) adequate and accurate records are being maintained and retained in accordance with applicable regulations

(b) The following terminology is used in this section:

(1) a *file* refers to a collection of records of training events for a specific employee which is maintained in a folder, binder, or computer database.

(2) a *record* refers to an individual record of a training or qualification event which is completed by the instructor or examiner and placed in an employee file.

(3) *Flight operations personnel* refers to pilots, flight engineers, flight operations officers (dispatchers), and flight attendants

(c) An operator must develop forms and maintain records which are sufficient to establish the qualification and currency of each flight operations person for the position that he or she occupies at the time the inspection is conducted. By reviewing training records, the inspector should be able to establish a chronology of training and qualification events which render an individual fully qualified to perform the duties to which he is presently assigned, in accordance with LCAA regulations and the operator's approved training manual. Each record of a training event in an individual's file should contain the following information as a minimum:

(1) Specific type of training or qualification conducted - the terminology employed should reflect that contained in the operator's approved training program, (e.g. "A-330 Pilot Recurrent Ground Training")

(2) Date(s) on which training was conducted

(3) Employee's name

(4) Employee's position

(5) Results of training or qualification - complete or incomplete, satisfactory or unsatisfactory, etc.

(6) Instructor or examiner's name and signature

47.2 TRAINING AND QUALIFICATION REQUIREMENTS

(a) ICAO minimum standards require the following types of training and qualification to be conducted:

(1) **Flight Crew Members**

(i) CAO Annex 6, Part 1, Section 9.3 specifies the following minimum training and qualification requirements for flight crew members:

- Ground and flight training in the type(s) of airplane(s) on which the flight crew member serves, including emergency and abnormal situations.
- Training on dangerous goods or hazardous materials.
- Recurrent training covering the above areas. Recurrent flight training may be accomplished in a simulator or by a proficiency check
- Recency of experience
- Route and airport qualifications for PIC's.
- Pilot proficiency check

(ii) ICAO Annex 1 requires flight crew members to:

- Be medically qualified and have appropriate endorsements.
- Be properly licensed and to have passed Airplane Class and Type Rating examinations when appropriate.

(2) **Flight Operations Officers**

(i) ICAO Annex 1 requires flight operations officers to be properly licensed. ICAO Annex 6 Chapter 10 recommends that they receive training in the following areas:

- The operators operations manual(s)
- Radio, navigation systems, and loading instructions for airplanes which the operator uses
- all other features of the operation which are pertinent to his duties

(ii) Annex 6, Chapter 13 further recommends that flight operations officers complete qualification flights every twelve months, should be retrained in their assigned duties if absent for more than twelve consecutive months, and demonstrate their competency to perform their assigned duties.

(3) **Flight (Cabin) Attendants**

(i) ICAO Annex 6, Chapter 12 specifies that Cabin Attendants who are assigned emergency functions receive training in the following areas:

- Duties and functions to be performed during inflight emergencies and emergency evacuations
- Emergency and life saving equipment such as life jackets, life rafts, evacuation slides, fire extinguishers, oxygen equipment, and first aid kits
- pressurization and oxygen requirements when operating above 10,000 feet
- other crew member's assignments
- dangerous goods

47.3 SPECIFIC INSPECTION AREAS

(a) Records should be examined to determine the following:

(1) **Adequacy**. The record-keeping forms which the operator uses are adequate for recording essential information which is required by the LCAA.

(2) **Practicality**. The forms are easy to fill out and to understand.

(3) **Accessibility and Security**. Records are easily accessible to the operator's staff who are required to use them, and secure from tampering by unauthorized individuals.

(4) **Accuracy**. Details of individual training events are properly recorded by instructor's and examiners.

(5) **Currency**. individual files have been expeditiously updated following completion of a training or qualification event.

(6) **Conformity**. Employees are properly licensed and rated, have received all required training and checks, and are fully qualified to be used in their specific crewmember or operations control positions

(b) Of the above areas to be examined, *conformity* is by far the most time consuming. Specific training events and qualifications which must be documented in a crewmember's file will vary according to the Act requirements, the specific position in which the crewmember is utilized, the type of operation in which he is employed (extended range, charter, etc.), and the specific requirements of the approved training program. Before commencing a training records inspection, the inspector should become thoroughly familiar with the operator's approved training program and understand how ICAO and Act requirements are met by the various training courses and checking requirements set forth by the operator.

(c) To avoid confusion, it is recommended that inspectors develop individual checklists of requirements which are specific to the operator and position being examined. For example, after becoming familiar with the training requirements which have been approved for an operator of B-737-400, the inspector may wish to develop checklists which list specific qualifications and training requirements which he would expect to find documented for B-737-400 captains. This checklist might include such courses as company indoctrination, initial ground and flight training as a first officer on the B-747-400, upgrade flight and ground training to the captain position on the BAE-146, and transition training to the captain position on the B-737-400. He would also expect to find a record of the captain's license, medical qualification, most recent base or proficiency check, together with route

qualifications, area navigation training, security, hazardous materials, etc. etc.. A similar checklist for a BAE-142 First Officer would be considerably abbreviated.

(d) It should not be necessary for an operator to maintain records of recurrent qualifications which are dated beyond a time when it can be established through cross checking other records that an individual was utilized in a specific capacity on a specific date. For example, it would be superfluous to require and operator to maintain recurrent qualification records for a PIC during the entire course of his employment if the operator is not required to keep operations and flight records beyond six months.

47.4 INSPECTION PROCEDURES

Specific training courses which meet the requirements listed in paragraph 8.2 above may vary widely between operators. The *Air Operator Training Records Inspection Checklist/ Report* which appears at the end of this section contains the areas listed in paragraph 8.3 above, and will be used for all such inspections. Inspectors should clearly identify on the form the types of training and/or qualification records which were examined (e.g. "Flight Attendant", " B-737-400 PIC", etc.).

LCAA
Air Operators Training and Qualification Records Checklist/Report

Operator	Date	Location	Inspector
Type of Records Inspected			

S = *Satisfactory;* **U** = *Unsatisfactory;* **P** = *Potential;* **I** = *Information;* **E** = *Exceeds*

1. ADEQUACY. Comments:	
2. PRACTICALITY. Comments:	
3. ACCESSIBILITY and SECURITY. Comments:	
4. ACCURACY. Comments:	
5. CURRENCY. Comments:	
6. CONFORMITY. Comments:	
REMARKS: (Continue on back if necessary):	
OVERALL RESULT: ☐ **Satisfactory** ☐ **Unsatisfactory**	**INSPECTOR'S SIGNATURE**

CHAPTER 20: EN ROUTE COCKPIT INSPECTIONS

48.1 BACKGROUND AND OBJECTIVES

(a) The primary objective of cockpit en route inspections is for an inspector to observe and evaluate the in-flight operations of a certificate holder within the total operational environment of the air transportation system. En route inspections are one of the most effective methods of accomplishing air transportation surveillance objectives and responsibilities. These inspections provide the LCAA with an opportunity to assess the following elements of the aviation system that are both internal and external to an operator:

(1) Elements of the aviation system which are *internal* to the operator and can be observed during cockpit en route inspections include:

(i) Crewmembers

(ii) Operator manuals and checklists

(iii) Use of MEL's and CDL's

(iv) Operational control functions (dispatch, flight-following, flight-locating)

(v) Use of checklists, approved procedures, and safe operating practices

(vi) Crew coordination/cockpit resource management

(vii) Cabin safety

(viii) Aircraft condition and servicing

(ix) Training program effectiveness

(2) Elements of the aviation system which are *external* to the operator and can be observed during en route inspections include:

(i) Airport surface areas

(ii) Ramp/gate activities

(iii) Airport condition and construction Aircraft and vehicle movements

(iv) ATC and airway facilities

(v) ATC and airspace procedures

(vi) Instrument Approach Procedures (IAP's), SID's, and STAR's

(vii) Navigational aids

(viii) Communications

48.2 GENERAL COCKPIT EN ROUTE INSPECTION PRACTICES AND PROCEDURES

(a) Before conducting en route inspections, it is important that inspectors become familiar with the operating procedures and facilities used by the operator. Inspectors can obtain such information by reviewing pertinent sections of the operator's manuals, by obtaining briefings from other inspectors who are acquainted with the operator's procedures and facilities, or through training and briefing by the operator. The inspector is encouraged to comment in the inspection report on any procedure believed to be deficient or unsafe. it is also recommended that he debrief the flight crew at the conclusion of the flight regarding any deficiencies which he intends to note in the inspection report. The inspector must use good judgment, however, when debriefing crewmembers about procedures that may be specifically approved for that operator.

(b) Each operator should have established procedures to be used by inspectors for scheduling the cockpit observer's seat (jumpseat). LCAA regulations and policy and the operator's procedures must allow inspectors to have free, uninterrupted access to the jumpseat. Inspectors should make jumpseat arrangements as far in advance as possible. However. since inspectors may have sudden changes in schedule and may not always be able to provide the appropriate advance notice, operator's procedures should be flexible so as to permit use of an available jumpseat on short notice.

(c) Whenever possible, inspectors should plan cockpit en route inspections in a manner that will avoid disruption of operator-scheduled check flights. Should an inspector arrive for a flight and find a line check or other type of check in progress, He must determine whether or not it is essential that the cockpit en route inspection be conducted on that flight. If it is essential, the operator should be so advised and should make the jumpseat available to the inspector. If the cockpit en route inspection can be rescheduled and the objectives of the inspection can still be met, the inspector should make arrangements to conduct the inspection on another flight. When a required check ride is being conducted by a Check Airmen from the forward jumpseat and the en route inspection is essential, the inspector should occupy the second jumpseat, if one exists. When it is essential that the en route inspection be conducted on an aircraft that does not have two jumpseats, the Check Airmen must occupy a pilot seat and the inspector should occupy the jumpseat. In such a case, the flight crewmember not being checked must either be seated in the cabin or not accompany the flight.

(d) An inspector should begin a cockpit en route inspection a reasonable amount of time before the flight (approximately 1 hour) by reporting at the operations area or at the gate, according to established procedures. He should complete any necessary jumpseat paperwork for inclusion in the operator's passenger manifest and weight and balance documents. After the inspector introduces himself to the flightcrew, he should inform the PIC of his intention to conduct an en route inspection. The inspector should then request that the flightcrew present their airman certificates and medical certificates or endorsements to him for examination. It is desirable that the inspector review with the flight crew prior to boarding the aircraft such items as weather documents, NOTAMs, planned route of flight, dispatch or flight release documents, and information about the airworthiness of the aircraft.

(e) Sometimes an inspector cannot meet and inform the PIC of the intention to conduct an en route inspection before boarding the aircraft. In such a case, as soon as possible after boarding the aircraft the inspector should introduce himself to the PIC, present his identification, and inform the flightcrew of his intention to conduct a cockpit inspection. In this situation a flight attendant will usually be at the main cabin entrance door. One of the flight attendant's primary duties should be to ensure that only authorized persons enter the aircraft such as ticketed passengers, caterers, and authorized company personnel. Therefore, an inspector should be prepared to present his identification and any applicable jumpseat paperwork to the flight attendant before entering the cockpit. When boarding the aircraft, an

inspector should also avoid unnecessarily impeding passenger flow or interrupting flight attendants during the performance of their duties. Also, during this time an inspector may have ample opportunity to observe and evaluate the operator's carry-on baggage procedures and the gate agent's or flight attendant's actions concerning oversized items. Once inside the cockpit, the inspector should request an inspection of each flight crewmember's airman and medical certificates when convenient. He should review the maintenance logbook to determine the airworthiness of the aircraft, and request that the flightcrew provide him with the trip documents for his review when it does not interfere with their duties.

(f) The inspector must wear a headset during the flight. During cockpit en route inspections, inspectors must try to avoid diverting the attention of flight crewmembers performing their duties during "critical phases of flight." Inspectors must be alert and point out to the flightcrew any apparent hazards such as conflicting traffic. If during an en route inspection, an inspector becomes aware that the flightcrew is violating a regulation, company policy, or an ATC clearance, the inspector should immediately inform the PIC of the situation.

48.3 SPECIFIC EN ROUTE COCKPIT INSPECTION PROCEDURES

(a) Once situated in the cockpit, the inspector should check the jumpseat oxygen and emergency equipment (if applicable) and connect the headset to the appropriate interphone system. The PIC or a designated crewmember should offer to give the inspector a safety briefing. If the PIC does not make such an offer, the inspector should request a briefing. It is important that the inspector monitor all radio frequencies being used by the flightcrew to properly evaluate ATC procedures, flightcrew compliance, transmission clarity, and radio phraseology. The monitoring of these frequencies also ensures that the inspector does not inadvertently interfere with any flightcrew communications. Inspectors should continuously monitor these frequencies to remain aware of the progress of the flight.

(b) Inspectors should consider all inspection areas, both internal and external to the operator, to be of equal importance. The inspection is divided into four categories as follows:

(1) Crewmembers
(2) Flight Conduct
(3) A i r p o r t
(4) ATC/Airspace

(c) The *Air Operator En route Inspection Checklist/Report form* which appears at the end of this chapter will used to conduct en route inspections. This form follows the format of the discussion which follows:

(1) **Crewmembers**

This inspection area applies primarily to flight crewmembers, but cabin crewmembers may also be observed in certain areas such as coordination with the cockpit. Inspectors should evaluate such items as flight crewmember knowledge, ability, and proficiency by directly observing crewmembers performing their respective duties and functions. The checklist/report form contains a list of reminder items which should be observed in the crewmember inspection area. These items are not all-inclusive but represent the types of items which are common to several phases of flight and which inspectors should evaluate during a typical cockpit en route inspection.

Inspectors will have the opportunity to evaluate crewmembers in the following areas which are common to many or all phases of flight:

(i) *Licenses* - valid as follows:

- Proper ratings and endorsements for the positions occupied
- Medical certificate or endorsement appropriate and current

(ii) *Knowledge* - demonstrated knowledge in the following specific areas:

- AOM - Specific aircraft limits, systems, equipment, procedures, and flight profiles
- FOM or equivalent - General company policy and procedures related to crew conduct and type of operation
- LCAA regulations and ICAO International standards and recommended practices - appropriate to the type of operation conducted
- Airway Manuals - Interpretation and application of approach plates, STARS, SIDS, airport and line station information, communications, etc.
- MEL/CDL - Familiarization to the extent that specific items can be expeditiously located and information properly interpreted and applied.
- Checklists - cockpit flow and responses to challenges in normal checklists, knowledge of where to locate and an understanding of the philosophy behind abnormal and emergency procedures.
- General - body of aviation knowledge commensurate with level of airman certificate and experience: ATC, weather, aerodynamics, powerplants, radar interpretation, etc.

(iii) *Proficiency* - skill in applying the above knowledge to specific phases of flight and in manipulating aircraft controls and systems at the assigned crewmember position

(iv) *Situational awareness* - related to proficiency but refers to apparent or demonstrated awareness (particularly in critical phases of flight) of such factors as traffic flow, weather, position and configuration of airplane, airspeed, altitude, rate of descent, etc.

(v) *Conformity* - to provisions of AOM, FOM, other company bulletins and instructions, LCAA regulations, ICAO standards and practices, ATC practices and specific instructions, MEL/CDL, and airway manual. Attention should be given to:

- Remaining at duty stations per regulatory guidance
- Use of seatbelts and safety harnesses
- Use of oxygen
- Use of corrective lenses (glasses) when required by medical certificate

(vi) *Manuals* - available, current, and adequate (information regarding latest changes can be obtained from the carrier prior to the inspection)

(vii) *Coordination* - between cockpit crewmembers (cockpit resource management) and between cockpit and cabin crewmembers.

(viii) *Use of checklists* - prompt and consistent use of required checklists during appropriate phase of flight

(ix) *Required equipment* - flashlight, cockpit key, headset, and other such personal items which may be required by LCAA regulations or company policy.

(2) **Flight Conduct**

This inspection area is by far the largest and most complex. It relates to specific phases of flight which can be observed during an en route inspection. The checklist/report form contains a list of the items that should be evaluated by inspectors during these phases of flight. These items are not all-inclusive and in some cases (such as "powerback") may not be applicable to the flight conducted. Inspectors are, however, encouraged to observe, evaluate, and report on as many of these items as possible. Some of the areas that should be observed and evaluated during each specific flight phase are as follows:

(i) *Preflight:* Inspectors should determine that the flight crew has all the necessary flight information including the appropriate weather, dispatch, or flight-release information; flight plan; NOTAM's; and weight and balance information. MEL items should be resolved in accordance with the operator's MEL and appropriate maintenance procedures. Inspectors should observe the flight crew performing appropriate exterior and interior preflight duties in accordance with the operator's procedures.

(ii) *Predeparture:* Inspectors should observe the flight crew accomplishing all predeparture checklists, takeoff performance calculations, and required ATC communications. If a Flight Management System (FMS) is installed, setup and data entry should be observed. If INS or Omega is installed, data entry and verification should be observed. Flight crew should verify fuel quantity indications against amount delivered and/or physically check tanks. The flight crew should use coordinated communications (via hand signals or the aircraft interphone) with ground personnel. Crew should properly monitor engine starts. Often pushback or powerback clearance must be obtained from the appropriate ATC or ramp control facility.

(iii) *Taxi*: The following areas should be observed during taxi:

- Adherence to taxi clearances
- Control of taxi speed and direction
- Observance of taxiway signs and markings
- Cockpit setup and checklist
- Conduct of a pre-takeoff briefing in accordance with the operator's procedures

- Awareness of other ground movement (aircraft and vehicles)
- Use of appropriate checklists

When weight and balance information is transmitted to the aircraft by company radio during the outbound taxi, the flight crew should follow the operator's procedures as to which crewmember receives the information and completes the final takeoff performance calculations, and which crewmember monitors the ATC frequency.

(iv) *Takeoff:* The takeoff procedure should be accomplished as outlined in the operator's manual. Inspectors should observe and evaluate the following items or activities during the takeoff phase:

- Aircraft centerline alignment
- Application of power to all engines
- Takeoff power settings
- Use of crosswind control techniques
- Flightcrew call-outs and coordination
- Adherence to appropriate takeoff or V speeds
- Rate and degree of initial rotation
- Use of flight director, autopilot, and autothrottles (FMS if applicable)
- Gear and flap retraction schedules and limiting airspeeds
- Use of radar and weather avoidance if applicable

(v) *Climb:* The climb procedure should be conducted according to the operator's manual. Inspectors should observe and evaluate the following items and activities during the climb phase of flight:

- Compliance with the ATC departure clearance or with the appropriate published departure
- Adherence to proper climb profile
- Airspeed/Mach control
- Navigational tracking/heading control
- Powerplant control
- Use of radar and weather avoidance, if applicable
- Use of autoflight systems
- Pressurization procedures, if applicable

- Sterile cockpit procedures
- Cockpit vigilance and traffic awareness
- After-takeoff checklist

(vi) *Cruise:* Procedures used during cruise flight should conform to the operator's procedures. Inspectors should observe and evaluate the following areas during the cruise phase of flight:

- Cruise mach/airspeed control
- Navigational tracking/heading control
- Use of radar, if applicable
- Turbulent air procedures, if applicable
- Monitoring flight plan (actual vs. planned fuel consumption and flight time)
- Awareness of mach buffet and maximum performance ceilings
- Coordination with cabin crew
- Compliance with oxygen requirements, if applicable

(vii) *Descent:* Procedures used during descents should conform to the operator's procedures. Inspectors should observe and evaluate the following areas before and during the descent phase of flight:

- Vigilance - proper visual lookout and crewmembers at stations except to attend to physiological needs.
- Compliance with ATC clearances and instructions
- Use of auto flight system including FMS is applicable
- Descent planning
- Weather/ATIS check
- Crossing restriction requirements
- Navigational tracking/heading control
- Use of radar, if applicable
- Awareness of Vmo/Mmo speeds and other speed restrictions
- Compliance with ATC clearance and instructions

- Use of autoflight systems including FMS is applicable
- Pressurization control, if applicable
- Weather considerations
- Altimeter settings
- Briefings, as appropriate
- Coordination with cabin crew
- Sterile cockpit procedures
- Vigilance
- Descent checklist

(viii) *Approach:* Procedures used during the selected approach (instrument or visual) should be accomplished according to the operator's manual. Inspectors should observe and evaluate the following areas during the approach phase of flight:

- Approach checklists
- Approach briefings, as appropriate
- Compliance with ATC clearances and instructions
- Navigational tracking/heading and pitch control
- Airspeed control, Vref speeds
- Flap and gear configuration schedule
- Use of flight director, autopilot, autothrottles, and FMS if installed
- Compliance with approach procedure
- Stabilized approach in the full landing configuration
- Sink rates
- Flight crew call-outs and coordination
- Transition to visual segment, if applicable

(ix) *Landing:* Procedures used during the landing maneuver should conform to those outlined in the operator's maneuvers and procedures documents. Inspectors should observe and evaluate the following areas during the landing phase of flight:

- Before-landing checklist
- Powerplant control land engine spool-up considerations

- Threshold crossing height (TCH)
- Aircraft centerline alignment
- Use of crosswind control techniques
- Sink rates to touchdown
- Powerplant control/engine spool-up considerations
- Touchdown and rollout
- Thrust reversing and speedbrake procedures
- Use of autobrakes, if applicable
- Use of nosewheel steering
- Braking techniques
- Diverting attention inside the cockpit while still on the runway
- After-landing checklist

(x) *Arrival:* Taxi, pre-arrival and parking procedures should conform to the operator's procedures as outlined in the appropriate manual. Inspectors should evaluate crew use of visual parking aids and/or parking directors, parking speed, and accomplishment of after-landing checklists, ground crew parking, and passenger deplaning procedures.

(xi) *Post-arrival:* Inspectors should observe and evaluate the flight crew complete post flight duties such as post flight checks, aircraft logbook entries, and flight trip paperwork completion and disposition.

(3) **Airports**

This inspection area pertains to the various elements of airports which may be observed during flights such as runways, taxiways, ramps, and aircraft ground movements. Inspectors should observe and evaluate as many of these elements as possible:

(i) Condition of surface areas such as ramp and gate areas, runways, and taxiways (cracks, depressions, weeds, overgrowth, etc.)

(ii) Lighting of runways, taxiways, ramp, and other traffic areas

(iii) Taxiway signs, markers, sterile areas, and hold lines

(iv) Ramp vehicles, equipment, movement control

(v) Aircraft servicing, parking, and taxi operations

(vi) Obstructions, construction, and surface contaminants (such as ice, slush, snow, fuel spills, rubber deposits)

(vii) FOD

(viii) Snow control for international flights, if applicable

(ix) Security and public safety

(x) Navaids, approach lighting, and communications

(4) **ATC/Airspace**

The "ATC/airspace" inspection area pertains to the various elements of Air Traffic Control and national or international airspace systems. These elements should be observed and evaluated by inspectors during en route inspections. From an operational standpoint, these evaluations are a valuable information source which can be used not only to enhance safety with respect to air traffic control and the airspace system, but also to enhance the effectiveness of en route and terminal facilities and procedures.

During cockpit en route inspections, inspectors have the opportunity to observe and evaluate ATC operations and airspace procedures from the vantage point of the aircraft cockpit. Inspectors may observe and evaluate the following areas from the cockpit:

(i) Radio frequency congestion, overlap, or blackout areas

(ii) Controller phraseology, clarity, and transmission rate

(iii) ATIS validity, clarity, etc.

(iv) Departure and approach instructions

(v) Clearance deliveries for responsiveness and acceptable, safe clearances

(vi) Aircraft separation standards

(vii) Controller situational awareness - traffic flow, conflicts, aircraft flight characteristics, priorities, etc.

Although these four general inspection areas cover a wide range of items, they are not the only areas that can be observed and evaluated during cockpit en route inspections. Inspectors may have the opportunity to evaluate many other areas, such as line station operations and flight control procedures. Such functions can often be observed before a flight begins, at en route stops, or at the termination of a flight. Inspectors should include any remarks regarding such areas in the comments section of the checklist.

LCAA

Air Operator En Route Cockpit Inspection Checklist/Report

Operator	Flight No.	Date	From	To	Type Aircraft	Registration No.
Captain		**License No.**	**First Officer**	**Other Flight Crew**	**Senior Cabin Attendant**	**Inspector**

S = Satisfactory; **U** = Unsatisfactory; **P** = Potential; **I** = Information; **E** = Exceeds

A. CREWMEMBERS

1.___ **Licenses**
2.___ **Knowledge**
- AOM
- FOM
- Civil Aviation Regulations
- Airway Manual
- MEL/CDL
- Checklists
- General

3.___ **Proficiency**
4.___ **Situational Awareness**
5.___ **Conformity**
6.___ **Manuals**
7.___ **Coordination**
8.___ **Use of Checklists**
9.___ **Required Equipment**

B. FLIGHT CONDUCT

1.___ **Preflight**
- Flight Plan
- Dispatch Release
- Weather
- Notams
- Load Information
- MEL Items
- Exterior and Interior Aircraft Inspection

2.___ **Predeparture**
- Checklists
- Performance Calculations
- ATC Communications
- Groundcrew Coordination
- Pushback
- Engine Start
- Use of FMS if installed

3.___ **Taxi**

4.___ **Takeoff**
- Alignment
- Power Application
- Power Setting
- Crosswind Control
- Callouts/Coordination
- V Speeds
- Rotation
- FD/AP/AT/FMS
- Gear/Flap Retraction
- Radar/Weather Avoidance

5.___ **Climb**
- ATC Compliance
- Climb Profile
- Airspeed/Mach Control
- Navigation
- Powerplant Control
- Radar/Weather Avoidance
- FD/AP/AT/FMS
- Pressurization Procedures
- Sterile Cockpit
- Vigilance

6.___ **Cruise**
- Mach/Airspeed Control
- Navigational Tracking/ Heading Control
- Radar
- Turbulence Procedures
- Flight Plan/Fuel Monitoring
- Performance Awareness
- Coordination with Cabin
- O_2 Use
- Vigilance
- ATC Compliance

7.___ **Descent**
- Planning
- Crossing Restrictions
- Navigational Tracking/ Heading Control
- Sterile Cockpit
- Checklist
- Vigilance

8.___ **Approach**
- Briefing
- ATC Compliance
- Navigation
- Airspeed/V_{ref} Control
- Gear and Flap Extension
- FD/AP/AT/FMS
- Approach Procedure
- Sinkrates
- Stabilized Approach
- Callouts/Coordination
- Transition to Landing

9.___ **Landing**
- Before-landing Checklist
- TCH
- Centerline Alignment
- Crosswind Control
- Sinkrates
- Power Control
- Touchdown and Rollout
- Speedbrake/Thrust Reverse
- Braking
- Nosewheel Steering
- Vigilance

10.___ **Arrival**
- Taxi
- Parking
- Groundcrew Coordination

11.___ **Post-Arrival**
- Postflight Checks
- Logbooks/Paperwork

C. AIRPORTS

• Adherence to Clearances • Speed/Directional Control • Observance of Taxiway Signs and Markings • Cockpit Setup/Checklist • Pre-takeoff Briefing • Awareness/Vigilance **C. AIRPORTS (Continued)** 9.___ Security and Public Safety 10.___ Navaids/Approach Lighting and Communications **D. AIR TRAFFIC CONTROL** 1.___ Radio Frequencies • Congestion • Overlap • Blackout Areas	• Radar • Speed Awareness • ATC Compliance • FD/AP/AT/FMS • Pressurization Control • Altimeter Settings • Briefings • Coordination with Cabin2. Controller Communications • Phraseology • Clarity • Transmission Rate 3.___ ATIS • Clarity • Currency 5.___ Departure and Approach Instructions 7.___ Clearance Deliveries • Responsiveness • Acceptable and Safe Clearances	1.___ Surface Condition 2.___ Lighting 3.___ Signs/Markings 4.___ Ramp Vehicle Control 5.___ Aircraft Movement 6. Obstructions/Construction/ Contaminants 7.___ FOD 8.___ Snow Control 9.___ Aircraft Separation 10.___ Controller Situational Awareness
REMARKS: (Continue on back if necessary):		
OVERALL RESULT: ☐ Satisfactory ☐ Unsatisfactory		**INSPECTOR'S SIGNATURE**

CHAPTER 21: EN ROUTE CABIN INSPECTIONS

49.1 OBJECTIVE OF CABIN EN ROUTE INSPECTIONS

Cabin (en route) inspections are conducted to assess the level of cabin safety in air transportation by the direct observation and evaluation of operations conducted in the aircraft cabin. Cabin inspections provide the LCAA with information concerning flight attendant training programs, operator procedures, and the condition and maintenance of aircraft emergency equipment and furnishings. Cabin inspections, together with cockpit en route inspections, provide the LCAA with a comprehensive assessment of safety in air transportation operations.

49.2 MANAGEMENT OF CABIN EN ROUTE SURVEILLANCE

(a) *Frequency of Cabin Inspections*. An adequate number of cabin en route inspections will be conducted each year on the operators for which the LCAA is responsible. The ICAO *Manual of Procedures for Operations Certification and Inspection* recommends that enroute inspections, including cabin enroute inspections, be conducted at least once each quarter for each operator. In accordance with Chapter 1 of this part, four cabin inspections will be conducted annually for each aircraft type which the airline operates.

(b) *Procedures Training for Inspectors.* An operator's procedures are to be designed to have cabin en route operations conducted in accordance with government regulations and with standard operating practices. A wide variation may exist, however, in the manner in which different operators meet these requirements. It is difficult for an inspector when observing a cabin crew, to determine if the crew is carrying out their duties in the prescribed manner unless the inspector is knowledgeable in the operator's procedures. Whenever possible, the LCAA will arrange for its flight operations inspectors to attend the cabin procedures training of the operators for which they have surveillance responsibilities. The LCAA will request the assistance of the operator in conducting such training.

49.3 CABIN INSPECTION AREAS

(a) Areas which should be covered during cabin inspections may be grouped into three broad categories as follows:

(1) *Aircraft*. The "aircraft" inspection area applies to the general airworthiness of the aircraft and the condition and availability of aircraft cabin emergency equipment and furnishings.

(2) *Crewmember*. The "crewmember" inspection area applies to flight attendants who perform duties during a cabin inspection. Inspectors should evaluate such items as crewmember knowledge, ability, and proficiency by directly observing flight attendants performing their respective duties and functions.

(3) *Flight Conduct*. The "flight conduct" inspection area refers to items which relate to a particular phase of the flight such as stowage of girt bars, passenger briefings, turbulent air security, and stowage of carry-on luggage. Although these three general inspection areas cover a wide range of items to be inspected during cabin en route inspections, they are not the only areas that can be observed and evaluated by inspectors. Inspectors may have the opportunity to evaluate many other areas such as line station operations and aircraft servicing. These types of areas can often be observed before beginning a flight, at en route stops, or at the termination of a flight.

49.4 GENERAL CABIN EN ROUTE INSPECTION PRACTICES AND PROCEDURES

(a) Inspectors should make prior arrangements with the operator, in accordance with established procedures, for occupying cabin seats on revenue flights. Inspectors should board the aircraft before passengers are boarded to allow adequate time to inspect the aircraft's emergency equipment, furnishings, flight attendant manuals, and to discuss duties, responsibilities, and normal and emergency procedures with cabin crewmembers. Inspectors should first introduce themselves to both the captain and lead flight attendant and then inform them that an inspection is being conducted.

(b) When the flight has ended, the inspector should thoroughly debrief the lead flight attendant, other applicable flight attendants, and if possible, the captain, of all pertinent observations and of any deficiencies noted during the inspection. If the inspector believes that he has discovered deviations from provisions of the Regulations and other LCAA policy, he should inform the crew of his finding.

(c) An inspector should make an effort to be cordial and non-confrontational with the crewmembers he is evaluating. Crewmembers should initially be briefed to continue their assigned duties as if the inspector was not present. The inspector should then request that a crewmember provide a manual and be available for a brief conversation about the crewmember's duties at a time that is convenient and chosen by that crewmember.

(d) Inspectors should avoid interfering with the crewmember's assigned duties. They should consider that flight attendants are particularly busy during passenger loading, and should avoid distracting crewmembers during this time. They can, however, make useful observations, such as evaluating the gate agent's or flight attendant's actions concerning carry-on baggage and oversized items.

(e) Some operators require flight attendants to accomplish a preflight inspection of at least some of the emergency and safety equipment in the cabin. In such a case, the inspector should observe the flight attendant inspect the equipment and then follow up by inspecting a few pieces of the equipment himself. An inspector can determine whether the operator requires a flight attendant to conduct preflight by referring to the flight attendant manual. When a flight attendant preflight equipment inspection is not required by the operator, the inspector should inspect the equipment. If there is not enough time to inspect the emergency equipment before the flight, the inspector may choose to inspect it after the flight. Some emergency equipment may be inspected during the cruise portion of the flight, but the inspector should exercise care and discretion when doing so. Passengers should not be disturbed or alarmed. The inspector should refrain from examining such items as exits, slide pressure gauges, fire extinguishers, or portable oxygen bottles in view of passengers while in flight.

49.5 SPECIFIC CABIN EN ROUTE INSPECTION PRACTICES AND PROCEDURES

(a) A cabin enroute inspection is divided into the following areas:

(1) **Aircraft**

The aircraft emergency equipment and furnishings should preferably be inspected before passenger boarding. Some specific items or activities that may be evaluated in the "aircraft" inspection area are as follows:

(i) Cabin Logbooks, or Equivalent (for open discrepancies, carry-over items, and items of cabin equipment needing repair or replacement)

(ii) Required Placards and Signs (exit signs; seat belt/no smoking signs; emergency/safety equipment placards; seatbelt/flotation equipment placards at seats; weight restriction placards; no-smoking placards; door-opening instruction placards; etc.)

(iii) Fire Extinguishers (for correct type, number, and location; if properly serviced, tagged, and stowed)

(iv) Portable Oxygen Bottles (for correct number and location; if properly serviced, tagged, and stowed; for condition of mask, tubing, and connectors)

(v) Protective Breathing Equipment (if installed) for correct location, properly stowed and sealed

(vi) First Aid Kits and Emergency Medical Kits (for correct number and location; if properly tagged and stowed)

(vii) Megaphones (for correct number and location; if operable and properly stowed)

(viii) Passenger Briefing Cards (if at each passenger seat position; if appropriate to aircraft; if they contain the necessary information including emergency exit location and operation, slides, oxygen use, seatbelt use, brace positions, flotation devices; appropriate pictorials for extended overwater operations including ditching exits, life preservers, and liferaft or slideraft inflight location)

(ix) Passenger Seats (if not blocking emergency exits; if seat cushions are intact; for latching mechanism on tray tables; if self-contained and removable ashtrays; if seatbelts are operational - not frayed or twisted; presence and condition of life preservers if required)

(x) Passenger Oxygen Service Units (if closed and latched without any extended red service indicators or pins)

(xi) Flight Attendant Station (for seat retraction/restraint system operation - if retracts and is properly secured; if seatbelts are not frayed or twisted; seat cushions intact; for correct position of headrest; if PA system and interphone are operable; for aircraft-installed flashlight holders)

(xii) Galleys (for latching mechanisms (primary and secondary); tie-downs; condition of restraints; padding; proper fit of cover and lining of trash receptacles; hot liquid restraint systems; accessibility and identification of circuit breakers and water shut-off valves; non-skid floor; debris or corrosion of girt bar; "clean" stationary cart tie-downs (mushrooms); if galley carts in good condition and properly stowed; lower lobe galley (if applicable) emergency cabin floor exits should be passable and not covered by carpeting)

(xiii) Galley Personnel Lift (if applicable) (should not move up or down with doors open; for safety interlock system; for proper operation of activation switches)

(xiv) Lavatories (for smoke alarm, no-smoking placards, ashtrays; for proper fit of cover and lining of trash receptacles; for automatic fire extinguisher system)

(xv) Stowage Compartments (for weight restriction placards; for restraints and secondary latching mechanisms; for compliance with stowage requirements; for accessibility to emergency equipment; for carry-on baggage provision)

(xvi) Crew Baggage (if properly stowed)

(xvii) Emergency Lighting System (for independence from main system; if operable; for floor proximity escape path system)

(xviii) Exits (for general condition; door seals; girt bar and brackets; handle mechanisms; signs and placards; slide or slide raft connections and pressure indications; lights)

(2) **Crewmembers**

The inspector should determine if the required number of flight attendants are aboard. When evaluating flight attendant knowledge and competency, inspectors should ask clear and concise questions that are related primarily to the use of emergency equipment and operational duties and responsibilities. At least one flight attendant manual should be reviewed for currency and for determining the manual's accessibility when flight attendants are performing assigned duties. If time permits (for example during a meal service), the inspector should review the manual for items such as the location of aircraft emergency equipment, emergency and non -normal procedures, communications with the cockpit, and required briefing and PA announcements. To evaluate cabin crewmember knowledge and level of competency, inspectors should ask the flight attendants a limited number of questions, including asking for an explanation of safety procedures from the operator's manual. Flight attendants are not normally required to know the contents of LCAA regulatory guidance. The operator's procedures should be designed so that when a flight attendant complies with the company manual the flight attendant is also in compliance with the regulations. Inspectors and should make a careful distinction between inadequate knowledge on the part of the crewmember and a deficient company procedure. Inadequate knowledge may reflect a deficiency in training. Some appropriate areas that inspectors may ask flight attendants to explain are as follows:

(i) The term "captain's authority" and crew coordination procedures in case of an emergency

(ii) How to remove a fire extinguisher or portable oxygen bottle, its method of operation, how to determine its maintenance and inspection status, and how to stow the extinguisher or oxygen bottle correctly into its restraint mechanism

(iii) The company procedure for dealing with lavatory or galley fires

(iv) Which type of fire extinguisher should be used on galley (grease/electrical) fires, cabin furnishings fires (seats or floor), lavatory or galley waste container fires (paper or plastic)

(v) The procedures for documenting (in aircraft or cabin logbooks, when available) the need for items of cabin equipment to be repaired, adjusted, or replaced

(vi) How to manually deploy a passenger service unit, including how to ensure adequate oxygen flow

(vii) Normal and emergency procedures for communications with the cockpit

(viii) Normal and emergency procedures for opening/deploying exit doors and slides or sliderafts, including how to deal with adverse conditions such as wind, fire, or a "tilted" aircraft (for example, in a collapsed landing gear situation)

(ix) The location of company-required personnel equipment such as operational flashlight (could be installed in the aircraft), appropriate sections of the flight attendant manual, a cockpit key

(x) The signs of decompression, including mask dropping, a decrease in temperature, noise, and physiological symptoms

(xi) The company procedure for flight attendants to follow in the event of a rapid depressurization (recommended procedure is to immediately don the nearest mask, sit down and fasten seatbelt or, hold on to something solid and wait for instructions from the cockpit)

(xii) The "brace for impact" position and the appropriate cockpit signal to assume the position

(xiii) The procedures to be followed during operations in turbulent air, including securing galley service carts, keeping passengers seated, cockpit coordination, and galley security

(xiv) The procedures to be followed in the event of unruly, abusive, or threatening passengers

(xv) Sterile cockpit procedures

(xvi) What to do if the aircraft is descending for landing and a flight attendant is unable to stow a galley cart (notify the cockpit; PIC shall make decision to land or go-around)

(xvii) If a flight is conducted as an extended-overwater flight, the procedures for donning of life vests and cabin preparation before a water landing

(xviii) The procedures to be followed during a hijacking, bomb threat, or other potential security problem including the company's specific procedures for notifying the cockpit

(3) **Flight Conduct**

Inspectors should evaluate the cabin crew during each pertinent phase of flight. This evaluation should include noting the flight attendant's adherence to the procedures outlined in the flight attendant manual as well as adherence to regulations and safe operating practices. The evaluation of the various phases of flight will be accomplished as follows:

(i) *Predeparture:* An inspector should observe flight attendants accomplishing tasks such as supervising the boarding of passengers and properly stowing carry-on baggage. The passenger-loading door should not be closed until a required crewmember verifies that each piece of carry-on luggage is properly stowed. Items that cannot be stowed should be processed as checked baggage.

Additionally, carry-on baggage should not cover, or in any way interfere with, aircraft emergency equipment in the overhead compartments.

The departure briefing may be given any time before takeoff, provided the flight attendants have sufficient time to take their assigned positions and to secure their restraint systems. The quality, clarity, and volume level of the PA system should be evaluated by the inspector during the briefing. Passenger briefings should contain the following areas of information:

- Smoking: Company policy (in conformance with government regulations). No smoking when the no-smoking signs are illuminated; requirement for passenger compliance with lighted signs and posted placards; prohibited in lavatories including a statement regarding prohibition against tampering with, disabling, or destroying any smoke detector in an airplane lavatory (if installed)

- Exit Locations: The preferred method is to physically point out exits in a meaningful way

- Seatbelt Use: Including instructions on how to fasten and unfasten seatbelts

- Flotation Devices: Including the location and use of the means of flotation

- Tray Tables and Seatbacks: Position for takeoff and landing

- Baggage: How to be properly stowed for takeoff and landing

- Oxygen Use: Should point out the location of and demonstrate the use of the oxygen mask

- Extended Overwater Operations: Including the location, donning, and use of life preservers, liferafts (or sliderafts) and other means of flotation
- Special Passenger Briefings (if applicable): For persons who are handicapped or warrant some other special kind of attention, and for the individuals assisting them

If someone requires the assistance of another person in an emergency evacuation, both persons should be briefed by a flight attendant on the location and path to the exits and on the most appropriate manner for assisting the person so as to prevent pain or injury. Inspectors should refer to the flight attendant manual for company policy and procedures for the handling of handicapped persons.

(ii) *Taxi and Takeoff:* During taxi operations and before takeoff, flight attendants should perform only those duties that are safety-related and that require movement around the cabin. A list of those items or activities which should be evaluated during taxi and takeoff is as follows:

- Each exit is closed and locked with the girt bars properly attached (if applicable)

- All stowage compartments are properly secured and latched closed

- The galley is secured with no loose items; all serving carts are properly restrained in the proper floor attachment points; the cockpit door is closed or open in accordance with the operator's manual
- Passenger seatbelts and shoulder harnesses, if installed, are secured
- That operators have procedures for ensuring passengers are seated before the aircraft is moved
- During the actual takeoff, each flight attendant is seated with restraint systems properly fastened; any unoccupied flight attendant seat is properly secured for takeoff; signal from cockpit to flight attendants is properly given
- After takeoff, and either before or immediately after the seatbelt illumination is shut off, it is recommended that an announcement is made that passengers should keep their seatbelts fastened, even when the seatbelt sign is turned off.
- If the flight is to be a smoking flight, when the no-smoking sign is turned off, an announcement is made that smoking is permitted in certain rows and prohibited in the aisles and lavatories

(iii) *En Route/Cruise Procedures:* During the en route phase of flight, several areas may be evaluated by the inspector to note whether they conform to regulations and to safe operating practices:

- Signs (monitoring of seatbelt and no-smoking signs to ensure passenger compliance)
- Crew Coordination (for flight crew and cabin crewmember communications - routine and/or emergency)
- Turbulent Air Procedures (including the proper restraint of serving carts, galley furnishings and equipment, passenger seatbelts fastened, and instructions from the cockpit being followed).
- Passenger Handling (including not serving alcoholic beverages to intoxicated passengers; handling abusive or disruptive passengers; handling handicapped or ill passengers; and handling those passengers who for other reasons require special attention)

(iv) *Approach and Landing:* During the approach and landing phases of flight, flight attendants should prepare the cabin for arrival by performing at least the following actions:

- Ensuring carry-on baggage is stowed and all seat backs and tray tables are upright and stowed respectively
- Removing all food, beverages, or tableware from each passenger seat location
- Observing "sterile cockpit" procedures
- Ensuring that passenger seatbelts are fastened

- Being seated before landing at assigned duty positions, with appropriate restraint systems fastened, for a uniform distribution among the floor level exits to provide the most effective egress of passengers in the event of an emergency evacuation.

(v) *Landing/Arrival:* After landing, the cabin crew should prepare the aircraft for arrival by performing duties such as the following:

- Before the captain has turned off the seatbelt sign, observing operator procedures for ensuring passengers remain in their seats with seatbelts fastened

- Upon arrival at the gate and after the seatbelt sign has been turned off, preparing the exits for deplaning

- Ensuring the appropriate complement of flight attendants remain onboard the aircraft at en route stops (when passengers remain onboard the aircraft to proceed to another destination)

49.6 REPORTING PROCEDURES

The *Air Operator Cabin Inspection Checklist/Report form* included at the end of this chapter contains a list of reminder items for the specific inspection areas, which should be observed and evaluated. This form follows the format of the preceding discussion in this chapter. It is necessarily general in nature and intended to cover all aircraft types and conditions of flight, thus, every item may not apply to a particular flight.

CABIN ENROUTE INSPECTION/CHECKLIST

Record ID:	Inspector		Type of Operation	Activity Checklist Number - 1602
Date Accomplished	#Issues	Operator		Tracking #
Flight #:	To:	From	AC Registration	AC Type:
PIC #:	SCA Crew #		Other CA#	

***Instructions for Use*:**

1. Check YES column if you reviewed the record, procedure or event and have no comment.
2. Check NO column if you reviewed the record, procedure or event and have a comment.
3. Check column if you did not review the record, procedure or event *or you do have adequate information to make a valid comment*
4. Enter the letter "N" in the column, if the line item is not required in this particular situation.
5. Enter any notes on reverse side regarding a NO answer for transfer to the Safety Issues Resolution Report.
6. For later reference, precede any notes with the appropriate question number.

Yes	No	N/A		
				CABIN CREW
			1.	Number of required cabin crews?
			2.	Cabin crews certificates?
			3.	Cabin crew assigned duty-flight-rest times?
			4.	Cabin crew manuals?
			5.	Cabin crew seats and safety harness?
			6.	Cabin crews properly secured at duty stations during periods when emergency evacuation may be anticipated?
				CABIN CREW MANUALS AND EQUIPMENT
			7.	Cabin crew manual – general procedures?
			8.	Cabin crew manual – aircraft-specific details and procedures?
			9.	Cabin crew manual – location of emergency equipment?
			10.	Cabin crew manual – specific wording of emergency briefings?
			11.	Bomb search checklist?
			12.	Recommended contingency location for an explosive device?
			13.	Cabin crew personal torch?
				FLIGHT DECK AND CABIN COMMUNICATIONS
			14.	Use of crew resource management techniques?
			15.	Response to flight deck signals?
			16.	Knowledge of interphone signals?
			17.	Knowledge of coded communication?
			18.	Response to turbulence warnings?
			19.	Use of proper identification signals for flight deck door opening?
				PASSENGER CONTROL
			20.	Normal boarding duties?
			21.	Briefing of handicapped passengers?
			22.	Use of child restraint devices?
			23.	Handling of disorderly passengers?
			24.	Handling of incapacitated passengers?
			25.	Refueling with passengers procedures?
				SEATING AND BAGGAGE CONSIDERATIONS

			26.	Head count taken and communicated to pilot?
			27.	Verification of seat assignment?
			28.	Passenger seating vs center-of-gravity considerations?
			29.	Closet and overhead bin loading within limits and volume?
			30.	Carry-on baggage properly stowed during taxi, takeoff and landing?
			31.	Proper securing of cargo in the passenger compartment?
				ROUTINE PASSENGER BRIEFING CONTENT
			32.	Routine no-smoking briefing?.
			33.	Routine seat belt briefing?
			34.	Routine emergency exits briefing?
			35.	Routine use of oxygen briefing?
			36.	Routine use of flotation devices briefing?
			37.	Routine carry on baggage stowage briefing?
			38.	Routine survival equipment briefing?
			39.	Routine landing preparation briefing?
			40.	Routine after landing briefing?
			41.	Instructions for transiting ramp to terminal?
			42.	Routine turbulence briefing?
				EMERGENCY BRIEFING CONTENT
			43.	Planned emergency evacuation preparation?
			44.	Immediate bracing position instructions?
			45.	Planned ditching preparation?
				BRIEFING METHODOLOGY
			46.	Acceptable pacing and communication of information?
			47.	En Route Cabin Inspections
			48.	Content and use of video briefing?
				SECURING CABIN INSPECTION
			49.	First flight emergency equipment checks?
			50.	Pre-flight cabin preparation (pax cards/belts/package search)?
			51.	Pre-taxi cabin secure inspection?
			52.	Pre-takeoff cabin secure inspection?
			53.	Turbulence cabin secure inspection?
			54.	Pre-landing cabin secure inspection?
			55.	After landing cabin secure inspection?
			56.	Securing of serving carts?
				DOORS/EMERGENCY EXITS
			57.	Manual door closing procedures?
			58.	Assisted door closing procedures?
			59.	Slide arming procedures?
			60.	Normal assisted door opening procedures?
			61.	Slide disarming procedures?
			62.	Normal manual door opening procedures?
			63.	Emergency door opening procedures?
			64.	Other emergency exit opening procedures?
				EMERGENCY EQUIPMENT
			65.	Fire extinguisher(s) location, use and limitations?
			66.	Oxygen location, use and limitations?
			67.	Protective breathing equipment location, use and limitations?
			68.	First aid kit(s) location and contents?
			69.	Medical kit location and contents?
			70.	Life raft location, movement, deployment and contents?
				EMERGENCY PROCEDURES
			71.	Cabin fire procedures?
			72.	Galley fire procedures?
			73.	Toilet fire procedures?

			74.	Immediate ditching procedures?
			75.	Emergency evacuation tasks and procedures?
			76.	Planned ditching procedures?
			77.	Aircraft hijacking procedures?
			78.	Assisting with an incapacitated pilot?
				MISCELLANEOUS
			79.	Dangerous goods recognition?
			80.	Security procedures?

RECOMMEND ACCEPTANCE: YES NO (Reasons cited below)

REMARKS & OBSERVATIONS

INSPECTOR SIGNATURE

Additional comments attached ☐ =>

LCAA
Air Operator Cabin Inspection Checklist/Report

Operator:		Flight No.:	Date	From:	To:
Aircraft Type:	Registration No.	Captain:	Senior Cabin Attendant:		Inspector:

S= Satisfactory; **U**= Unsatisfactory; **N**=Not Observed

A. AIRCRAFT EQUIPMENT

1. **Required Signs and Placards**
2. **Logbooks**
   1. Open items
   2. Carryover items
   3. Cabin Items
3. **Fire Extinguishers**
   4. Correct Type
   5. Number
   6. Location
   7. Serviced
4. **Megaphones**
   8. Number
   9. Location
   10. Tested
5. **Portable O_2 Bottles**
   11. Number
   12. Service
   13. Location
   14. Condition Mask/Hoses
6. **PBE**
   15. Properly Stowed
   16. Sealed
7. **PAX Briefing Cards**
   17. At Each Seat
   18. Required Information
8. **PAX Seats**
   19. Emergency Exits
   20. Condition
   21. Ash Trays
   22. Seatbelts/Tray Tables
   23. Life Preservers
9. **PAX O_2 Service Units**
   24. Operational
   25. Service Pins
10. **F/A Station**
    26. Retracts
    27. Seatbelts/Inertial Locks
    28. PA and Interphone
11. **Galleys**
    29. Latch Mechanisms
    30. Restraints, Tiedowns, Covers
    31. Cleanliness/Corrosion
    32. Lifts/Elevators
    33. Water quality
12. **Lavatories**
    34. Signs/Lights
    35. Smoke Alarms
    36. Trash Containers
    37. Extinguishers
13. **Stowage Areas**
    38. Latch Mechanisms
    39. Access to Equipment
14. **Emergency Lighting**
    40. Tested/Operable
    41. Floor/Escape Path
15. **Exits**
    42. Controls/Seals
    43. Girt Bar and Brackets
    44. Signs/Symbols
    45. Rafts/Lanyards

B. FLIGHT ATTENDANTS

1. **Crew Compliment**
   46. Initial Boarding
   47. En Route Stops
2. **Coordination with Cockpit**
3. **Knowledge**
   48. PIC Authority
   49. Cabin Fires
   50. Cabin Logbook
   51. PSU
   52. Emergency Communication
   53. with Cockpit
   54. Location and Use of Emergency Equipment
   55. Decompression
   56. Turbulent Air
   57. Unruly PAX
   58. Hijacking
   59. Contents of FA Manual
4. **Ability/Proficiency**
   60. Remove/Demo use of O_2 an and Fire Bottles
   61. Demo Emergency Exit Procedures
   62. Demo "Brace for Impact"
   63. Demo Donning of Life Vests
5. **Personal Equipment**
   64. Cockpit Key and Flashlight
6. **Manual**
   65. Available
   66. Current

C. FLIGHT CONDUCT

1. **Predeparture**
   67. PAX Boarding
   68. Carry-on Baggage
   69. PAX Count
   70. Door Arming
   71. Report to Cockpit
2. **Predeparture Briefings**
   72. Smoking
   73. Exit Locations
   74. Seatbelt Use
   75. Flotation Devices
   76. Stowage of Baggage
   77. Use of Oxygen
   78. Special PAX
3. **Taxi/Takeoff**
   - Cabin Secured
   - FA Position
   - Takeoff Signal
   - Announcement
4. **Cruise**
   - Monitor Signs
   - Crew Coordination
   - Passenger Handling
   - Turbulent Air Procedures
5. **Approach/Landing/ Arrival**
   - Announcements
   - Cabin Secured
   - Passenger Seatbelts
   - FA Position
   - Passenger Monitoring
   - Doors de-armed

(See back for Remarks)

REMARKS:	
OVERALL RESULT: ☐ **Satisfactory** ☐ **Unsatisfactory**	**INSPECTOR'S SIGNATURE**

CHAPTER 22: STATION FACILITIES INSPECTIONS

50.1 BACKGROUND AND OBJECTIVES

(a) Section 9.6.2 of the ICAO *Manual of Procedures for Operations Certification and Inspection* provides that Station Facilities inspections should be conducted periodically at every transit base where the operator uses facilities and services in connection with his operations. Station facility operations may be defined as those support activities required to originate, turn around, or terminate a flight. A Station Facilities inspection encompasses both the operations and the facilities required to conduct them.

(b) The LCAA must schedule regular inspections of existing operator's transit bases and ensure that newly established bases are inspected before the operator commences service to that destination.

50.2 GENERAL INSPECTION PRACTICES AND PROCEDURES

(a) Inspectors conducting station facilities inspections will encounter a wide range of situations and operational conditions. Types of stations may vary from a large facility with a permanently assigned station manager, numerous employees, and various departments, to a facility consisting of one employee and a counter. A station facilities inspection may be conducted to provide for an overall view of the operator's operation or it may be focused on a specific area of interest. Whenever possible, inspections should be conducted when actual departure or arrival operations are in progress, in order to obtain an overview of the operation of the station and the effectiveness of the equipment, services, procedures, and personnel utilized. The direction and guidance provided in this section is general in nature, not all of which may be appropriate in a given situation.

(b) An inspector should carefully plan a station facilities inspection before conducting it. He should review previous inspection reports and review any previously identified discrepancies along with any corrective actions that were taken. Inspectors should coordinate with the station manager ahead of time to establish a date and time for conducting the inspection. Station facilities inspections at small or remote locations may be conducted in conjunction with en route inspections.

(c) Before beginning the inspection, the inspector should request that the station manager provide a briefing on the facility operation, including assigned personnel and operational procedures. In turn, the inspector should discuss the purpose and scope of the inspection with the manager and his staff. This discussion should include the following:

(1) Purpose of the facility inspection

(2) The specific areas to be inspected

(3) Inspection authority (applicable regulation)

(4) The proposed time and place of the exit briefing

(d) The actual inspection should begin after the briefing, with a tour of the facility. The tour should provide the inspector with an overview of the operation and the location of individual sections. The inspector should introduce himself to section supervisors and other employees during the facility tour in order to become familiar with each section or unit. The tour should include those areas of the facility that are utilized by the flight and cabin crews for dispatch, briefing, and flight planning, and those areas that are utilized for passenger loading, cargo loading, weight and balance preparation, and ramp areas.

50.3 SPECIFIC INSPECTION AREAS

(a) There are eleven areas which should be addressed during a station facility inspection:

(1) **Personnel**

The inspector should review the staffing of the facility. During this review the inspector should attempt to determine if the station is adequately staffed and if the assigned personnel are competent in performing their duties. This may be accomplished by the inspector observing individuals as they perform their assigned job tasks. For example, the inspector may review recently completed forms for accuracy and may interview personnel regarding their job functions. Certificates should be sampled for appropriateness and currency for those personnel whose job functions require that they hold certificates. Duty time and length of shifts should be checked for reasonableness. Lengthy duty periods may indicate inadequate staffing.

(2) **Manuals**

The inspector should review the operator's manual or system of manuals for the operation of the facility to determine if the necessary manuals are on hand, current, readily available to personnel, and adequate in content.

(i) *Availability*. The inspector should determine prior to the inspection what manuals should be on hand. As with all inspections, a sound prior knowledge of the operator's organization and procedures is invaluable. During the course of the inspection, the inspector should reach a conclusion as to whether these manuals are sufficient or if station personnel require any additional information which was not available.

(ii) *Currency*. The inspector should also ensure that the operator's manuals are current and that required revisions accurately posted. An inspector should obtain information on the revision status of manuals from the supervising inspector and/or the operator before beginning the inspection.

(iii) *Adequacy*. Each manual or publication should be checked by the inspector to ensure that it includes that information and guidance necessary to allow personnel to perform their duties and responsibilities effectively and safely. Manuals or instructions which are kept at transit stations typically provide guidance and procedures for the following operational areas:

- Refueling procedures
- Aircraft towing or movement requirements/procedures
- Weight and balance procedures
- Operation of and procedures regarding ground service equipment
- Aircraft flight manual (AFM) (for types of aircraft regularly scheduled)
- Personnel training manual
- Current emergency telephone listing
- Accident/incident telephone listing
- Security training and procedures
- Severe weather notification procedures

- Carry-on baggage procedures
- Identification or handling of hazardous materials/procedures
- Instructions and procedures for notification of PIC when there are hazardous materials aboard
- Contract services (if applicable)
- Trip records disposition

(3) **Records**

Records which are required to be kept at the transit base or are kept at the discretion of the operator should be inspected. These may include:

(i) Crew and duty time records

(ii) Trip records

(iii) Communications (ground to aircraft) records.

(4) **Training**

The inspector should review the training conducted for the various classifications of station personnel. Although the Regulations may not require specific training for support personnel, such personnel should receive both initial and recurring training in assigned job functions. This training may be either formal classroom training or on-the-job training. Specific areas of concern are:

(i) Duties and responsibilities

(ii) Hazardous materials

(iii) Passenger handling and protection

(iv) Load planning and weight and balance procedures

(v) Manual backup procedures in case of computer or communications equipment failures

(vi) Aircraft servicing and ramp operations

(vii) First aid and emergency actions

(viii) Communications procedures

(5) **Facility/Equipment/Surface**

The operator's facilities must be adequate to provide safe operating conditions for both aircraft and personnel. The inspector should conduct an evaluation to ensure the following:

(i) *Ramp Areas*. Ramp areas should be clean and clear of foreign objects. The operator should have a regular program for inspecting and cleaning ramp surfaces. In northern climates, adequate facilities must be available for snow removal.

(ii) *Passenger Movement*. Employees and passengers must be protected from jet or prop blast. Inspectors should evaluate passenger handling procedures and facilities and give particular attention paid to the movement of passengers across

ramps. The operator should have established procedures for assisting handicapped passengers, especially when boarding ramps are not used.

(iii) *Lighting*. To ensure that adequate lighting is available and is being used for safe ground operations, inspectors should conduct observations during night operations, if feasible.

(iv) *Hazards and Obstructions*. The operator's management usually assigns to station managers or supervisors the responsibility for maintaining surveillance of the airport and for reporting airport hazards and any new obstructions. Inspectors should determine what responsibilities have been assigned and how those responsibilities are being discharged.

(6) **Conformance**

In each area inspected, inspectors should evaluate the operator's procedures for compliance with provisions of the applicable regulatory guidance. In addition, the operator's employees must comply with the operator's directives. The conformity section on the checklist is not intended to be a separate and distinct inspection function but is intended to serve as a reminder of these elements.

(7) **Flight Control**

The inspection of a station's flight control function should be conducted at a time when actual arrival or departure operations are in progress. This allows the inspector to get an overall view of the effectiveness of the operation and assigned personnel.

(i) When a dispatch or flight-following center is located within the station, an operational control inspection should be conducted in conjunction with the station facilities inspection.

(ii) *Flight Plans*. Operators often exercise operational control from a central location and task the transit stations with related support functions, such as delivering dispatch releases and flight plans to the flightcrew. In this situation, inspectors should determine which functions are the responsibility of the station. Inspectors should evaluate station personnel in the performance of these functions, as well as for the effectiveness of the division of responsibility between the central flight control center and the line station.

(iii) *Load Planning*. Inspectors should determine responsibilities for load planning and weight and balance control. Passenger and cargo weights must be accurate and reliably obtained, collected, and transmitted. Personnel must be adequately trained. Procedures should be simple and effective. When computerized systems are used, there should be adequate back-up provisions for computer failure. If station personnel are assigned to perform manual calculations in case of computer failure, there should a means of ensuring continued proficiency of personnel in making these calculations. Inspectors should ask these individuals to perform a manual calculation and compare the individual's solution to the computer solution.

(iv) *Weather*. Inspectors should determine the official source of weather for the station, and whether or not this source is adequate for the operation and is acceptable to the Liberia CAA.

(v) *NOTAMs*. If the station is responsible for disseminating NOTAMs to flight crews, currency of NOTAMs and the method for updating should be examined

(8) **Servicing**

The servicing area of a station facilities inspection covers routine loading and servicing as opposed to maintenance activities. While operations inspectors should record and

report observations they believe to be maintenance discrepancies, they are not assigned to inspect the maintenance area. Inspectors should evaluate areas of concern to operations personnel, such as the manner in which logbooks are handled and MEL provisions are complied with. The inspector should observe the operator's service operations to ensure that safe practices are conducted and that adequate personnel are available for the required aircraft servicing. The operations that the inspectors should observe may include, but are not limited to, the following:

(i) Fueling (ensuring that proper procedures are being followed)

(ii) Oil and hydraulic servicing (ensuring that proper procedures are being followed

(iii) Potable water servicing (Source of water, cleanliness of storage facilities, and proper handling)

(iv) Deicing (ensuring the correct ratio of glycol/water is being used and that all snow and ice is removed

(v) Marshalling (ensuring safe operation and correct procedures)

(vi) Chocks/Mooring (ensuring chocks are in place, the parking ramp is level, and brakes are set or released)

(9) **Management**

Managers should be thoroughly aware of their duties and responsibilities and those of the personnel they supervise. Areas that inspectors should observe and evaluate include the following:

(i) *Communications*. Throughout the inspection, inspectors should observe managers and supervisors, and evaluate the organizational structure, particularly the effectiveness of vertical and horizontal communications.

(ii) *Contract Services*. If the operator contracts with other companies for station services, the station manager should have established adequate controls over their performance. The manager must assure adequate training is provided to contractor personnel.

(iii) *Contingency Planning*. The station management should be prepared for contingencies. Action plans should be available for use in case of such events as accidents, injury, illness, fuel spills, bomb threats, hijacking, severe weather, and hazardous material spills. Station personnel should be knowledgeable as to the location of these plans. Plans should contain emergency notification checklists and procedures for suspending or canceling operations. Emergency telephone listings should be posted in obvious locations and be clearly legible.

(10) **Security**

Security procedures should be observed with regard to passenger and cargo screening, integrity of sterile areas, and access to ramp and other restricted areas.

(11) **Aerodrome**

Operations inspectors should be alert for obvious deficiencies in aerodrome facilities and condition, such as firefighting equipment, medical services, and ramp and vehicle control. Other areas, such as marking, lighting, obstructions, navigation facilities, approach aids, etc. are more properly observed in the course of conducting other types of inspections such as cockpit en route inspections and ramp inspections.

50.4 STATION FACILITIES INSPECTION REPORT

The *Air Operator Station Facility Inspection Checklist/Report* form at the end of this chapter will be used for all such inspections. It is organized around the same inspection areas which are covered in paragraph 11.3 of this chapter. When completing the report form, discrepancies observed during the inspection should be documented along with any on-the-spot corrective action taken by the inspector. Any recommended corrective actions should also be noted on the report.

LCAA

Air Operator Operations and Flight Records Checklist/Report

Operator	Location.	Date	Aircraft Type(s) (List)	
Management and Supervisory Personnel (List):	Name: Name: Name:	Title: Title: Title:		Inspector

S=Satisfactory; **U**=Unsatisfactory; **P**= Potential; **I**=Information; **E**=Exceeds; **N**=Not Observed; **NA**=Not Applicable

A. PERSONNEL

1. **Adequacy of Staffing**
2. **Competence**

B. MANUALS

1. **Available**
2. **Current**
3. **Adequate Information**

- Refueling Procedures
- Aircraft Towing & Movement
- Weight and Balance
- Operation of GSE
- AFM and Performance
- Training Requirements
- Emergency Phone List
- Accident/Incident Procedures
- Security
- Severe Weather
- Carry-on Baggage
- Hazardous Materials
- Contract Services
- Trip Records Disposition

C. RECORDS

1. **Trip**
2. **Crew and Duty Time**
3. **Communications**

D. TRAINING

1. **Duties and Responsibilities**
2. **Hazardous Materials**
3. **Passenger Handling**
4. **Load Planning**
5. **Aircraft Servicing**
6. **First Aid and Emergency Actions**
7. **Communications**

E. FACILITY EQUIPMENT & SURFACE

1. **Ramp Area**
2. **Passenger Movement**
3. **Lighting**
4. **Hazards/Obstructions**

F. CONFORMANCE

1. **CAR's**
2. **Operator's Directives**

G. FLIGHT CONTROL

1. **Flight Planning**
2. **Load Planning**
3. **Weather**
4. **NOTAMs**

H. SERVICING

1. **Loading**
2. **Logbook/MEL Entries**
3. **Fueling**
4. **Oil/Hydraulic Service**
5. **Potable Water Service**
6. **Deicing**
7. **Marshalling**
8. **Chocks/Mooring**

I. MANAGEMENT

1. **Communications**
2. **Contract Services**
3. **Contingency Planning**

J. SECURITY

1. **Passenger Screening**
2. **Baggage and Cargo Screening**
3. **Limited Access Areas**

K. AERODROME

1. **Fire Fighting Equipment Medical Services**
2. **Ramp**

REMARKS: (Continue on back if necessary):

OVERALL RESULT:	☐ **Satisfactory** ☐ **Unsatisfactory**	**INSPECTOR'S SIGNATURE**

CHAPTER 23: STATION RAMP INSPECTIONS

51.1 BACKGROUND AND OBJECTIVES

Section 9.6.3 of the ICAO *Manual of Procedures for Operations Certification and Inspection* states that a Ramp (Apron) inspection presents an excellent opportunity for an overall evaluation of an operation actually being conducted.

The primary objective of a ramp inspection is to provide the LCAA with the opportunity to evaluate an airline operation while the crewmembers and aircraft are on the ground. Ramp inspections allow inspectors to observe and evaluate the routine methods and procedures used by an operator's personnel during the period immediately before or after a flight, and to determine the operator's compliance with regulations and safe operating practices. A ramp inspection is an effective method for evaluating an operator's ability to prepare both the aircraft and crew for a flight to be conducted. When conducted after the completion of a flight, a ramp inspection is an effective method for determining whether the aircraft and crew were adequately prepared for the flight; as well as for evaluating the operator's post flight and/or turnaround procedures and crewmember and ground personnel compliance with these procedures.

51.2 GENERAL RAMP INSPECTION PRACTICES AND PROCEDURES

(a) Ramp inspections may be conducted before a particular flight, at en route stops, or at the termination of a flight. A ramp inspection may be conducted any time an aircraft is at a gate or a fixed ramp location, provided the inspection is conducted when the crew and ground personnel are performing the necessary preparations for a flight or when they are performing postflight tasks and procedures.

(b) The operator should not have to be given advance notice that a ramp inspection is going to be conducted. Inspectors must, however, conduct inspections in a manner that does not unnecessarily delay crewmembers and/or ground personnel in the performance of their duties. The following are recommended guidelines for inspector conduct during ramp inspection activities:

(1) Inspectors should not interrupt crew or ground personnel when they are performing a particular phase of their duties.

(2) When inspection activities require inspectors to interact directly with the crew or ground personnel, the activities should be timed to be accomplished when the crew or ground personnel are waiting to begin another phase of their duties or after they have completed one phase of their duties and before they begin another phase.

(3) Inspection activities must be timed so that they do not delay or interfere with passenger enplaning or deplaning.

(4) Inspection activities should not adversely impede aircraft servicing or catering.

51.3 RAMP INSPECTION AREAS

(a) A ramp inspection may be thought of as a "snapshot" of an airline's operation during which an inspector may observe, in a short period of time, many of the areas which are also examined during the more time-consuming Station Facility Inspections, Cockpit Enroute Inspections, and Cabin Inspections. Areas which may be observed and evaluated during ramp inspections fall into five different categories:

(1) *Crewmember*. Refers to the evaluation of crewmember preparation for flight and compliance with post flight procedures. This area includes evaluations of crewmember manuals and any required flight equipment, flightcrew flight planning, flightcrew airman and medical certificates, crewmember disposition of trip paperwork, and other items that relate to crewmember responsibilities.

(2) *Station operations*. Refers to the various methods and procedures used by the operator to support the flight, such as distribution of dispatch, flight release, and flight-locating paperwork; distribution of weather reports, PIREP's and other flight planning material; passenger handling; boarding procedures; and carry-on baggage screening.

(3) *Aircraft*. Refers to the aircraft's general airworthiness, logbook entries, MEL compliance, carryovers, and required items of emergency and cabin safety equipment.

(4) *Servicing and maintenance*. Applies to any ongoing maintenance and servicing, such as fueling, deicing, or catering. This area is usually evaluated in detail by airworthiness inspectors when performing their own ramp inspections. Operations inspectors may, however, observe certain items in this area and comment on obvious deficiencies for airworthiness inspector follow-up.

(5) *Ramp and gate condition and activity*. Refers to taxi and marshalling operations, ramp or parking area surfaces, any apparent contamination or debris, vehicle operations, and the condition and use of support equipment.

51.4 SPECIFIC RAMP INSPECTION PRACTICES AND PROCEDURES

(a) Because of the wide range of inspection areas involved, ramp inspections are usually limited in scope. There are many preparatory or postflight actions that occur simultaneously and one inspector cannot physically observe all of these actions for a particular flight. For this reason, the inspector should vary the areas of emphasis over several inspections. For example, on one ramp inspection the inspector may decide to observe and evaluate the PIC accomplishing flight planning and the operator's methods for providing the flightcrew with appropriate flight planning support. On another ramp inspection, the inspector may decide to observe the SIC accomplish the aircraft exterior preflight and then evaluate the aircraft's interior equipment and furnishings. As an example of a ramp inspection conducted at the termination of a flight, the inspector may decide to inspect the aircraft's interior equipment, furnishings, and aircraft logbooks, and then evaluate the trip paperwork turned in by the crew. In this example, the inspector may not have an opportunity to interact directly with the crew, therefore the "crewmember" inspection area would not be accomplished. Inspectors should vary both the sequence and the emphasis of the inspection areas during a ramp inspection. Inspectors should describe in their reports how the inspection was limited in scope. Detailed information concerning each of the five functional areas which may be inspected follows:

(1) **Crewmember Inspection Area**

When an inspector makes direct contact with a crewmember, the inspector should provide an official but courteous introduction, offer appropriate identification for the crewmember to inspect, and inform the crewmember that a ramp inspection is being conducted. If the direct contact is with a flight crewmember, the inspector should request to see the crewmember's license. The inspector should review the license to see that it meets the appropriate requirements for both the duty position and for the aircraft for the flight to be conducted or that was just terminated. When the direct contact is with flight crewmembers or flight attendants, the inspector should also request to examine the crewmember's professional equipment. Crewmember professional equipment includes any equipment that crewmembers are required to have according

to regulation or operator policies, either on their person or that which will be available during the flight. Examples of professional equipment include aeronautical charts, appropriate operator manuals, and operable flashlights. Inspectors should determine whether the charts and manuals carried by crewmembers are current. The following is a list of other items and activities that, depending on the scope of the ramp inspection, may be observed and evaluated:

(i) Flight crew flight-planning activities, such as review of weather, flight plans, anticipated takeoff weight and performance data, flight control requirements (dispatch, flight release, flight-locating, ATC flight plans)

(ii) Flight crew aircraft preflight activities, such as exterior walk around, logbook reviews, and cockpit setup procedures, including stowage of flight crew baggage and professional equipment

(iii) Flight attendant inspection of cabin emergency equipment and cabin setup procedures, including stowage of flight attendant baggage and professional equipment

(iv) Flight crew and flight attendant post flight logbook entries and proper use of MEL's and placards

(v) Completed trip paperwork and the appropriate disposition of such paperwork

(2) **Station Operations Area**

This area of a ramp inspection usually involves a facility (or designated area of a facility) including related ground personnel, and is commonly referred to as "line station operations." Line station operations include a designated location where crewmembers go to review and pick up required flight paperwork or to deposit flight reports, to send or receive communications with the operator's flight control system, and to join up with other crewmembers assigned to the flight. Line station operations also includes gates and ramp areas where passengers and cargo are enplaned and deplaned. The following is a list of items and activities that, depending on the scope of the inspection, may be observed and evaluated in this inspection area:

(i) Preflight and post flight trip paperwork, such as load manifests, flight plans, weather reports and forecasts, NOTAM's, dispatch or flight release messages and operator bulletins

(ii) Methods used by the operator to comply with MEL and CDL requirements, particularly the preflight information provided to the crew

(iii) Adequacy of facility with respect to crewmember and ground personnel use for completing preflight and post flight responsibilities, including work areas and administrative support (such as forms, charts, and copy machines when required by company procedures)

(iv) Usability and currency of operator manuals and aircraft performance information maintained at the line station operations area for crew and ground personnel use

(v) Company communication capabilities and procedures

(vi) Passenger enplaning and deplaning including public protection procedures and carry-on baggage screening

(vii) Cargo and baggage loading and stowage procedures and unloading procedures

(3) **Aircraft Inspection Area**

Ramp inspections should include at least an examination of the aircraft's registration, airworthiness certificate, and maintenance logbook. Inspectors should plan their ramp inspection activities so that any inspection of the aircraft's interior equipment and furnishings would be conducted either before passengers are enplaned or after they are deplaned. The following is a list of items, similar to those covered during a Cabin Enroute Inspection, that may be observed in this inspection area:

(i) Aircraft registration and airworthiness certificates

(ii) Aircraft and cabin logbooks (or equivalent) (open discrepancies, carryover items, and cabin equipment items needing repair or replacement)

(iii) Appropriate placarding

(iv) Fire extinguishers (correct types, numbers and locations; properly serviced, safetied, tagged, and stowed)

(v) Portable oxygen bottles (correct numbers and locations; properly serviced, tagged, and stowed; condition of mask, tubing, and connectors)

(vi) Protective breathing equipment (properly located, stowed, and sealed)

(vii) First aid kits and emergency medical kits (correct numbers and locations; properly sealed, tagged, and stowed)

(viii) Megaphones (correct numbers and locations; in operable condition, and properly stowed)

(ix) Crash ax (properly located and stowed)

(x) Passenger briefing cards (one at each seat position; appropriate to aircraft; required information including emergency exit operation, slides, oxygen use, seatbelt use, brace positions, flotation devices; appropriate pictorials for extended overwater operations, including ditching exits, life preserver, and life or slideraft inflight location)

(xi) Passenger seats (not blocking emergency exits; TSO label on flotation cushions; cushion intact; latching mechanism on tray tables; armrests have self-contained and removable ashtrays; seatbelts properly installed, operational, and not frayed or twisted; life preservers available and CO2 cartridges not expired)

(xii) Passenger oxygen service units (closed and latched with no extended red service indicators or pins)

(xiii) Flight attendant stations (operable seat retraction and restraint systems; properly secured; harnesses not frayed or twisted; seat cushions intact; headrests in correct position; PA system and interphone)

(xiv) Galleys (latching mechanisms - primary and secondary; tiedowns; condition of restraints; padding; proper fit of cover and lining of trash receptacles; hot liquid restraint systems; accessibility and identification of circuit breakers and water shut-off valves; non-skid floor; girt bar corroded or blocked by debris; clean stationary cart tiedowns (mushrooms); galley carts in good condition and properly stowed; lower lobe galley emergency cabin floor exits passable and not blocked by carpeting, if applicable)

(xv) Galley personnel lift, if applicable (no movement up or down with doors open; safety interlock system; proper operation of activation switches)

(xvi) Lavatories (smoke alarms; no-smoking placards; ashtrays; proper fit of cover and lining of trash receptacles; automatic fire extinguisher systems)

(xvii) Stowage compartments (weight restriction placards; restraints and latching mechanisms; compliance with stowage requirements; accessibility to emergency equipment; carry-on baggage provisions)

(xviii) Required placards and signs (seatbelt, flotation equipment placards at seats; emergency/safety equipment placards; weight restriction placards; no-smoking/seatbelt signs; no-smoking placards; exit signs and placards, including door opening instructions)

(xix) Emergency lighting system (operation independent of main system; floor proximity escape path system; controllability from cockpit)

(xx) Exits (general condition; door seals; girt bars and brackets; handle mechanisms; signs; placards; slide or slideraft connections and pressure indications; lights and switches)

(xxi) Main landing gear viewing ports, if applicable (cleanliness and usability)

(4) **Servicing and Maintenance Inspection Area**

The servicing and maintenance of the aircraft may be observed at any time during the ramp inspection. The following is a list of some areas that may be observed and evaluated in this inspection area:

(i) Fueling procedures (ground wires in place; fuel slip properly completed; fueler trained in the operator's specific procedures; fuel tested for water contamination)

(ii) Routine maintenance (qualifications of mechanics, repairmen or service agents; appropriate logbook entries)

(iii) Deicing procedures (where applicable)(compliance with company procedures; proper glycol/water ratios and temperatures; avoidance of engine/APU inlets; removal of all snow and ice; trailing and leading edges free of snow and ice and covered completely with deicing fluid)

(iv) Correct procedures used by service contractors (caterers; cleaners; lavatory and water servicing personnel; correct use of switches and controls)

(5) **Ramp and Gate Condition and Activity Inspection Area**

During ramp inspections, inspectors should observe and evaluate the ramp and gate surface condition as well as any support activities being conducted during an inspection. Inspectors should observe vehicular operations on the ramp and around gate areas and other aircraft operations during marshalling, taxiing, or towing operations. Inspectors should report any condition that appears to be unsafe or could potentially be unsafe. The following is a list of some items that may be observed and evaluated in this inspection area:

(i) Ramp, apron, and taxiway surfaces (general condition; cracks; holes; uneven surfaces)

(ii) Contamination debris (FOD; fuel, oil, or hydraulic spills; snow and ice accumulations)

(iii) Marking and Lighting (taxi lines; gate markings; signs; signals)

(iv) Construction (appropriate barriers; signs; markings; flags)

(v) Vehicular operations (conducted safely around aircraft and gate areas by qualified personnel)

51.5 AIRLINE RAMP INSPECTION CHECKLIST/REPORT

The *Air Operator Ramp Inspection Checklist/Report* which is included at the end of this chapter will be used for all such inspections. This form follows the sequence contained in paragraph 12.4 above and contains checklist items ("reminders") that may be observed and evaluated by the inspector. It is recommended that inspectors complete only those areas of the form which have been the focus of his inspection, and document the limited nature of the inspection by marking "N" (Not Observed) next to the items not covered.

LCAA
Air Operator Cabin Inspection Checklist/Report

Operator:	Flight No.:	Date	Location:	Aircraft Type	Registration No.
Captain	Cert. No.	First Officer:	Other Crew:	Lead F/A	Inspector:

S=Satisfactory; **U**=Unsatisfactory; **P**= Potential; **I**=Information; **E**=Exceeds; **N**=Not Observed; **NA**=Not Applicable

A. CREW MEMBERS

1. **Certificates**
2. **Required Equipment**
3. **Manuals**
   - Available
   - Current
4. **Flight Planning**
   - Weather
   - Flight Plans
   - Notams
   - Weight and Balance
   - Takeoff and Performance
   - Dispatch/Flight Release
5. **Flightcrew Aircraft Preflight**
   - Exterior Walk around
   - Logbook Review
   - Cockpit Setup
   - Crew Baggage Stowage
   - MEL Items and Placards
   - Coordination with Cabin and Ground crew
   - Pushback/Taxi
6. **Flight Attendant Preflight**
   - Emergency Equipment inspection
   - Cabin Setup
   - Crew Baggage Stowage
   - Passenger Handling
   - Passenger Carry-on
   - Baggage Stowage
7. **Flightcrew and FA Postflight**
8. **Logbook and MEL use**
9. **Completed Trip Paperwork**

B. LINE STATION OPERATIONS

1. Trip Papers
- Load manifests
- Flight Plans
- Weather
- Fuel Slips
- Dispatch/Flight Release

10. Passenger Seats
- Not Blocking Emergency Exits
- Flotation Cushions
- Tray Tables
- Ashtrays
- Life Preservers
- Seatback Function
- Seatbelts

11. Passenger O_2 Service Units

12. Flight Attendant Stations

1. Seat Retraction
2. Restraint System
3. Headrest/Cushions
4. PA System/Interphone

13. Galley

1. Restraints & Tiedowns
2. Trash Receptacles
3. Circuit Breakers
4. Water Shutoff Valves
5. Water Stowage/Quality
6. Floor
7. Girt Bar
8. Galley Carts

14. Personnel Lift

15. Lavatories
- Smoke Alarms
- Trash Receptacles
- Fire Extiguishing System

16. Stowage Compartments
- Weight Placards
- Restraints/Latching
- Access to Emergency Equipment

17. Required Placards

18. Emergency Lighting System

19. Exits
Main Landing Gear
Viewing Ports

E. SERICING & MAINTENACE

1. Fueling Procedures
- Ground Wires
- Fuel Slip
- Fueler Training
- Fuel tested for H_2O

2. Routine Maintenance
- mechanic qualifications
- logbook entries

3. Deicing Procedures

4. Service Contractor Procedures
- Caterers
- Cleaners
- Water Servicing

F. RAMP & GATE CONDITION & ACTIVITY

5. Surface Condition

6. Contamination/ Debris

7. Construction and Obstructions
- signs
- markings and flags

8. Marking and lighting
- Taxi Lines
- Gate Markings Signs and Signals

C. COMPANY PROCEDURES 1. MEL/CDL 2. Adequacy of Facilities 3. Manuals 4. Ground Communications 5. Flight Communications 6. Gate Agent Procedures 7. Passenger Handling 8. Public Protection/Security 9. Cargo/Baggage Loading **D. AICRAFT/EQUIPMENT** **1. Certificates/Placards** **2. Logbooks** • Open Items • Carryovers • Cabin Items **3. Fire Extinguishers** • Type • Number • Location • Service **4. Portable O_2 Bottles** • Number • Location • Service • Masks and Hoses **5. PBE** **6. First Aid Kits** • Sealed and Stowed **7. Megaphones** **8. Crash Ax** 9. **Passenger Briefing Cards** • At Each Seat • Required Information		
REMARKS:		
OVERALL RESULT: ☐ **Satisfactory** ☐ **Unsatisfactory**		**INSPECTOR'S SIGNATURE**

CHAPTER 24: AIRMEN PROFICIENCY AND COMPETENCY CHECKS

52.1 BACKGROUND AND OBJECTIVES

(a) Operators are required to conduct proficiency and competency checks to ensure that all airmen are competently performing their duties and responsibilities. ICAO Annex 6, Part 1, Section 9.4.4 provides that such checks shall be performed twice within the period of one year. Paragraph 9.6.6 of the *Manual of Procedures for Operations Certification and Inspection* states that inspectors must ensure that proficiency checks of the operator's flight crew personnel are carried out in accordance with the standards and frequency prescribed in the regulations. Qualified inspectors should be authorized to administer proficiency and competency checks or to observe these checks at any time as an inspection job function. The objectives of a proficiency or competency check inspection are as follows:

(1) Evaluate individual airmen performing their duties and responsibilities

(2) Assess the effectiveness of the operator's training program

(3) Evaluate individual Check Airmen performing their duties and responsibilities

(4) Evaluate the effectiveness of the operator's trend analysis, standardization, and quality control program

(5) Identify previously approved or accepted operational procedures, manuals, or checklists which are deficient

(6) Assess the effectiveness of the operator's simulators and equipment

8.1.1 Airman Competency

An airman must perform specific events in an aircraft, an aircraft simulator, a flight training device, or a combination thereof during a proficiency or competency check. The events performed during the check depend on the type of operation conducted and the airman's duty position (PIC, SIC, or FE).

8.1.2 Evaluating the Operator's Training Program

The analysis of proficiency or competency check inspection results is an excellent means for the LCAA to ensure the continued effectiveness of an operator's training program. When deficient areas are identified, they should be rectified by changes in the operator's training program. For example, if inspection comments repeatedly indicate deficiencies in the area of no precision approaches, the competency check should require the operator to emphasize that event in flight training curriculum segments.

8.1.3 Competence of Each Check Airmen

The inspector will observe company Check Airmen or examiners conducting proficiency or competency checks. These observations enable the LCAA to evaluate both the individual Check Airmen performing his duties as well as the company's entire Check Airmen program.

(1) The Check Airmen is responsible for ensuring that all required flight test events are completed in a realistic flight scenario, for providing adequate preflight and post flight briefings for the airman being checked, and for objectively evaluating the airman's performance. An evaluation of the Check Airmen's ability to actually perform the flight events of the proficiency or competency check is not normally part of a Check Airmen

inspection. A Check Airmen should maintain basic qualification in the duty position in accordance with applicable LCAA regulations. Should a question concerning the Check Airmen's basic qualifications arise, a separate inspection may conducted in accordance with statutes which the country should have regarding re-examination for competency.

(2) Inspectors will place emphasis on the competence of each Check Airmen as an evaluator. Before designation, each Check Airmen must be observed performing those Check Airmen duties which will be authorized after designation. After designation, when resources permit, each Check Airmen will be observed annually. When resources do not permit annual observations, observations should be conducted as frequently as possible. Priority should be placed on observing those Check Airmen who have not been observed for the longest period of time.

(7) Whenever a question concerning a Check Airmen's competency arises, a Check Airmen inspection should be conducted as soon as possible. For example, an inspection of a Check Airmen should be conducted immediately if an airman, whom the Check Airmen has passed on a proficiency or competency check, is subsequently found to be deficient in terms of the qualification standards.

8.1.4 Effectiveness of an Operator's Trend Analysis, Standardization, and Quality Control Program

Operators should collect, record, and analyze the results from proficiency and competency checks to detect and correct deficiencies in training programs, procedures, and checklists. The LCAA will encourage operators with more than 10 crewmembers in any duty position to establish trend analysis. Inspectors will evaluate the effectiveness of these programs.

8.1.5 Manuals, Procedures, and Checklists

Inspectors can use the data from proficiency or competency checks, combined with data from other inspections (such as cockpit, en route, and ramp inspections), to identify deficiencies in manuals, procedures, or checklists previously approved or accepted by the LCAA. Checklist procedures, MEL/CDL procedures, and specific flight maneuvers and procedures are operational areas that may require change to ensure compliance with the regulations or safe operating practices.

8.1.6 Simulators and Equipment

In the course of monitoring proficiency of competency checks, inspectors will have the opportunity to observe the operation of flight simulators, CPTs, and other training devices. Any obvious deterioration in the operation or maintenance of a simulator or training device should be brought to the attention of the operator.

52.2 PROFICIENCY/COMPETENCY CHECK INSPECTION AREAS

(a) Five specific areas may be identified as areas to be observed and evaluated during proficiency or competency check inspections:

(1) Competency of airman being checked

(2) Content of check

(3) Competency of Check Airmen as an evaluator

(4) Manuals, procedures, and checklists

(5) Flight simulators and training equipment

8.2.1 Airman Competency

(a) This inspection area applies to the knowledge, ability, and proficiency of the airman receiving the proficiency or competency check, as demonstrated by his performance during a series of required maneuvers and flight regimes. The inspector takes into account such items as:

(1) Knowledge of the aircraft, its systems, and components

(2) For pilots: Proper control of airspeed, configuration, direction, altitude, and attitude in accordance with the procedures and limitations contained in the manufacturers aeroplane flight manual, the operator's Aircraft Operating Manual, checklists, and other material applicable to the type of aircraft.

(3) For pilots: Control of the aircraft as delineated above over full range of maneuvers and flight regimes including takeoff, climb, cruise, descent, approach, landing, and during emergency and abnormal situations.

(4) For flight engineers: Management of the aircraft systems from the flight engineer position through a variety of flight regimes and in a variety of normal, abnormal, and emergency situations.

(5) Crew coordination (cockpit resource management and coordination with ground personnel and cabin crew)

(6) Currency of the airman's manuals

(7) Possession of appropriate ratings and endorsements

A list of required, graded maneuvers is contained in the "Pilot Proficiency" (Part A) and "Flight Engineer Proficiency" (Part B) sections of the Proficiency Check Report in Appendix A to this chapter. Separate columns are provided for indicating whether the maneuvers or procedures are accomplished in the aircraft or simulator. Spaces are also provided for indicating whether or not the airman's license is current and has the appropriate endorsements, whether or not the airman's personal manuals are kept up to date, and for indicating whether or not the results of the written or oral equipment examination was satisfactory or unsatisfactory. Part C of the Proficiency Check Report has spaces for grading the following items:

(i) **Content of Check**

In this inspection area the inspector evaluates whether all of the required maneuvers were accomplished in the course of the check. Operators normally develop their own company forms to provide a list of items to be accomplished by Check Airmen, and to serve as a record of the results of the completed check. When items required by regulations are not accomplished by the Check Airmen during the course of a proficiency check, it may indicate a weakness in operator's report form or a lack of understanding of the contents of the form by the Check Airmen.

(ii) **Competency of Check Airmen as an Evaluator**

This inspection area applies to the inspector evaluating the manner in which a Check Airmen conducts the check, the accuracy and completeness of the Check Airmen's observations, and the validity of the outcome. Such items as Check Airmen briefings

(before and after the check), are observed and evaluated by the inspector during the conduct of the check.

(iii) **Manuals, Procedures and Checklists**

This inspection area refers to the inspector observing the manuals, procedures, and checklists used during the conduct of the flight. While conducting proficiency or competency check inspections, inspectors have an opportunity to observe deficiencies in previously approved or accepted material that can only be detected while the material is in use. Such observations may provide the only opportunities inspectors have to observe the operator's non-normal and emergency procedures in use.

(iv) **Flight Simulators and Training Equipment**

This inspection area refers to the condition of the aircraft, simulators, or training devices which are used to conduct the check. When evaluating the equipment, inspectors should determine that required inspections been conducted, observed discrepancies are recorded on maintenance logs, and the equipment in an adequate state of repair.

52.3 GENERAL INSPECTION PRACTICES AND PROCEDURES

(a) A proficiency or competency check inspection is either accomplished by the inspector conducting a check or by the inspector observing a company Check Airmen conducting a check. In either case, the inspector should be adequately prepared to conduct the inspection.

(b) In addition to becoming thoroughly familiar with the operator's manuals, the inspector should be required to qualify in the operation of the aircraft, simulators, or training devices. Inspectors should be familiar with the following areas before conducting proficiency and competency check inspections:

(i) Inspector, safety pilot, and crew qualification for simulators, flight training devices, and aircraft

(ii) Acceptable methods for presenting the maneuvers and events of the check in simulators, flight training devices, and aircraft

(iii) Acceptable standards of performance

(c) When a proficiency check or competency check is conducted by a company Check Airmen and observed by an inspector, both the airman being checked and the competency of the Check Airmen administering the check are evaluated by the inspector. The Check Airmen should be responsible for:

(i) Completing all required checking events

(ii) Providing suitable briefings before and after the session

(iii) Fairly and objectively evaluating the airman being checked

(d) After the check is completed, the inspector should be responsible for debriefing both the airman who was checked (if the Check Airmen's debriefing was inadequate) and for debriefing the Check Airmen who conducted the check.

(i) The inspector's primary responsibility is to observe and evaluate the overall conduct of the check. The inspector should refrain from asking questions of the airman being checked, refrain from attempting to control the type or sequence of checking events, and refrain from interfering in any way with the manner in which the Check Airmen conducts the check.

(ii) It is the Check Airmen's responsibility to conduct a complete and proper check. The inspector's Responsibility is to evaluate the performance of both the airman being checked and the Check Airmen, to debrief each one, and to properly record the inspection results. Should the Check Airmen Check Airmen's performance be unsatisfactory, the inspector should complete and sign the evaluation form of the airman receiving the check. Should the Check Airmen fail to complete all required items on a check (which have been satisfactory to that point) the inspector should bring this fact to the attention of the Check Airmen and ensure all events are completed.

(e) While certain training benefits are gained during proficiency or competency checks, the purpose of a check is to have the airman's state of proficiency evaluated and to ensure that the last training conducted has been sufficient to ensure the airman's proficiency throughout the interim period. If the Check Airmen conducting the check observes minor deficiencies (and believes that minor instruction may correct the situation) the Check Airmen may suspend the check temporarily, conduct remedial training, and then resume the check. However, Check Airmen should not repeat events several times until they are performed in an acceptable manner.

(i) When a proficiency or competency check is interrupted to conduct training, that check should still be completed within the time frame the operator originally scheduled for the check. If training is so extensive that the check cannot be completed in the allotted time, the inspector should grade the check unsatisfactory and place the airman in requalification training.

(ii) If an inspector is conducting the check and unsatisfactory performance is observed, the inspector should complete as much of the remaining flight events as possible or terminate the check. Inspectors should not conduct airman training during proficiency or competency checks.

(iii) Inspectors should record the time required to complete checks and the amount of remedial training conducted while the check was suspended. Supervisory Inspectors should compare the time these checks require when conducted by Check Airmen and inspectors. The Supervisory Inspector should periodically compare these times against the time allotted for the check by the operator.

52.4 AIRMAN PROFICIENCY AND COMPETENCY CHECKLIST/REPORT FORM

An *Air Operator Proficiency and Competency Checklists/Report* form is included at the end of this chapter. This form will be used for all such inspections. The events that should typically be conducted on proficiency checks for pilots and flight engineers serving in scheduled large aircraft operations appear under the "Pilot Proficiency" and "Flight Engineer Proficiency" area of the form.

CHAPTER 25: INSPECTION OF CABIN CREW QUALIFICATION RECORDS

53.1 PURPOSE

This inspection is to ensure that the AOC holder is qualifying the cabin crew as outlined in their approved training program and recording the qualification in a timely manner.

53.2 METHODS

(a) Give the operator notice of your intention to conduct an inspection of their operational records, so that the required documents and management representatives will be made available for the inspection. (Under some circumstances, you can make a spot check of operational records, without prior notification.)

(b) Organize a discreet area to ensure minimal disruption to both yourself and the operator. Remain on the operator‘s premises during the inspection, observe the appropriate level of confidentiality and refrain from marking or defacing any records.

(c) Carry out the inspection, using the appropriate checklist.

(d) In your assessment of the operator‘s record-keeping system, consider the following:

(1) Practicality

(2) Accuracy and completeness

(3) Accessibility

(4) Security

(5) Control

(e) Comment on the adequacy and effectiveness of the operator‘s record-keeping system.

(f) If you have discovered discrepancies during the inspection, bring these to the attention of the operator.

53.3 CONDUCT FACILITIES AND RECORDS INSPECTIONS

(a) Give a management representative short notice of the inspection.

(b) Conduct an entry meeting with the management of the training facility:

(1) Review the scope of the inspection.

(2) Agree on the allocation of company staff or resources that may be needed for the inspection.

(3) Request a discrete and private working area to facilitate the confidential assessment of documents and preparation of reports.

(c) Carry out the inspection, in a way that causes a minimum of disruption to the operator, using the appropriate checklists.

(d) Follow appropriate checklists and procedures when carrying out specific separate inspections — for example, flight simulators.

(e) Conduct a short exit meeting with the a management representative:

(1) Briefly report the findings of the inspection.

(2) Make arrangements for any follow-up action.

CABIN CREW RECORDS CHECK SUMMARY

Record ID:	Inspector	Type of Operation	Activity Number-Checklist
Date Accomplished	# Issues	Operator #	Tracking #
Location:		Company Official	

Instructions for Use:

1. Check YES column if you reviewed the record, procedure or event and have no comment.
2. Check NO column if you reviewed the record, procedure or event and have a comment.
3. Check column if you did not review the record, procedure or event *or you do have adequate information to make a valid comment*
4. Enter the letter "N" in the column, if the line item is not required in this particular situation.
5. Enter any notes on reverse side regarding a NO answer for transfer to the Safety Issues Resolution Report.
6. For later reference, precede any notes with the appropriate question number.

Yes	No			
				CERTIFICATES
			1.	Copies of All Cabin Crew License in the records?
			2.	Copies of current Medical Certificates in the records?
				MINIMUM EXPERIENCE
			3.	Appropriate minimum experience in record?
				COMPANY PROCEDURES
			4.	Completion of Company Procedures Training in records?
				TR, CONVERSION
			5.	Completion of Type Rating Course in all records?
			6.	Completion of aircraft-specific systems training in all
			7.	Completion of required differences training posted in all
			8.	Initial emergency equipment training posted in all records?
			9.	Initial emergency experience training, including ditching posted?
			10.	General First Aid training posted in all records
			11.	Initial security training posted in all records?
			12.	Initial dangerous goods training posted in all records?
			13.	Initial CRM training posted in all records;
				QUALIFYING
			14.	Initial Proficiency Test for current aircraft assignment posted in all records?
			15.	Line flying under Supervision completion posted in all
			16.	Line Checks completion posted in all records?
			17.	Route Competence Qualification posted in all records?
				RECURRENT TRAINING
			18.	Recurrent Company Procedures training posted?
			19.	Recurrent aircraft-specific training posted
			20.	Recurrent dangerous goods training posted
			21.	Recurrent emergency equipment and safety training
			22.	Recurrent CRM training posted?
			23.	Recurrent emergency hands-on experience posted?
			24.	Recurrent security training posted

				RECURRENT CHECKING
			25.	Current Operator Proficiency Check in assigned aircraft posted?
			26.	Current Line Checks in the assigned aircraft posted
			27.	Emergency and Safety equip checks posted?
				RECORDS RETENTION, SECURITY AND AVAILABILITY
			28.	Records retained for proper periods?
			29.	Records secured from unauthorized modifications or
			30.	When crewmember changes air operator, a copy of the crewmembers records is provided to the other air operator upon proper request.?

INDIVIDUAL CABIN CREW RECORD CHECK SUPPLEMENTAL FORM

Checklist:	Air Operator	Date:	Location:
CC Record/:	Crew Position/Aircraft	Company Official	Inspector:

	CERTIFICATES		
1.	Cabin Crew License		
2.	Medical Certificate		
	MINIMUM EXPERIENCE		
3.	Minimum experience	Original	
	COMPANY PROCEDURES		
4.	Company Procedures Training	Original	
	TR, CONVERSION		
5.	Type Rating Course Original	Original	
6.	Aircraft-specific systems training	Original or Upgrade	
7.	Differences training?	Original or Upgrade	
8.	Initial emergency equipment training	Original or Upgrade	
9.	Initial emergency experience training, including ditching	Original or Upgrade	
10.	General First Aid	Original	
11.	Initial security training	Original	
12.	Initial dangerous goods training	Original	
13.	Initial CRM training	Original	
	QUALIFYING		
14.	Initial Proficiency Test	Original	
15.	Line flying under Supervision	Original	
16.	Line Check Original		
17.	Route Competence Qual	12 months	
	RECURRENT TRAINING		
18.	Company Procedures	12 months	
19.	Recurrent aircraft-specific systems training	2 years	
20.	Recurrent emergency equipment and safety training	12 months	
22.	CRM training	Same as ground training	
23.	Recurrent emergency hands-on experience	3 years	
24.	Recurrent security training	12 months	

	RECURRENT CHECKING		
25.	Operator Proficiency Check	6 months	
26.	Line Checks	12 months	
27.	Emergency and Safety equipment check	12 months	

REMARKS & OBSERVATIONS

INSPECTOR SIGNATURE

Additional comments attached ☐ =>

CHAPTER 26: INSPECTION OF FLIGHT PREPARATION RECORDS

54.1 PURPOSE

This inspection will review the flight preparation records to determine that the AOC holder is using the procedures and methods outlined in their Operations and Maintenance Manuals, that the personnel are properly completing the documents, and the documents are accurate. The proper retention is also reviewed.

54.2 FACILITIES AND RECORDS

(a) Give the operator notice of your intention to conduct an inspection of their operational records, so that the required documents and management representatives will be made available for the inspection. (Under some circumstances, you can make a spot check of operational records, without prior notification.)

(b) Organize a discreet area to ensure minimal disruption to both yourself and the operator. Remain on the operator‘s premises during the inspection, observe the appropriate level of confidentiality and refrain from marking or defacing any records.

(c) Carry out the inspection, using the appropriate checklist.

(d) In your assessment of the operator‘s record-keeping system, consider the following:

(1) Practicality

(2) Accuracy and completeness

(3) Accessibility

(4) Security

(5) Control.

(e) Comment on the adequacy and effectiveness of the operator‘s record-keeping system

(f) If you have discovered discrepancies during the inspection, bring these to the attention of the operator.

54.3 CONDUCT FACILITIES AND RECORDS INSPECTIONS

(a) Give a management representative short notice of the inspection. Conduct an entry meeting with the management of the training facility:

(1) Review the scope of the inspection.

(2) Agree on the allocation of company staff or resources that may be needed for the inspection.

(3) Request a discrete and private working area to facilitate the confidential assessment of documents and preparation of reports.

(b) Carry out the inspection, in a way that causes a minimum of disruption to the operator, using the appropriate checklists.

(c) Follow appropriate checklists and procedures when carrying out specific separate inspections — for example, flight simulators.

(d) Conduct a short exit meeting with the management representative.

(e) Briefly report the findings of the inspection.

(f) Make arrangements for any follow-up action.

INSPECTION OF FLIGHT PREPARATION RECORDS

Record ID:	Protocol #	Tracking #	Activity #
Date Accomplished	Action Taken	Inspector	Type of Operation:
Air Operator/Organization	Aircraft Make/Model:	Location #	
Title of Manual reviewed:			

Instructions for Use:

1. Check YES column if you determine the document or individual item conforms.
2. Check NO column if you determine that the document or individual line item does not conform. (Put a marker tab in the manual with a short note opposite the non-conforming item)
3. Use the reverse side of this form for notes.
4. Precede each note with the line item number for later correlation.
5. Check column if it is not applicable *or you do have adequate information to make a valid comment*

			1.	Mass and balance calculations and procedures?
			2.	Passenger seat assignments?
			3.	Last-minute mass and balance changes?
			4.	Takeoff and landing performance calculations?
			5.	Weather acquisition and briefing?
			6.	Notam acquisition and briefing?
			7.	Operational flight plan calculations and procedures?
			8.	Flight following procedures?
			9.	Adequate communications capability with main base operations and maintenance function, including relay of information?
			10.	Flight preparation records filing?
				RECORDS RETENTION AND ACCURACY
			11.	Flight preparation records retention security?
			12.	Are operational flight plans/nav logs retained?.
			13.	Are briefing weather documents retained?
			14.	Are briefing information such as NOTAMs and other aeronautical data including NOTAMs retained?
			15.	Are copies of load manifests, including last minute calculations retained?
			16.	Are copies of tech log pages showing MEL dispatch or maintenance at station retained?
			17.	Are fuel and oil servicing records retained?
			18.	Are crew qualification records retained?
			19.	Were records inspected satisfactory and accurate?

REMARKS & OBSERVATIONS

INSPECTOR SIGNATURE

Additional comments attached ☐ =>

EVALUATION FOR ADDING SAME TYPE OF AIRCRAFT

EVALUATE ADDITION OF SAME MAKE/MODEL AIRCRAFT

Record ID:	Tracking/Protocol #	Activity #	Action Taken –
Date Accomplished:	Inspector #	Type of Operation	Air Operator/Organization
Location:	Aircraft Make/Model	AC Registration	Training Simulator –

Instructions for Use:

1. Check NO DIFFERENCE if you evaluated this line item and found no differences from the AOC holder's same make/model fleet.
2. Check DIFFERENCE column if you evaluated this line item and found some element of difference to the remainder of the AOC holders same make/model fleet.
3. Check N/A column if this line item is not applicable to the aircraft fleet
4. Enter any notes on reverse side regarding a DIFFERENCE answer for further manual or training differences or a necessary conformance change to aircraft.
5. For later reference, precede any notes with the appropriate line item number.

NO DIFFERENCE?	DIFFERENCE?		N/A		FLIGHT DECK
				1.	Flight Management System Presentation and Operation
				2.	Primary Flight Guidance Presentation and Operation
				3.	Other Instrumentation Location and Marking?
				4.	Other Switch Location and Operation
				5.	Warning Indications and Sounds Presentation?
				6.	Circuit Breaker Location
				7.	Communications Equipment
Revision necessary to critical information?					
				8.	Instrument Approach Minimums
				9.	Passenger Information Cards
				10.	Condensed Checklists
				11.	Expanded Checklists
				12.	Aircraft Limitations
				13.	Aircraft Performance
				14.	Aircraft Weight and Balance
				15.	Weight and Balance Computations
				16.	Operational Flight Plan Computations
				17.	Aircraft Operation Manual
				18.	Minimum Equipment List (Installation & Dispatch)
				19.	Training Program or Syllabi
				20.	Operational Bulletin
Revision Necessary to AOC Holder Manuals for Aircraft Systems Details and Operation?					
				21.	Aircraft General
				22.	Air Conditioning and Pressurization
				23.	Automatic Pilot
				24.	APU
				25.	Electrical
				26.	Emergency Equipment Location and Use
				27.	Powerplant
				28.	Fire Protection
				29.	Flight Controls

				30.	Fuel
				31.	Hydraulics
				32.	Ice & Rain Protection
				33.	Instrumentation and
				34.	Landing Gear
				35.	Navigation

RECOMMEND APPROVAL:		YES		NO (Reason cited below)

REMARKS & OBSERVATIONS

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INSPECTOR SIGNATURE

Additional comments attached ☐ =>

CHAPTER 27: EVALUATION OF OPERATIONS MANUAL OR VOLUME

27.1 OBJECTIVE

This chapter provides guidance and directions to evaluate a certificate holder's operations manual to determine that all required regulatory areas are covered, content is consistent with safe operating practices, and is based on sound rationale or demonstrated effectiveness.

27.2 BACKGROUND

(a) LCAR require each air operator to issue to crew members and persons assigned operational control functions an operations manual. Furthermore, LCAR outline the organization and contents of the operations manual. The operations manual shall be reviewed by the LCAA and its content found acceptable or be approved, as applicable, prior to being provided for the use of personnel. LCAA will require revision of the manual as necessary to achieve compliance with LCAR and safety requirements.

(b) The objective of LCAA review of the operations manual is to ensure that the policies and procedures contained in the manual:

(1) Implement the Liberia Civil Aviation Regulations;

(2) Provide clear, complete and detailed operating instructions, policies and procedures so that operational personnel are fully informed of what is required of them. Procedures shall be effective, represent sound safety philosophy and be capable of being accomplished;

(3) Make provisions for revision to ensure that the information contained therein is kept up to date;

(4) Present the necessary guidance and instructions to personnel in a suitable and convenient format; and

(5) Outline standardized procedures for all crew member functions.

27.3 MANUAL ORGANIZATION

(a) In order to accomplish the above requirements and effectively organize policy and instructions, that portion of an operator's overall manual system which applies specifically to operations personnel is typically divided into several volumes. The size, as well as the number of volumes, of the operations manual will depend upon the size and complexity of the proposed operations. The overall manual system may be organized in any manner which adequately provides guidance concerning all important aspects of the operation.

(b) The operations manual shall be organized with the following structure:

(1) Part A - General;

(2) Part B - Aircraft operating information;

(3) Part C - Area, routes and aerodromes; and

(4) Part D - Training.

27.4 OVERALL OPERATIONS MANUAL INSPECTION AREAS

(a) Inspectors shall review the air operator's operations manual or manual system to ensure that it contains information in sufficient detail to permit all flight operations personnel to perform their duties safely and efficiently. The following areas shall be evaluated:

(1) Organization and readability. The manual(s) shall be organized so that information specific to various employee positions and types of operations is easy to locate, clear, concise, and unambiguous. Tables of contents shall be detailed enough so that specific subject areas may be easily and expeditiously located. Print quality, illustrations, and graphics shall be clear and readable. Each manual shall be numbered and issued according to a specific distribution list, and each holder made responsible for its prompt and accurate update. The distribution list shall contain all operations personnel and others requiring the information therein for proper performance of their duties. Those parts of the manual required to be carried on board each aircraft shall be designed for convenient use and all parts shall permit ready and accurate reference;

(2) Validity and accuracy. Technical information contained in manuals such as weight and balance charts, performance charts, limitations, etc. shall accurately reflect data provided from the manufacturer or shall have been developed through the use of accepted and approved methods;

(3) Consistency. Information presented in the various sections or volumes of a manual shall be consistent with that presented in other sections;

(4) Currency and conformity. Information contained in manuals shall reflect current company organization, equipment, procedures and policies. The manual(s) shall be easy to update and contain a list of effective pages;

(5) Distribution and availability. The operator shall have an effective system for distributing and updating manuals. The individual(s) responsible for entering changes in specific manuals shall be identified. The CAA must be provided with copies of all manuals;

(6) Approvals. LCAR require that certain portions of the operations manual be reviewed in detail and approved by CAA, while other portions of the operations manual are to be acceptable to CAA. For aspects of the operations manual to be acceptable to CAA inspectors shall conduct a specific evaluation to ensure that the information provided is in accordance with the applicable regulations and/or CAA guidance material. The inspectors shall ensure the operator complies with the applicable approvals issued by the State of Registry, when Liberia is not the State of Registry, and/or the State of Design in addition to CAA requirements;

(7) Content. The operations manual inspection checklist/report form which appears in Volume II Chapter 1 will be used for all operations manual inspections. The focus of the manual inspection will be to evaluate the operator's operations manual in the areas listed above. The "content" area of the form contains a checklist of the minimum subject areas which shall be adequately addressed in the operator's manual(s). The checklist items in the "content" area are designed to be used for all operators. Certain items may not apply to a particular operator in which case the checklist item shall be annotated – not applicable. More specific information on each checklist item is outlined below. In determining the acceptability of the material contained in the manual(s), inspectors will need to often cross reference against the applicable regulations and CAA guidance material;

Note. Training subjects are not included in this chapter as they are contained in others chapters of this manual.

27.5 PROCEDURES/ JOB PERFORMANCE SUBTASKS

(a) Determine need for evaluation of an operator's operations manual.

(1) Receive copy of operator's operations manual.

(2) Open work tracking record.

(b) Phase One - Establish framework for review/evaluation of manual.

(c) Phase Two - Preliminary review.

(d) Phase Three - In-depth review. Notify certificate holder of deficiencies.

(e) Phase Four - Validation tests.

(f) Phase Five - Granting CAA approval.

(g) Review and approve/disapprove emergency revisions.

(h) Close work tracking record.

27.6 TASK OUTCOMES

(a) File an ISATS report.

(b) Task Completion. Successful completion of this task will result in the following:

(3) Approval of operator's OM;

(c) Document Task. File all supporting paperwork in the operator/applicant's office file.

EVALUATION OF OPERATIONS MANUAL:
(INITIAL EVALUATION)

Record ID:	Protocol #	Tracking #	Activity #
Date Accomplished	Action Taken	Inspector	Type of Operation:
Air Operator/Organization	Aircraft Make/Model:	Location #	
Title of Manual reviewed:			

YES	NO	NA		
			1	**OVERALL MANUAL PRESENTATION**
			1.1	Bound in a secure form (not loose)?
			1.2	Binder is 3 or 4 ring?
			1.3	Exterior of binder clearly indicates manual content?
			1.4	Prepared in language of the country?
			1.5	Prepared in English language?
YES	**NO**	**NA**	**2**	**MANUAL CONTROL PROCESS**
			2.1	Copies numbered for controlled issuance?
			2.2	Amendment issuance tracking process?
			2.3	DCA issued numbered volume?
YES	**NO**	**NA**	**3**	**MANUAL REVISION PROCESS**
			3.1	Revision Instructions adequate?
			3.2	Revision page for proper revision entry?
			3.3	List of effective pages provided and correct?
			3.4	Last revision to individual pages identified?
YES	**NO**	**NA**	**4**	**MANUAL REFERENCING SYSTEMS**
			4.1	Table of contents easy to find and use?
			4.2	Index, if included, easy to find and use?
			4.3	Tabbed as necessary for usability without difficulty?
YES	**NO**	**NA**	**5**	**INDIVIDUAL PAGE PRESENTATION**
			5.1	Page numbered in chronological sequence (by chapter or single document?
			5.2	Last revision number/date appears on each page?
			5.3	Company name (and logo) appears on each page (exception – 18)?
			5.4	If manufacturer‘s document is submitted in lieu of a Company
			5.5	For all manufacturers’ documents submitted, a manufacturer’s letter or reference document is provided to substantiate current revision number/date.?
YES	**NO**	**NA**	**6**	**PARAGRAPH NUMBERING**
			6.1	Paragraphs and sub-paragraphs numbered or alphabetized for ease of reference
YES	**NO**	**NA**	**7**	**SUPPLEMENTARY CONTENT REFERENCING**

			7.1	Tables referenced for ease of use?
			7.2	Figures referenced for ease of use?
			7.3	Appendices referenced for ease of use?
			8	**MANUAL EXCERPTS PROPERLY REFERENCED**
			8.1	Condensed Checklists compared and current?
			8.2	Passenger Briefing Cards compared and current?
			8.3	Training materials?

RECOMMEND ACCEPTANCE: ☐ YES ☐ NO (Reasons cited below)

REMARKS & OBSERVATIONS

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INSPECTOR SIGNATURE

Additional comments attached ☐ =>

EVALUATION OF PART A:

(GENERAL)

Record ID:	Protocol #	Tracking #	Activity #
Date Accomplished	Action Taken	Inspector	Type of Operation:
Air Operator/Organization	Aircraft Make/Model:	Location #	
Title of Manual reviewed:			

YES	NO	NA		
			1	**ORGANIZATION AND SRUCTURE OF OPERATIONAL MANUAL**
			1.1	Organized with the structure: a) general; b) aircraft operating information; c) areas, routes and aerodromes; and d) training? -
YES	**NO**	**NA**	**2**	**OPERATIONS MANUAL POLICIES**
			2.1	Instructions outlining the responsibilities of operations personnel pertaining to the conduct of flight operations?
			2.2	Rules limiting the flight time and flight duty periods and providing for adequate rest periods for flight crew members and cabin crew?
			2.3	A list of the navigational equipment to be carried including any requirements relating to operations in RNP airspace?
			2.4	Where relevant to the operations, the long-range NAV procedures, engine failure procedure for EROPS (Extended Range Operation System) and the nomination and utilization of diversion aerodromes?
			2.5	Circumstances in which a radio listening watch is to be maintained?
			2.6	The method for determining minimum flight altitudes?
			2.7	The methods for determining aerodrome operating minima?
			2.8	Safety precautions during refueling with passengers on board?
			2.9	Ground handling arrangements and procedures?
			2.10	Procedures for pilots-in-command observing an accident?
			2.11	The flight crew for each type of operation including the designation of the succession of command?
			2.12	Specific instructions for the computation of the quantities of fuel and oil to be carried, in all circumstances of the operation including loss of pressurization and the failure of one or more power-units while en route?
			2.13	Conditions for use & amount of oxygen to be determined?
			2.14	Instructions for mass and balance control?
			2.15	Instructions on ground de-icing/anti-icing operations?
			2.16	The specifications for the operational flight plan?
			2.17	Standard Operating Procedures (SOP) for each phase of flight?
			2.18	Instructions on the use and time of use of normal checklists?
			2.19	Departure contingency procedures?
			2.20	Instructions on the maintenance of altitude awareness and the use of automated or flight crew altitude call-out?

			2.21	Instructions on the use of autopilots and auto-throttles in IMC?
			2.22	Procedures for normal method of communications & coordination with flt deck?
			2.23	Instructions on the clarification and acceptance of ATC clearances, particularly where terrain clearance is involved?
			2.24	Departure and approach briefings?
			2.25	Procedures for familiarization with areas, routes and aerodromes?
			2.26	Stabilized approach procedure?
			2.27	Limitation on high rates of descent near the Surface?
			2.28	Conditions required to commence or to continue an inst approach?
			2.29	Instructions for the conduct of precision and non-precision instrument approach procedures?
			2.30	Allocation of flight crew duties and procedures for management of crew workload during night and IMC inst app and landing operations?
			2.31	Instructions and training requirements for the avoidance of controlled flight into terrain (CFIT) and policy for the use of the ground proximity warning system (GPWS)?
			2.32	Policy, instructions, procedures and training requirements for the avoidance of collisions and the use of the (ACAS)?
			2.33	Information and instructions relating to the interception of civil aircraft including procedures, as prescribed in annex 2, for pilots-in command of intercepted aircraft including visual signals for use by intercepting and intercepted aircraft?
			2.34	Information and instructions for aeroplanes intended to be operated above 15 000 M (49 000 ft) Information which will enable the pilot to determine the best course of action to take in the event of exposure to solar cosmic radiation?
			2.35	Information and instructions relating to the procedures in the event that a decision to descend is taken, covering the necessity of giving the appropriate ATS unit prior warning of the situation and of obtaining a provisional descent clearance and the action to be taken in the event that communication with the ATS unit cannot be established or is interrupted?
			2.36	Information and instructions relating to the details of the accident prevention and flight safety program provided in accordance with the statement of safety policy and the responsibility of personnel?
			2.37	Information and instructions on the carriage of dangerous goods, including action to be taken in the event of an emergency?
			2.38	Security instructions and guidance?
			2.39	The bomb search procedure checklist?
			2.40	Human factors

RECOMMEND ACCEPTANCE: ☐ **YES** ☐ **NO** (Reasons cited below)

REMARKS & OBSERVATIONS

_____

INSPECTOR SIGNATURE

Additional comments attached ☐ =>

REMARKS & OBSERVATIONS

_____

INSPECTOR SIGNATURE

Additional comments attached ☐ =>

EVALUATION OF PART B:

(AIRCRAFT OPERATING INFORMATION)

Record ID:	Protocol #	Tracking #	Activity #
Date Accomplished	Action Taken	Inspector	Type of Operation:
Air Operator/Organization	Aircraft Make/Model:	Location #	
Title of Manual reviewed:			

YES	NO	NA	1	AIRCRAFT OPERATING INFORMATION :
			1.1	Certification limitations and operating limitations?
			1.2	The normal, abnormal and emergency procedures to be used by the flight crew and the checklists relating thereto as required?
			1.3	Operating instructions and information on climb performance with all engines operating, if provided in accordance with the standards?
			1.4	Flight planning data for pre-flight and in-flight planning with different thrust/power and speed settings?
			1.5	The maximum crosswind and tailwind components for each aeroplane type operated and the reductions to be applied having regard to gusts, low visibility, runway surface conditions, crew experience, use of autopilot, abnormal or emergency circumstances, or any other relevant Operational factors?
			1.6	Instructions and data for mass and balance calculations?
			1.7	Instructions for aircraft loading and securing of load?
			1.8	Aircraft systems, associated controls and instructions for their use, as required?
			1.9	The Minimum Equipment List and Configuration Deviation List for the aeroplane types operated and specific operations authorized, including any requirements relating to operations in RNP airspace?
			1.10	Checklist of emergency and safety equipment and instructions for its use?
			1.11	Emergency evacuation procedures, including type specific procedures, crew coordination, assignment of crew's emergency positions and the emergency duties assigned to each crew member?
			1.12	The normal, abnormal and emergency procedures to be used by the cabin crew, the checklists relating thereto and aircraft systems information as required, including a statement related to the necessary procedures for the coordination between flight and cabin crew?
			1.13	Survival and emergency equipment for different routes and the necessary procedures to verify its normal functioning before take-off, including procedures to determine the required amount & quantity of oxygen available?
			1.14	The ground-air visual signal code for use by survivors?

RECOMMEND ACCEPTANCE: ☐ YES ☐ NO (Reasons cited below)
REMARKS & OBSERVATIONS
_____ INSPECTOR SIGNATURE Additional comments attached ☐ =>

EVALUATION OF PART C:

(AREAS, ROUTES AND AERODROMES)

Record ID:	Protocol #	Tracking #	Activity #
Date Accomplished	Action Taken	Inspector	Type of Operation:
Air Operator/Organization	Aircraft Make/Model:	Location #	
Title of Manual reviewed:			

YES	NO	NA	1	ROUTES AND AERODROMES
			1.1	A route guide to ensure that the flight crew will have, for each flight, information relating to communication facilities, navigation aids, aerodromes, instrument approaches, instrument arrivals and instrument departures as applicable for the operation, and such other information as the operator may deem necessary for the proper conduct of flight operations?
			1.2	The minimum flight altitudes for each route to be flown?
			1.3	Aerodrome operating minima for each of the aerodromes that are likely to be used as aerodromes of intended landing or as alternate aerodromes?
			1.4	The increase of aerodrome operating minima in case of degradation of approach or aerodrome facilities?
			1.5	The necessary information for compliance with all flight profiles required by regulations, including but not limited to, the determination of take-off runway length for dry, wet and contaminated conditions, including those dictated by system failures which affect the take-off distance?
			1.6	The necessary information for compliance with all flight profiles required by regulations, including but not limited to, the determination of take-off, departure and climb limitations?
			1.7	The necessary information for compliance with all flight profiles required by regulations, including but not limited to, the determination of en-route climb and holding limitations?
			1.8	The necessary information for compliance with all flight profiles required by regulations, including but not limited to, the determination of approach climb limitations and landing climb limitations?
			1.9	The necessary information for compliance with all flight profiles required by regulations, including but not limited to, the determination of landing runway length requirements for dry, wet and contaminated conditions, including systems failures which affect the landing distance?
			1.10	The necessary information for compliance with all flight profiles required by regulations, including but not limited to, the determination of supplementary information, such as tire speed limitations?
			1.11	The Policy and procedures for flight crew to record and report on routine meteorological observation during en-route and climb-out phases of the flight and special and other non-routine observations during any phase of the flight?
			1.12	The Policy and policy and procedures for flight crew to record and report on volcanic activity?

RECOMMEND ACCEPTANCE: ☐ YES ☐ NO (Reasons cited below)
REMARKS & OBSERVATIONS

EVALUATION OF PART D:

(TRAINING)

Record ID:	Protocol #	Tracking #	Activity #
Date Accomplished	Action Taken	Inspector	Type of Operation:
Air Operator/Organization	Aircraft Make/Model:	Location #	
Title of Manual reviewed:			

YES	NO	NA	Ref.	MANUAL CONTROLS
			1.1	Complete Checklist OP-022
			2	**TRAINING ORGANISATION**
			2.1	Structure of the training and checking organization?
			2.2	Training policies and directives?
			3	**INSTRUCTORS AND EXAMINERS**
			3.1	List of designated instructors and line check airmen?
			4	**SYLLABI**
			4.1	Comprehensive syllabi, including lesson plans for approved training for Flight Crew?
			4.2	CFIT?
			4.3	ACAS?
			4.4	Comprehensive syllabi, including lesson plans for approved training for dispatchers?
			4.5	Comprehensive syllabi, including lesson plans for approved training for Cabin Crew?
			5	**EXAMINATIONS**
			5.1	Procedures for the conduct of examinations and maneuvers tolerances for flight crew?
			5.2	Procedures for the conduct of examinations for dispatchers?
			5.3	Procedures for the conduct of examinations for cabin crew?
			6	**COMPLETION STANDARDS**
			6.1	Procedures to require that flight crew members are properly trained and examined on abnormal and emergency conditions?
			6.2	Procedures to require that cabin crew members are properly trained and examined on abnormal and emergency conditions?
			6.3	Procedures for remedial training and subsequent examination of flight crew unable to achieve or maintain required standards?
			6.4	Procedures for remedial training and subsequent examination of dispatcher unable to achieve or maintain required standards?
			6.5	Procedures for remedial training and subsequent examination of cabin crew unable to achieve or maintain required standards?

RECOMMEND ACCEPTANCE: ☐ YES ☐ NO (Reasons cited below)
REMARKS & OBSERVATIONS
_____
INSPECTOR SIGNATURE Additional comments attached ☐ =>

CHAPTER 29: EVALUATION OF MINIMUM EQUIPMENT LIST

36.8.1 BACKGROUND

(a) ICAO Annex 6, Part I, Chapter 11 requires that the Operations Manual provide information which will enable the pilot-in-command to determine whether the flight may be continued should any instrument, equipment or system become inoperative. This requirement is generally best met by the establishment of an approved Minimum Equipment List (MEL) which specifies for a given model of aircraft the minimum operable
equipment required, taking into account operating rules for the existing environmental conditions, for the continuance of flight.

(b) Normally modern aircraft are designed with duplicate systems with redundancy for higher degree of safety. Therefore, failure of minor parts, components, equipment, system does not always render the aircraft unsafe for flight. With this concept in mind, the state of design approves the Master MEL so that flight can be continued with inoperative item under prescribed conditions.

(c) 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. The MEL document describes the limitations that apply when an operator wishes to conduct operations when certain items of equipment are inoperative.

(d) Civil Aviation Regulations permit the authorization of an MEL if the CAA finds 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 utilization 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 aeroplane until repair or replacement of the non-functioning equipment. An MEL is approved for a specific make and model of aircraft and is part of the approved operator’s Operations Manual.

(e) The operations inspector is the primary CAA official responsible for the overall process of administering, evaluating, and approving an operator's MEL in coordination with the airworthiness inspector. Both need to work with the operator involved to ensure that the approved MEL complies with all applicable requirements.

36.8.2 MEL POLICY

(a) Operators are required to produce their own MEL to be approved by the LCAA for incorporation in their manuals for the use and guidance of flight and ground operations personnel.

(b) The MEL will be tailored to the individual operator's routes and procedures within the constraints imposed by the Master Minimum Equipment List (MMEL).

(c) The current MMEL for a given aircraft may normally be obtained from the manufacturer of the aircraft or the civil aviation organization of the aircraft certificating State and used as the source reference for completion of the MEL.

25.1.2.1 MASTER MEL

(a) The MMEL does not include obviously required items such as wings, empennage, flaps, powerplants, etc.

(b) Nor does the list include items which do not affect the airworthiness of the aircraft such as galley equipment, entertainment systems, etc.

Any instrument, equipment, component or system function not included in the MMEL cannot deferred and must be operative and functional at the time of departure.

(c) It must be stressed and understood by all persons developing and using the MMEL that all items that are related to the airworthiness of the aircraft and are not included on the list are automatically required to be operative.

25.1.2.2 KEEPING THE MEL CURRENT

(a) It is the owner/operator's responsibility to keep their approved MEL current.

(b) They must arrange to receive all changes to the manufacturers Master MEL and Dispatch Deviation Guide.

With the exception of an LCAA mandatory revision, the operator must submit a revision to their MEL within 45 days of the release of a MMEL revision.

(c) They must then revise and submit revisions to the approved MEL in a timely manner.

25.1.2.3 CONFORMANCE WITH FORMAT

(a) The tailored MEL should be in the same format as the Master—

(1) Keeping the same numbering system.

(2) Where an item is not applicable marking that item N/A

(3) Show date and revision number of MMEL being followed.

(4) Use the MMEL Preamble and Definitions.

(5) Give specific reference to LCAR requirements.

(6) Give specific reference to incorporated Service Bulletins.

(7) Show actual number of installed equipment.

(8) Include procedures to meet repair intervals and/or obtain a time extension.

(9) Whenever there is an (O) or (M) in the Master, have the proper operations or maintenance procedure included.

(10) Attach copy of Configuration Deviation List (CDL) from the Aircraft's Approved Flight Manual to the back of the MEL.

25.1.2.4 NEVER "LESS" RESTRICTIVE

(a) The owner or operator can make minor changes from the Master as long as the changes make the item more restrictive.

(b) To preclude problems with "less restrictive"

No revision to the MEL that makes an item **less restrictive** will be approved.

the MMEL and manufacturer's Dispatch Deviation Guide should be consulted at all times.

36.8.3 ITEMS LISTED ON THE MEL

(a) There are three categories of items that may be contained in the operator's MEL:

(1) MMEL items;

(2) Passenger convenience items;

(3) Administrative control items.

36.8.3.1 MMEL Items

(a) 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.

36.8.3.2 Passenger Convenience Items

(a) 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, ashtrays, stereo equipment, and overhead reading lamps. It is incumbent on the operator and the OI 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 authorized relief as a passenger convenience item. "M" and "O" procedures may be required and should be developed by the operator, approved by the OI, and included in the air operator's appropriate document.

36.8.3.3 Administrative Control Items

(a) 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 the CARs. Examples of items considered to be administrative control items would be cockpit procedure cards.

36.8.4 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 program.

(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 OI 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 Authorizations.*** The CAA may occasionally authorize an operator to use a continuing authorization to approve extensions to the maximum repair interval for category "B" and "C" items, when the CAA is satisfied that the operator has an effective quality system and MEL management program in place, provided the CAA is notified within 24 hours of the operator's exercise of extension authority. In such case the certificate holder is not authorized to extend the maximum repair time for category "A" and "D" items, as specified in the approved MEL. Misuse of the continuing authorization may result in suspension or cancellation of the MEL continuing authorization.

36.8.5 RECORDKEEPING

When an item of equipment becomes inoperative, the operator must report it by making an entry in the aircraft technical log.

36.8.6 MULTIPLE ITEMS THAT ARE INOPERATIVE

Individual MEL requirements are designed to provide coverage for single failures enroute. When operating with multiple inoperative items, the operator should consider the interrelationships between those items and the effect on aircraft operation and crew workload, including consideration of a single additional failure occurring enroute.

36.8.7 FLEET APPROVAL

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 needs to be referenced by specific aeroplane identification (usually registration number).

36.8.8 ACCESS TO MEL

Part 8 requires that the MEL is carried aboard the aircraft or that the flightcrew have direct access to the MEL information prior to flight. Other means of direct access require CAA approval.

36.8.9 CONFLICT WITH OTHER APPROVED DOCUMENT

The MEL may not deviate from requirements of the flight manual limitations section, emergency procedures or other applicable airworthiness requirements, including 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.

36.8.10 ACCEPTABLE SOURCES OF MMELS. SOURCE MMELS POLICY

The CAA generally accepts MMELs approved by the regulatory authority of the State of Design unless special circumstances dictate the acceptance of a Type Certificate issued by another State where the applicable MMEL is the one approved by the State issuing the CAA accepted Type certificate (see Note). Operators are to incorporate source MMEL amendments

as soon as they are available. The amendment to an operator MEL is to be submitted to the CAA for approval prior to usage.

Note: All references to the State of Design in this guidance presume that the LCAA has accepted a Type certificate from the State of Design.

36.8.11 MEL APPROVAL PROCESS

36.8.11.1 General

(a) This section contains specific direction, guidance, and procedures to be used by operations and airworthiness inspectors when evaluating and approving MELs. It also guides an operator in the development of an MEL by explaining the approval process.

(b) The operator's MEL is developed by the operator from the appropriate approved Master Minimum Equipment List (MMEL) for the aircraft concerned.

(c) LCAA will not grant interim approval while the MEL is undergoing the review process, nor will approval be given to use a MMEL as an MEL.

(d) The LCAA approval process for an MEL follows the general process for approval or acceptance. This section contains an expansion of the approval process for the MEL.

36.8.11.2 MEL Acceptability

(a) The general criteria for MEL acceptability are as follows:

(1) ***Equally or More Restrictive.*** The operator's MEL must not be less restrictive than the MMEL, the CARs, the Operations Specifications (OpSpecs), the approved flight manual limitations, certification maintenance procedures or airworthiness directives (AD) requirements.

(2) ***Appropriate.*** The MEL must be appropriate to the individual aircraft make and model.

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

(4) ***Applicability.*** An MEL shall be applicable to the LCAR under which the operator is certificated.

36.8.11.3 Initial Phase of MEL Approval

(a) In this phase of the MEL approval process, the operator shall consult with the operations inspector (OI) regarding requirements for either developing an MEL or for revising an existing MEL. The OI shall consult and seek the participation of the airworthiness inspector (AI) during the entire approval process.

(b) ***Operator Familiarization.*** In phase one of the MEL approval process, the OI should determine the scope of the task, based on the operator's experience with MELs. OIs should adapt the discussion to fit the operator's needs and experience, and should provide advice and guidance to the operator as necessary. OIs must ensure that the operator clearly understands that MEL document preparation is solely the operator's responsibility.

(c) ***Required Document Submittal.*** OIs should advise the operator that, for an MEL to be approved, the following documents must be submitted:

(1) The proposed MEL or MEL changes, in duplicate;

(2) Necessary "O" and "M" procedures, which may be based on the aircraft manufacturer's recommended procedures, Supplemental Type Certificate (STC) modifier's procedures, or equivalent operator procedures;

(3) A description of the MEL management program and its procedures as required by the contents of the Operations Manual and the Maintenance Control Manual, unless these are already in place;

(4) Any required guidance material developed by the operator, such as training material, guidance, and deferral procedures for both maintenance and operations personnel.

NOTE: Several manufacturers have produced manuals of recommended procedures for operating with inoperative equipment. The Boeing Dispatch Deviation Guide (DDG) is an example of these manuals. When manufacturer's recommended procedures exist, operators may use them or may develop alternate procedures. When contract services are used to develop the operator's MEL along with acceptable "O" and "M" procedures, the principal inspectors should review the "O" and "M" procedures in light of the type of operations being conducted and should ensure the acceptability of the procedures. The principal inspectors should ensure that the developed MEL procedures can be adequately implemented by the operator.

(d) ***Required Operator Guidance Materials.*** Operators must obtain a current copy of the MMEL for a specific aircraft in either hard copy or electronic format from the State that issued the type certificate accepted by the LCAA for the specific aircraft. Additional guidance may be obtained from the LCAA.

(e) ***Document Form.*** The operator may submit MEL draft documents to the LCAA either on hard copy (printed on paper) or on computer disk, as mutually agreed upon between the operator and the OI. The operator and the OI should discuss the techniques that will be used for revising and editing the proposed document. It is important that the operator understand that when the process is complete, the final proposed MEL must be submitted on paper unless otherwise approved by the LCAA.

(f) ***MEL Format.*** The MMEL format has been standardized to facilitate the development, revision, and approval of both master and operator documents. While the master document contains eight total sections, six of these sections are considered basic for MEL development and shall be included in each operator's MEL. Refer to section 5.4.4.6 for a detailed list of the required MMEL sections and whether or not it should be included in the operator's MEL.

(g) ***Generic Single Engine MMELs.*** A generic MMEL for single engine aircraft may be developed and published by the LCAA from the country of manufacturer or other approved aircraft evaluation group. In particular, the FAA and EASA have published a generic MMEL applicable to all single engine aeroplanes and helicopters for which a specific MMEL has not been issued. In such case, operators should contact the CAA for guidance on the development of an MEL based on the generic MMEL accepted by the CAA. When an operator is approved to use this generic MMEL, and a specific MMEL for the individual aircraft type is subsequently issued, the operator's MEL must be revised within the specified time frame to conform to the specific MMEL.

36.8.11.4 Final Phase of MEL Approval Process

(a) The final phase begins when the operator formally submits the proposed MEL or MEL changes to the OI. The OI should initially review the operator's submittal to verify that it is complete, contains the required elements, as listed in this subsection, and is detailed enough to permit a thorough evaluation of the MEL.

(b) Unacceptable Submittal. If the OI finds the proposed MEL package to be incomplete or unacceptable at this time or at any other juncture in the approval process, the OI should contact the operator. A sample letter is provided in Attachment B. If a mutually acceptable correction cannot be immediately agreed upon, the entire package must be immediately returned to the operator, or its representative, along with an explanation of the problems found within the documents.

(c) Acceptable Submittal. If the OI finds the proposed MEL package to be complete and to contain the required information in an acceptable format, the detailed analysis begins. During this analysis, the OI should co-ordinate with the AI to perform a detailed examination of the proposed MEL document and other supporting documents and procedures. If the operator does not currently have an MEL program but is seeking authorization for such a program, its MEL management program must also be reviewed for acceptability. Inspectors should examine the technical content and quality of the proposed MEL document and other supporting documents and procedures as follows:

(1) **Timely Review.** OIs should promptly address all deficiencies and notify the operator of any discrepancies or outstanding issues. The OI and the operator may informally co-ordinate by telephone or other means to clarify minor discrepancies or misunderstandings.

(2) **Reference Material.** Inspectors should use the MMEL and this guidance as the primary reference document when reviewing and approving the MEL. In addition, inspectors should use the following references:

(i) Related Civil Aviation Regulations;

(ii) Approved Flight Manual;

(iii) Operator's OpSpecs;

(iv) Operator's manuals;

(v) MMEL policy letters (as required).

(3) **Document Deficiencies**

(4) **Change in Schedule.** If certain MMEL items must be addressed within a specific time frame, the OI should notify the operator of this requirement as soon as possible. If the operator is unable to meet these schedule requirements, the OI should negotiate a new schedule with the operator.

(5) **MEL Evaluation.** Inspectors should compare the operator's MEL changes against the corresponding items in the current MMEL for the specific aircraft type. In addition, inspectors should verify that the operator's MEL contains the following required items:

(i) **Cover Page (Optional if covered otherwise).** The MEL cover page contains the operator's name and the make and model of the aircraft to which the MEL applies.

(ii) **Table of Contents (Required).** The table of contents contains a list of all of the pages in the MEL by title and the corresponding page identification (usually a page number).

(iii) **Log of Revisions (Required).** 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.

(iv) **Preamble (Required).** The standard MMEL preamble section must be reproduced word for word in each MEL, without modification, except for reference to the applicable regulations.

(v) **Definitions (Required).** The standard MMEL definitions section must be reproduced word for word in each MEL, without modification.

(vi) **Control Page (Required).** 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 may also be used as a means of conveying CAA approval of the MEL. The control page is also referred to as the "List of Effective Pages."

(6) **Minimum Contents.** 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 (normally latest number revision)

(iv) A signature block containing space for signature of the POI (only if this page is used as a means of conveying CAA approval of the MEL);

(v) Optional Contents. The operator may include additional information on the control page to provide flexibility and additional approval functions;

(vi) Highlights of Change Page (Optional). This page contains a synopsis of the changes made by the operator in each revision.

(7) **Additional Items.** The operator may include additional information sections in excess of the six required sections:

(i) **Individual Air Transport Association of America (ATA) System Page Evaluation.** These pages contain a list of individual items of equipment in the aircraft together with provisions for the operation of the aircraft when the items are inoperative. The reviewing inspector should examine the individual ATA system pages, ensuring that the MEL is at least as restrictive as the MMEL and that operator's procedures are adequate and appropriate. The inspector should also examine the material contained on these pages for conflict with the CARs, with the approved flight manual emergency procedures and limitations, and with the operator's OpSpecs. The following elements are included:

(A) **The ATA Numbering System.** Operators shall use the standard ATA numbering system, similar to the manner used in the MMEL, for numbering individual pages in this section. An example of this numbering system would be the communications page; the first page would be 23-1; the second page would be 23-2.

(B) **Individual Items of Equipment.** The MMEL contains listed items of installed equipment that may be inoperative.

(ii) **All MMEL Items will be listed on the Operator's MEL.** All equipment not listed in the MEL must be operative.

(iii) **MMEL Items Listed on the Operator's MEL.** Each piece of equipment that is installed on the aircraft and that is contained in the MMEL, for which the operator seeks relief and that is appropriate for its operation, should be listed on the appropriate page of the operator's MEL within the associated ATA system. The operator may be more restrictive than permitted by the MMEL. Each item title on the operator's MEL will generally be entered exactly as it is shown on the MMEL. Exceptions include the following:

(A) When the MMEL uses a generic term to address equipment that serves a similar function when various operators use different names for that equipment; or

(B) When the MMEL lists functions rather than individual pieces of equipment within that category such as "Navigation Equipment" or "Communications Equipment." In such cases, the MEL must contain a list of the individual equipment items or systems within that category that are actually installed on the aircraft, such as "VHF Communications Transceivers." When items of this type consist of several components of a system, the item may be listed as a complete system, such as "VOR Navigation System," consisting of a VOR navigation receiver and its associated indicator. The inspector should ensure that the operator has not listed inappropriate items or items that are listed individually elsewhere in the MMEL. However, the CAA is authorised to approve generic MMEL relief for navigation or communication equipment that is appropriate such as ILS, VOR, VHF, HF and GPS.

(iv) **Items Listed on the MMEL but not installed on the Operator's Aircraft.** The OI will only accept an item of equipment being listed on the MMEL but not installed on the operator's aircraft by listing the item as shown on the MMEL, and indicating the Number Installed as zero. In this case, the "Number Required for Dispatch" would also be zero, and the remark "Not Installed" will be noted under "Remarks and Exceptions"; repair category designators should be omitted.

(v) **Triple Asterisk Symbol (***).** The triple asterisk symbol is used in an MMEL to indicate that an item is not installed on some models of the aircraft. Operators shall not produce or use this symbol in the MEL.

(vi) **Repair Category.** Each item of equipment listed in the operator's MEL, except for Administrative Control Items and Passenger Convenience Items, must include the repair category designator for that item as shown on the MMEL. These designators, categorised as "A," "B," "C," or "D," indicate the maximum time that an item may remain inoperative before repair is made. The actual repair categories corresponding to these letters are provided in the "Notes and Definitions" section of the MMEL. The operator may choose to adopt a more restrictive repair category than the one shown on the MMEL, but may not relax the requirement. Components or subsystems of items categorised in the MMEL, such as items of communications or navigation equipment that are not listed individually in the MMEL, must retain the repair category shown on the MMEL when listed as separate items on the MEL.

(vii) **Passenger Convenience Items.** Passenger convenience items relate to the convenience, comfort, and entertainment of passengers and must never affect the airworthiness of the aircraft. These items do not carry a specific repair category; however, the operator should make repairs to convenience items within a reasonable time frame. Normally, the operator lists these items individually in ATA chapters 25 and 38. Passenger convenience items may be included elsewhere in the MEL if clearly identified as passenger convenience items. OIs should review the proposed MEL to decide which passenger convenience items are components of an item appearing in the MMEL. When listing passenger convenience items on the MEL, the operator must list each item for which the operator wishes relief. Passenger convenience items also apply to cargo aeroplanes, as appropriate.

(viii) **Administrative Control Items.** "Administrative control item" means an item listed by the operator in the MEL for tracking and informational purposes. It may be added to an operator's MEL by approval of the OI, provided no relief is granted, or provided conditions and limitations are contained in an approved document (such as Structural Repair Manual or airworthiness directive). Examples of items that could be considered administrative control items are cockpit procedure cards, medical kits, and life vests. These items should appear in the appropriate ATA chapter and would not have a repair category. When the operator chooses this course of action, the OI must examine each proposed administrative control item on the operator's proposed MEL to ensure that the following conditions are met:

(A) No item is included as an administrative control item if it is included elsewhere in the MMEL;

(B) Administrative items are not included as a subsystem of items listed in the MMEL;

(C) Administrative items are not granted relief in the MEL unless the release conditions or limitations are contained in another approved document;

(ix) **Number of Items Installed.** The MEL will normally contain the actual number of items of particular equipment installed on the aircraft. This number may be either greater or less than the number shown on the MMEL. The MMEL shows the number of items installed as the number of those items normally installed on a particular aircraft type. Individual aircraft operated by an operator may have a different number of items. Frequently the MMEL shows a dash in the "Number Installed" column. This dash indicates that variable quantities of these items are usually installed on the aircraft. If the operator has an MEL for a single aircraft or identical aircraft, the actual number of these items on the particular aircraft must be listed in the MEL. If the operator has an MEL for multiple aircraft, and the equipment is not installed on all aircraft or there is a variable quantity between aircraft, the operator's MEL will reference specific aircraft identifications (by registration number) the "Number Installed" on each aircraft or the "Number Installed" column may contain a dash.

(x) **Number of Items Required for Dispatch**. Normally, the number of items required for dispatch is determined by the State of aircraft design, and may be modified in the MEL in only two cases:

(A) When the item is not installed on the aircraft, in which case a zero will be shown as the number required for dispatch;

(B) When the item is shown in the MMEL as being a variable number required for dispatch.

NOTE: In this case, the reviewing inspector should ascertain that the operator has made a determination as to the number required for dispatch. There can be several factors that establish this number. In some cases, it is determined by a reference to specific requirements listed in the "Remarks or Exceptions" column of the MMEL. An example would be cabin lights. In this case, the MMEL may show a variable number installed while the "Remarks or Exceptions" column might state that 50 percent of those items be operable. The number required for dispatch would therefore be 50 percent of the number of lights determined to be actually installed on the individual aircraft. Another case where the MMEL may show a variable number required for dispatch is when the "Remarks or Exceptions" column of the MMEL contains the statement, "As Required by regulation." In this case, the number is the minimum quantity of these items that must be installed for operations under the least restrictive regulation under which the operator conducts operations.

(xi) **"Remarks or Exceptions.** "Certain items demand specific relief developed by the operator as authorised through OpSpecs, area of operation and CARs. "As required by regulation" is not a relief statement. The operator must develop or address the specific requirement of the CARs.

(xii) **Other Items.** Other items in which relief has been specifically written to reflect actions or restrictions to the operation may be changed only when MMEL is changed. Generally, they contain "O" and "M" procedures in which the operator develops its company procedures to comply with the MEL.

(xiii) **Evaluation of Associated Documentation.** The inspector should evaluate the supporting documentation submitted by the operator to ensure that it is complete and appropriate:

(A) **The Operator's Manuals**. Inspectors should evaluate the operator's Operations Manual and Maintenance Control Manual to ensure that they contain adequate guidance for the operator's personnel in conducting operations using the MEL. Generally, if the operator does not presently have an MEL program, the applicable portions of its manuals and other guidance material should be submitted at the time the MEL is submitted for initial review. When evaluating the operator's manuals, inspectors should ensure procedures for documenting inoperative equipment (in the aircraft technical log) and any required maintenance procedures are clear. At a minimum, provisions for recording the following items shall be developed:

- An identification of the item of equipment involved;
- A description of the nature of the malfunction;
- An identification of the person making the entry;
- The MEL item number for the equipment involved;

(B) **Crew Notification**. The operator shall establish procedures for advising the pilot in command (PIC) of inoperative items and required procedures such as affixing placards, alternate operating procedures, and instructions for the isolation of malfunctions. The PIC and the operator are both responsible for ensuring that flights are not

dispatched or released until all of the requirements of the "O" procedures and "M" procedures have been met.

(C) **Flight Restrictions.** The operator shall establish procedures to ensure that dispatch or other operational control personnel, as well as the flightcrew, are notified of any flight restrictions required when operating with an item of equipment that is inoperative. These restrictions may involve maximum altitudes, limitations for the use of ground facilities, weight limitations, or a number of other factors.

(D) **Training Program Material.** Inspectors should ensure that the operator's flight and ground personnel training programs contain adequate instruction for MEL use.

(E) **MEL Management Program.** The OI should co-ordinate closely with both the MI and the operator on the MEL management program. Operators must develop an MEL management program as a comprehensive means of controlling the repair of items listed in the approved MEL. Operators must include a description of the program in their maintenance manual, maintenance control manual, or other documents. The MEL management plan must include the following:

- A method for tracking the date and time of deferral and repair;
- The procedures for controlling extensions to maximum repair categories;
- A plan for co-ordinating parts, maintenance, personnel, and aircraft at a specific time and place for repair;
- A review of items deferred due to unavailability of parts;
- The specific duties and responsibilities of the managers of the MEL management program, listed by job title.

36.8.11.5 Terms and Conditions of Relief

(a) This section contains the terms and conditions of relief granted to an operator for operating the aircraft with items of installed equipment that are inoperative. The operator must state the terms and conditions under which operations may be conducted with inoperative items for the operator's particular organization and aircraft. The reviewing inspector must address the following elements of this section:

(1) **Standard Phraseology.** When reviewing the MEL, inspectors should ensure that the operator generally uses the phraseology used in the MMEL to ensure clarity and standardization. In some cases modified phraseology is appropriate for the operator's specific installation.

(2) "**As Required by Regulations.**" The general term, "As Required by Regulations," applies to ATA chapters 23 (Communications), 31 (Instruments), 33 (Lights), and 34 (Navigation Equipment). When this term appears in the "Remarks or Exceptions" section of an MMEL, the operator's MEL must contain the specific conditions that apply. The operator must research the applicable regulations in detail to develop the appropriate provisions that apply to that operator's particular operations. An example of a typical distance measuring equipment (DME) remark could read, "Not required for flights below FL 240."

NOTE: The operator's MEL must clearly establish the actual requirement for its operation when the MMEL stipulates "As required by regulation." It is not acceptable for the MEL to simply refer to the regulation.

(3) **"O" AND "M" Procedures:**

(A) "O" and "M" procedures must contain descriptions of the individual steps necessary to accomplish each process. For example, if the MMEL contains an "M" symbol with a provision that a valve must be closed, the operator must include the appropriate procedures to close the valve as part of the operator's manual or MEL. The reviewing inspector must ensure that the procedure addresses the following:

- How the procedure is accomplished;
- The order of accomplishing the elements of the procedure;
- The actions necessary to complete the procedure.

(B) For example, if the MMEL contains an "M" symbol with a provision that a valve must be closed, the operator must include detailed steps and actions for closing and testing the valve and installing the placard. The actual written procedures may be contained within the "Remarks or Exceptions" section of the MEL, in separate documents, or attached as an appendix. Inspectors should consult the Guidelines for "O" and "M" Procedures of the MMEL when evaluating these procedures. The section about the Guidelines for "O" and "M" Procedures does not have to be contained within the operator's MEL. If the "O" and "M" procedures are not contained within the MEL, the MEL should include a reference to the location of the procedures.

NOTE: While inspectors should ensure that the procedures are detailed and explicit, it is not necessary that the operator repeat obvious requirements of the MEL item, of the regulation, or of other established standards.

(C) **"O" Procedures.** The "(O)" symbol indicates a requirement for a specific operations procedure that must be accomplished in planning for and/or operating with the listed item inoperative. Normally, these procedures are accomplished by the flightcrew; however, other personnel may be qualified and authorized to perform certain functions. The satisfactory accomplishment of all procedures, regardless of who performs them, is the responsibility of the operator. Appropriate procedures are required to be published as a part of the operator's manual or MEL.

(D) **"M" Procedures.** The "(M)" symbol indicates a requirement for a specific maintenance procedure, which must be accomplished prior to operation with the listed item inoperative. Normally these procedures are accomplished by maintenance personnel; however, other personnel may be qualified and authorized to perform certain functions. Maintenance personnel should accomplish procedures requiring specialized knowledge or skill, or requiring the use of tools or test equipment. The satisfactory accomplishment of all maintenance procedures, regardless of who performs them, is the responsibility of the operator. Appropriate procedures are required to be published as part of the operator's manual or MEL.

(E) **Provisos.** The "Remarks and Exceptions" section of the MMEL generally contains provisos that include specific conditions under which an item of equipment may be inoperative. These provisos must be carried over either verbatim into the operator's MEL or by using equivalent terminology. Provisos are distinct from "O" and "M" procedures. A procedure is an action that must be performed. A proviso is a condition that must exist. For a proviso that operations must be conducted under VFR, an operation under an IFR flight plan is not permitted, regardless of the weather

conditions. When reference is made to visual meteorological conditions (VMC), operations may be conducted under an IFR flight plan, but only in VMC.

36.8.11.6 Demonstration Phase

A demonstration phase is normally not required for an MEL approval. When an operator is developing an MEL in conjunction with original certification for initial issuance of an operating certificate, or when instituting service with a new aircraft type, a demonstration of the operator's ability to use an MEL may be conducted during any required aircraft demonstration flight.

36.8.11.7 OI Approval of the Operator's MEL

(a) The AI must ensure that prior to authorizing the use of the approved MEL for an operator that the MEL management program is approved. Once the FOI and AI are satisfied that all requirements of this chapter have been met and the MEL is in full compliance with all applicable requirements the FOI sends the letter of approval to the operator and stamps and signs the list of effective pages. A sample letter is provided in Appendix to this chapter.

36.8.12 MEL USE IN SERVICE

36.8.12.1 General

(a) This section contains specific direction, guidance, and procedures for operations and airworthiness inspectors on the revision, administration, and policy application for administering MELs that have been approved for use by operators operating under the provisions of the LCARs.

36.8.12.2 Revision Procedures

(a) ***Revisions to an MEL.*** Either the operator or the CAA may initiate revisions to an operator's MEL. Operator initiated revisions may be equal to or more restrictive than the Master Minimum Equipment List (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; the approval by the operations inspector (OI) 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. The issuance of an airworthiness directive (AD) will not be the basis for change to an operator's MEL. Instead, ADs will be referred to the CAA which will coordinate with the appropriate Civil Aviation Authority or the State of Design for guidance.

NOTE: When operations ("O") or maintenance ("M") procedures are required per the MMEL, it is the operator's responsibility to develop appropriate procedures or to use manufacturer developed procedures in order to meet the requirements for inclusion of the item on the MEL. The OI is not authorised to grant MEL relief unless the operator provides acceptable "O" and "M" procedures.

(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 OI using the same procedures, as those required for an original MEL approval;

(2) Items 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;

(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 should follow the established procedures for the approval of major modifications to avoid any conflicts with the MMEL. Since the CAA requires prior approval of major modifications by the State of Design, any impact on the MMEL would have been considered by the State of Design, who, in such cases, would have processed any required MMEL revisions.

36.8.12.3 MEL Revisions Initiated by The CAA

(a) When the CAA of the State of Design revises an MMEL, operators, manufacturers and the CAA receive notification by printed or electronic means. Such revisions are to be considered as initiated by CAA. Operators must track such revisions and amend the MEL accordingly, as described below:

(1) ***Non mandatory Revision.*** MMEL revisions that only provide additional relief are reflected by a lower case letter suffix following the MMEL numeric revision number; for example, MMEL Revision No. 8 would become Non mandatory Revision No. 8a. Any MMEL changes that are less restrictive than the operator's MEL 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) ***Global Change***. A global change is another type of non-mandatory revision. A global change generally applies to items of equipment that are required to be installed by a new regulatory requirement, such as a cockpit voice recorder (CVR), or a traffic alert and collision avoidance system (TCAS). Items affected by policy decisions of the CAA of the state of design are also global changes. The global change does not replace the normal MMEL revision process. When a standard revision to an MMEL is issued, it will include all global changes issued to date. However, since the process for revising the MMEL can be lengthy, and the operator's MEL must be based on the MMEL, a global change will allow an operator to revise its MEL prior to the change in the MMEL. The OI has the authority to approve the operator's MEL revision on the basis that the global change is an approved addendum to the existing MMEL. Availability of global changes may be determined by visiting the website of the State of Design CAA;

(3) ***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. For example, the next mandatory revision following the non-mandatory revisions 6a, 6b, or 6c would be revision 7. 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 OI and the operator. In all cases, the following guidelines apply: where a MMEL revision does not affect a procedure, the time of

MEL amendment is 60 days, where it does affect a procedure, amendment time is 90 days;

(4) ***OI Initiated Revision.*** The OI may initiate an MEL revision that is not based on a revision to the MMEL. The OI should make such a request to the operator in writing, stating specific reasons why the revision is necessary. An OI initiated revision may be made upon the discovery that an operator has modified an aircraft or that faulty maintenance or operations procedures exist. The OI should work closely with the operator and make every effort to resolve the matter in a mutually agreeable manner. The operator should be given a reasonable time period to make the required changes depending on whether safety of flight is affected. In the event that the operator declines to make the required change, the OI may consult with the AI to rescind the authority for the MEL. to initiate an amendment of the operator's.

36.8.13 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.

36.8.14 TRACKING OF REVISION STATUS

OIs shall maintain a copy of the current MEL for each assigned operator's aircraft type. The OI should refer to the MMEL and the operator's MEL to track the revision status of the MEL.

36.8.15 AVAILABILITY OF MEL FOR FLIGHT CREWMEMBERS

(a) Flight crewmembers 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. For example, the flight crew may obtain access to the MEL through the ARINC Communications Addressing and Reporting System (ACARS). 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, specifically "O" and "M" procedures. Direct access should 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 program.

36.8.16 METHOD OF AUTHORIZING FLIGHT CREWMEMBER ACCESS TO MEL

(a) OIs may approve a method other than printed means for providing the flight crew with access to the MEL. Before authorizing such a method, the OI must be confident that the operator has an adequate means in place to provide flight crews with the complete equivalent of the actual text of the MEL. This method must be described in detail in the operator's CAA Operations Manual or equivalent. When the decision is made to authorize this alternative method, the OI should use appropriate provisions, by referring the applicable CARs and the appropriate section of the operator's manual.

36.8.17 DISCREPANCIES DISCOVERED DURING FLIGHT

(a) 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 must handle any equipment failure in accordance with the approved flight 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 flight manual contains procedures for handling that discrepancy, or if the pilot in command (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 dispatch or flight release, the PIC must handle a discrepancy that occurs after the issuance of the release, but before the flight departs, in accordance with the MEL. The PIC must obtain a new or amended dispatch or flight release, as well as any required airworthiness release. This new or amended release must contain any applicable flight restrictions necessary for operation with any item of equipment that is inoperative.

36.8.18 DOCUMENTATION OF DISCREPANCIES

(a) 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.

36.8.19 CONFLICT WITH AIRWORTHINESS DIRECTIVES

(a) Occasionally an AD may apply to an item of equipment that may be authorized 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. In all cases, when an AD has been issued, the operator must comply fully with the terms of 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.

36.8.20 INTERRELATIONSHIPS OF INOPERATIVE COMPONENTS

(a) When the MEL authorizes a component of a system to be inoperative, only that component may be affected. When a system is authorized 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 authorized in the MEL. The operator must consider the interrelationship of inoperative components. This consideration must include the following:

(1) The interrelationship of one piece of equipment on another;

(2) The crew workload;

(3) The operation of the aircraft;

(4) The flight restrictions.

36.8.21 REPAIR CATEGORIES

(a) 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.

36.8.22 MEL FOR LEASED AIRCRAFT

(a) MEL for Leased Foreign Registered Aircraft:

(1) An MEL for a particular leased foreign registered aircraft must not be less restrictive than the CAA approved MEL for the same type of aircraft;

(2) The foreign country of registration of the leased aircraft may require that their aircraft be operated in accordance with their approved MEL, in which case any less restrictive changes to this MEL must be approved by the foreign regulatory authority. In such case the CAA will coordinate with the State of Registry, to ensure that its approval of the MEL does not affect the aeroplane's compliance with the airworthiness requirements applicable in that State.

(b) MELs for Foreign Leased Liberia Registered Aircraft

(1) CAA reviews each lease and approves or accepts the use of an MEL for such aircraft based on whether a bilateral airworthiness agreement or a technical arrangement exists between LCAA and the foreign regulatory authority and it has been determined that the MEL procedures are acceptable.

(2) If there is no agreement between LCAA and the foreign authority a review of the foreign operator's MEL is conducted to determine that it is consistent with the Liberia airworthiness requirements.

36.9 CONFIGURATION DEVIATION LISTS

36.9.1 GENERAL

(a) 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 authorized by the State of aircraft design. Evaluation and approval of CDLs are functions of the State of aircraft design.

36.9.2 DEVELOPMENT AND APPROVAL OF A CDL

(a) An aircraft manufacturer develops a proposed CDL for a specific aircraft type. Engineering specialists submit the proposed CDL to the responsible CAA for approval. The CAA will then co-ordinate with the appropriate aircraft evaluation groups to resolve any problems and discrepancies prior to approving the CDL. The CDL may be a stand-alone document and part of the MMEL or the Structure Repair Manual, incorporated into the limitations section of the aeroplane flight manual (AFM) as an appendix 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. The operations inspector, in coordination with the airworthiness may approve the CDL as part of the AFM or operators MEL, based on the originally approved AFM or MMEL by the State of design, as applicable, and the acceptance of the type certificate by the CAA. No changes are allowed to the originally approved document.

36.9.3 USE OF THE CDL

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

(1) The limitations in the CDL when operating with certain equipment missing (except as noted in the appendix to the Approved Flight Manual);

(2) The flight operations, restrictions, or limitations that are associated with each missing airframe and engine part;

(3) 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 crewmembers.

36.9.4 CDL USE APPROVAL

(a) It is the CAA responsibility to 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.

(b) The operations inspector (OI) must ensure that the operator has developed appropriate procedures for the PIC and, if appropriate, procedures for notifying dispatch of the CDL missing parts by an appropriate notation in the aircraft technical logbook or other acceptable means.

36.10 PROCEDURES/ JOB PERFORMANCE SUBTASKS

(a) Receive request from operator for approval to use a Minimum Equipment List (MEL).

(1) Require a MEL to be produced for initial certification.

(b) Open work tracking record.

(c) Access the MMEL for the specific aircraft.

(1) Provide Operator with copy of MMEL.

(d) Evaluate MEL submitted by Operator.

(1) Compare operator's MEL to MMEL.

(2) Disapprove Operators MEL for being less restrictive or not based on the MMEL.

(e) Approve Operator's MEL.

(f) Document the evaluation of the MEL.

(1) Maintain a copy of approved MEL in CAA office.

(2) Update national data base.

(g) Close work tracking record.

36.11 TASK OUTCOMES

(a) *Task Completion.* Successful completion of this task will result in the following:

(1) Approval of the Operator’s MEL or CDL;

(2) Update of operator’s information in ISATS database;

(3) Recording of OJT in ITS if applicable.

(b) *Document Task.* File all supporting paperwork in the operator/applicant's office file such as update the aircraft database.

3.3 APPENDIX 29-A: JOB AID: AW-024/OP-028-MEL Evaluation

FILE REFERENCE: _____

Date		**Control #**	
Name of Operator		**AOC #**	
State of Operator		**Aircraft MMS**	
Location		**Aircraft Reg#**	
Destination		**PIC #**	
Action Taken		**Other PEL#**	

KEY PERSONNEL MET:

	NAME	TITLE
1.		
2.		
3.		
4.		
5.		
6.		

PLEASE CHECK THE APPROPRIATE BOX FOR THE FOLLOWING; SATISFACTORY (S), NOT SATISFACTORY (NS) OR NOT APPLICABLE (N/A). INDICATE REGULATORY OR OTHER REFERENCE(S) FOR NOT SATISFACTORY (NS) ITEMS WHERE APPLICABLE. PROVIDE FURTHER DETAILS IN THE REMARKS SECTION IF REQUIRED.					
		CHECKLIST ITEMS			
REFERENCE	**1**	**EXAMINE AIRWORTHINESS AND REGISTRATION CERTIFICATES TO ENSURE THE FOLLOWING:**	**S**	**NS**	**N/A**
	1.1	Bound in a secure form (not loose)?			
	1.2	Exterior of binder clearly indicates manual content?			
	1.3	Table of contents?			
	1.4	Tabbed by ATA chapter?			
REFERENCE	**2**	**MANUAL CONTROL PROCESS**	**S**	**NS**	**N/A**
	2.1	Copies numbered for controlled issuance (Manual Distribution List).			
	2.2	Amendment issuance tracking process.			
	2.3	GCAA issued numbered volume.			
REFERENCE	**3**	**MANUAL REVISION PROCESS**	**S**	**NS**	**N/A**

	3.1	Revision Instructions adequate.			
	3.2	Revision page for revision entry.			
	3.3	List of effective pages provided and correct.			
	3.4	Last revision to individual pages identified.			
REFERENCE	**4**	**MANUAL REFERENCING SYSTEM**	**S**	**NS**	**N/A**
	4.1	Master table of contents easy to find and use.			
	4.2	Table of contents easy to find and use.			
	4.3	Index, if included, easy to find and use.			
	4.4	Tabbed as necessary for usability without difficulty.			
REFERENCE	**5**	**INDIVIDUAL PAGE PRESENTATION**	**S**	**NS**	**N/A**
	5.1	Page numbered in chronological sequence (by chapter or single document).			
	5.2	Last revision number/ date appears on each page.			
	5.3	Company name and Logo appears on each page except 5.4 below.			
	5.4	If manufacturer's document is submitted in lieu of a company manual, does the manufacturer's name appear on each page.			
	5.5	For all manufacturers' documents submitted, a manufacturer's letter or reference document is provided to substantiate current revision number/date.			
	5.6	ATA chapter identified?			
REFERENCE	**6**	**PARAGRAPH NUMBERING**	**S**	**NS**	**N/A**
	6.1	Paragraphs and sub-paragraphs numbered or alphabetized for ease of reference.			
REFERENCE	**7**	**INDIVIDUAL ITEM PRESENTATION & CONTENT REFERENCING**	**S**	**NS**	**N/A**
	7.1	Proper MMEL-MEL number comparison?			
	7.2	Proper item title?			
	7.3	No item relief other than that shown in MMEL is allowed?			
	7.4	Aircraft for which item is applicable identified by R/N or S/N?			
	7.5	Number of item installed correct?			
	7.6	Aircraft with non-standard installation identified by R/N or S/N?			
	7.7	Correct repair interval listed?			
	7.8	Number required for dispatch conforms to MMEL?			

	7.9	Placarding symbols provided in accordance with MMEL?			
	7.10	(O) & (M) symbols provided in accordance with MMEL?			
	7.11	Remarks correctly aligned with applicable "required" numbers?			
	7.12	Wording of MEL remarks not less restrictive than MMEL (special attention to use of "or" & "and"?			
	7.13	Configuration (# installed/required) allowed is in accordance with all applicable regulations?			
	7.14	All references to applicable regulations converted to remarks format and aligned with "required" number?			
	7.15	All references to "by AFM" converted to remarks format?			
	7.16	Adherence (#installed/required) to all special restrictions applicable to operations authorized for AOC holder included?			
	7.17	All references to operations not authorized to AOC holder deleted?			
	7.18	Tables referenced for ease of use.			
	7.19	Figures referenced for ease of use.			
	7.20	Appendicies referenced for ease of use.			
REFERENCE	**8**	**INDIVIDUAL (O) & (M) PROCEDURES**	**S**	**NS**	**N/A**
	8.1	There is an ops procedure for every MMEL (O) reference?			
	8.2	There is an maint procedure for every MMEL (M) reference?			
	8.3	Procedures provided in accordance with manufacturers MEL dispatch guide conform to the source references?			
	8.4	Maintenance procedures taken from sources other than the manufacturer's dispatch guide are technically correct, meet all remarks and have the source cited?			
	8.5	Operations procedures taken from sources other than the manufacturers MEL dispatch guide are technically correct, not a normal operating procedure and meet all remarks?			
	8.6	No normal operating procedures are provided?			
	8.7	All procedures apply to the "dispatch" of aircraft?			
REFERENCE	**9**	**CDL EVALUATION**	**S**	**NS**	**N/A**
	9.1	CDL properly tabbed in rear of MEL?			
	9.2	CDL contents clearly identified?			
	9.3	CDL items in accordance with current manufacturers guidance?			
REFERENCE	**10**	**MANUAL CONTENTS CONFORMANCE**	**S**	**NS**	**N/A**
	10.1	**Preamble**			
	10.2	**General**			

	10.3	REFERENCEs / a compliance statement.			
	10.4	Definitions and Terminology.			
	10.5	Maintenance Actions.			
	10.6	ATA CHAPTERS – (SYSTEMS)			
	10.7	CONFIGURATION DEVIATION LIST			
	10.8	CONFIGURATION DEVIATION LIST SYSTEM			
REFERENCE	11	SPECIAL PROCEDURES	S	NS	N/A
	11.1	RVSM			
	11.2	PBN			
	11.3	CAT II/CAT III			
	11.4	MNPS			
	11.5	EDTO			
	11.6	LOW VISIBILITY			

Item Number	REMARKS

RECOMMENDED APPROVAL	**S .....** **NS .....**	**REASON LISTED FOR NO OPTION:**		
AIRWORTHINESS INSPECTOR NAME & SIGNATURE			**INSPECTOR STAMP**	
OPERATIONS INSPECTOR NAME & SIGNATURE			**INSPECTOR STAMP**	

3.4

3.5 APPENDIX 29-B: Example of Letter to Operator Approving an MEL

Civil Aviation Authority

[date]

Name
Director of Operations
International Air, Ltd.
Address
AOC #

Dear [Name]:

This letter is to inform you that the Minimum Equipment List (MEL) submitted for approval on June 6 has been approved. The control page (or list of effective pages) has been duly signed.

Sincerely,

Name
Manager of Flight Safety Standards

3.6 APPENDIX 29-C: Example of Letter Denying Approval of Mel

[date]
Name
Director of Operations
International Air, Ltd.
Address

Dear (Name):

This letter is to inform you that the Minimum Equipment List (MEL) submitted for approval on June 6 is being returned to your office. A comparison of International Air's MEL against the current Master Minimum Equipment List (MMEL) shows that in the following places International Air's MEL is less restrictive and/or not in accordance with the MMEL or CAA Technical Circular TC 120-004 Approval of an MEL and CDL.

Specifically, these System and Sequence Numbers do not comply with acceptable procedures:

1. Page 24-1, item 3. DC Loadmeter
2. Page 28-1, item 1. Boost Pumps
3. Page 30-3, item 13. Pitot Heater

Additionally, International Air's MEL does not include the required Control Page.
If you have further questions on the MEL approval process, please feel free to contact this office.

Sincerely,

Name
Operations inspector

CHAPTER 30: SPECIAL OPERATIONS APPROVALS

37.8 OBJECTIVE

3.7

(a) This chapter provides guidance on the special maintenance and operational approvals Including—

(1) Reduced Vertical Separation Minima (RVSM)

(2) Required Navigation Performance (RNP)

(3) All-Weather Operations (AWO)

(4) Minimum Navigation Performance Specifications (MNPS)

(5) Extended Range Twin-Engine Operations (EDTO)

37.9 REDUCED VERTICAL SEPARATION MINIMUMS (RVSM) APPROVAL

37.9.1 PURPOSE

(a) The purpose of this section is to provide guidance to LCAA personnel in the evaluation and approval of Reduced Vertical Separation Minimums (RVSM).

37.9.2 POLICY

(a) Airspace where RVSM is applied should be considered special qualification airspace. The specific aircraft type or types that the operator intends to use will need to be approved by the LCAA before the operator conducts flight in RVSM airspace. In addition, where operations in specified airspace require approval in accordance with an ICAO Regional Navigation Agreement, an operational approval will be needed. This document provides guidance for the approval of specific aircraft type or types, and for operational approval.

(b) Each aircraft type that an operator intends to use in RVSM airspace should have received RVSM airworthiness approval from the aircraft certificating authority prior to approval being granted for RVSM operations, including the approval of continued airworthiness programs.

(c) It is accepted that aircraft that have been approved in compliance with JAA Information Leaflet No. 23 or FAA Interim Guidelines 91- RVSM satisfy the airworthiness criteria.

(d) The integrity of the design features necessary to ensure that altimetry systems continue to meet RVSM approval criteria should be verified by scheduled tests and inspections in conjunction with an approved maintenance program. The operator should review its maintenance procedures and address all aspects of continued airworthiness that may be relevant.

(e) Adequate maintenance facilities are required to enable compliance with the RVSM maintenance procedures.

(f) Each operator requesting RVSM operational approval must establish RVSM maintenance and inspection practices acceptable to the LCAA that include any required maintenance specified in the data package. Operators of aircraft subject to a continuous airworthiness maintenance program must incorporate these practices in their program.

37.9.3 PROCEDURE

(a) The following materials, together with completed LCAA FORM, should be submitted to the Authority, in sufficient time to permit evaluation, before the intended start of RVSM operations.

(1) *Airworthiness Documents:* Documentation that shows that the aircraft has RVSM airworthiness approval.

(2) *Description of Aircraft Equipment:* A description of the aircraft equipment appropriate to operations in an RVSM environment.

(3) *Training Programs and Operating Practices and Procedures:* Holders of Air Operators Certificates (AOC) may need to submit training syllabi for initial, and where appropriate, recurrent training programs together with other appropriate material(s) to the LCAA.

(4) *Past Performance:* Relevant operating history, where available, should be included in the application. The applicant should show that changes needed in training, operating or maintenance practices to improve poor height keeping performance have been made.

(5) *Minimum Equipment List:* Where applicable, a Minimum Equipment List (MEL), adapted from the Master Minimum Equipment List (MMEL) and relevant operational Directives, should include items pertinent to operating in RVSM airspace.

(6) *Maintenance:* When application is made for operational approval, the operator should present a maintenance program acceptable to the LCAA.

(7) *Plan for Participation in Verification/Monitoring Programs:* The operator should establish a plan acceptable to the LCAA, for participation in any applicable verification/monitoring program. This plan will need to include, as a minimum, a check on a sample of the operator's fleet by an independent height monitoring system, and an analysis of reliability data.

(b) The following items should be reviewed, as appropriate:

(1) Maintenance Manuals.

(2) Structural Repair Manuals.

(3) Standard Practices Manuals.

(4) Illustrated Parts Catalogues.

(5) Maintenance Schedule.

(6) MMEL/MEL.

(c) If the operator is subject to an approved maintenance program, that program should include, for each aircraft type, the maintenance practices stated in the applicable aircraft and component manufacturers' maintenance manuals. In addition, for all aircraft, including those not subject to an approved maintenance program, attention should be given to the following items:

(1) All RVSM equipment should be maintained in accordance with the component manufacturers' maintenance instructions and the performance criteria of the RVSM approval data package.

(2) Any modification or design change that in any way affects the initial RVSM approval should be subject to a design review acceptable to the responsible authority.

(3) Any repairs, not covered by approved maintenance documents, that may affect the integrity of the continuing RVSM approval, e.g. those affecting the alignment of pitot/static probes, repairs to dents or deformation around static plates, should be subject to a design review acceptable to the responsible authority

(4) Built-in Test Equipment (BITE) testing should not be used for system calibration unless it is shown to be acceptable by the aircraft manufacturer or an approved design organization, and with the agreement of the responsible authority.

(5) An appropriate system leak check (or visual inspection where permitted) should be accomplished following reconnection of a quick-disconnect static line.

(6) Airframe and static systems should be maintained in accordance with the aircraft manufacturer's inspection standards and procedures.

(7) To ensure the proper maintenance of airframe geometry for proper surface contours and the mitigation of altimetry system error, surface measurements or skin waviness checks will need to be made, as specified by the aircraft manufacturer, to ensure adherence to RVSM tolerances. These checks should be performed following repairs, or alterations having an effect on airframe surface and airflow.

(8) The maintenance and inspection program for the autopilot will need to ensure continued accuracy and integrity of the automatic altitude control system to meet the height keeping standards for RVSM operations. This requirement will typically be satisfied with equipment inspections and serviceability checks.

(9) Whenever the performance of installed equipment has been demonstrated to be satisfactory for RVSM approval, the associated maintenance practices should be verified to be consistent with continued RVSM approval. Examples of equipment to be considered are:

(i) Altitude alerting.

(ii) Automatic altitude control system.

(iii) Secondary surveillance radar altitude reporting equipment.

(iv) Altimetry systems.

(d) The maintenance procedures should provide that aircraft identified as exhibiting height keeping performance errors that require investigation should not be operated in RVSM airspace until the following actions have been taken:

(1) The failure or malfunction is confirmed and isolated; and,

(2) Corrective action is taken as necessary and verified to support RVSM approval.

(e) Evaluate maintenance training as additional instruction may be necessary to support RVSM approval. Areas that may need to be highlighted for initial and recurrent training of relevant personnel are:

(1) Aircraft geometric inspection techniques.

(2) Test equipment calibration and use of that equipment.

(3) Any special instructions or procedures introduced for RVSM approval.

(f) Evaluate the proposed test equipment for the following:

(1) The test equipment should have the capability to demonstrate continuing compliance with all the parameters established in the data package for RVSM approval or as approved by the responsible authority.

(2) Test equipment should be calibrated at periodic intervals using reference standards whose calibration is certified as being traceable to national standards acceptable to the LCAA.

(g) The approved maintenance program should include an effective quality control program with attention to the following:

(1) Definition of required test equipment accuracy.

(2) Regular calibrations of test equipment traceable to a master standard. Determination of the calibration interval should be a function of the stability of the test equipment. The calibration interval should be established using historical data so that degradation is small in relation to the required accuracy.

(3) Regular audits of calibration facilities both in-house and outside.

(4) Adherence to approved maintenance practices.

(5) Procedures for controlling operator errors and unusual environmental conditions that may affect calibration accuracy.

(h) Approval to operate in designated RVSM for AOC holders will be accomplished thru operations specifications in accordance with Part 9. Each aircraft group for which the operator is granted approval will be listed in the Operations Specification.

(i) Non AOC Holders will be approved by "Letter of Authorization" detailing the information as required for the AOC Operations specifications. These approvals will be valid for a typically 2 years, and may require renewal.

37.10 MONITORING RVSM STANDARDS

37.10.1 PURPOSE

The purpose of this section is to provide guidance to LCAA inspectors in the monitoring and inspection of the programs utilized in maintaining RVSM standards.

37.10.2 GENERAL

(a) The incidence of height keeping errors that can be tolerated in an RVSM environment is small. It is expected of each operator to take immediate action to rectify the conditions that cause an error. The operator should report an occurrence involving poor height keeping to the responsible authority within 72 hours.

(b) The report should include an initial analysis of causal factors and measures taken to prevent repeat occurrences. The assigned LCAA inspector will determine any need for follow up reports.

(c) Occurrences that should be reported and investigated are errors of:

(1) TVE equal to or greater than ±90 m (±300ft),

(2) ASE equal to or greater than ±75 m (±245 ft), and

(3) Assigned altitude deviation equal to or greater than ±90 m (±300ft).

(d) Height keeping errors fall into two broad categories:

(1) errors caused by malfunction of aircraft equipment; and

(2) operational errors.

37.10.3 PROCEDURE

(a) The inspector will review all reports submitted by the organization to evaluate trends, margin of error, reported corrective actions, results of corrective action and any follow-up that may be necessary.

(b) Determine that the operator has procedures in place that make an effective, timely response to each height keeping error.

(c) Review the calibration of precision test equipment used in the maintenance of instruments and systems relating to RVSM. Ensure that all equipment is within the required tolerances.

(d) Review the training records for employees involved in the maintenance/inspection of the RVSM systems. Ensure all are current.

(e) An operator that consistently experiences errors in either category identified in paragraph 30.2.2 above should have approval for RVSM operations suspended or revoked until the required reliability can be achieved. If a problem is identified which is related to one specific aircraft type, then RVSM approval may be suspended or revoked for that specific type within that operator's fleet.

(f) The operator must satisfy the LCAA that the causes of height keeping errors are understood and have been eliminated and that the operator's RVSM programs and procedures are effective. At its discretion and to restore confidence, the LCAA may require an independent height monitoring check of affected aircraft to be performed.

37.11 REQUIRED NAVIGATION PERFORMANCE 10 (RNP-10)

(a) The purpose of this section is to provide policy and direction for obtaining operational approval of Required Navigation Performance 10 (RNP-10) capability. Guidance on airworthiness, continuing airworthiness, and RNP-10 operational approval are provided. The order enables an applicant to be approved as capable of meeting the NAVIGATION ELEMENT requirements when RNP-10 is specified. It does not address communications or surveillance requirements that may be specified to operate on a particular route or in a particular area. Those requirements are specified in other documents such as Aeronautical Information Publications (AIP) and the International Civil Aviation Organization (ICAO) Regional Supplementary Procedures Document (DOC 7030).

(b) While it is not anticipated at this time such operations will be applied for in Liberia, the background information and procedures are made a part of this manual for future use.

37.11.1 POLICY STATEMENT

(a) This guidance applies to all operators conducting operations under LCAR Part 9.

(b) The guidance is consistent with requirements that each AOC holder, operating a civil aircraft of Liberia registry outside of Liberia, to comply with ICAO, Annex 2, when over the high seas, and to comply with the Directives of a foreign country when operating within that country's airspace.

37.11.2 PROCEDURES

(a) General. To obtain operational approval, aircraft eligibility must be determined, appropriate flightcrew procedures for the navigation systems to be used must be identified by the applicant (e.g., Class II Nav procedures); and database use and operating procedures must be evaluated, if applicable. Then appropriate operations specifications or a letter of authorization (LOA) may be issued, as applicable to the operator.

(b) RNP-10 requires that each individual aircraft must be determined to be qualified, and the individual operator must be approved by LCAA before the operator conducts flight in RNP-10 airspace.

(c) The Advisory Circular provides guidance for the approval of operators for flight in airspace where RNP-10 is applied, and provides guidance on aircraft certification where RNP-10 eligibility cannot otherwise be determined, or where the operator chooses to lengthen RNP-10 approval time limits. The following paragraphs provide application guidelines for operators desiring to obtain RNP-10 operational approvals. Appendix 1 is a combined operator's and inspector's Job Aid that provides a concise summary of the steps required to complete the approval process.

(d) Determining Eligibility and Approval of Aircraft for RNP-10. Many aircraft and navigation system types currently in use in oceanic or remote area operations will qualify for RNP-10 based on one or more provisions of existing certification criteria. Thus, additional aircraft certification action may not be necessary for the majority of RNP-10 approvals. In these instances, additional aircraft certification will only be necessary if the operator chooses to claim additional performance beyond that originally certified or stated in the Airplane Flight Manual (AFM) and if the operator cannot demonstrate the desired performance through data collection, evaluate the procedures for corrective action following any engine shut-down, primary system failure, adverse trend or any other prescribed event that may require a verification flight or other follow- up action to ensure accomplishment.

(e) Eligibility Airworthiness Documents. Sufficient documentation should be available to establish that the aircraft has an appropriate AFM Supplement (AFMS), if applicable, and is otherwise suitably qualified to fly the intended routes (e.g., long-range navigation, communication).

(f) The applicant should provide a configuration list which details pertinent components and equipment to be used for long range navigation and RNP-10 operations.

(g) Maintenance. The operator should submit a maintenance program for approval in accordance with the following at the time the operator applies for operational approval.

(1) MEL. If RNP-10 operational approval is granted on the basis of a specific operational procedure (such as credit for Triple-Mix), operators should make MEL adjustments specifying the required dispatch conditions.

(2) CONTINUING AIRWORTHINESS (MAINTENANCE REQUIREMENTS).Aircraft in Group 1, Group 2, and Group 3 should have an established maintenance program for the individual navigation systems. For others installing navigation systems, the operator will submit those changes appropriate to their existing maintenance manual for review and acceptability.

(h) The advisory circular throughout the authorization process is required as it is a lengthy and complicated certification task.

37.12 ALL WEATHER OPERATIONS APPROVALS

(a) The purpose of this section is to provide LCAA Airworthiness personnel with the necessary guidance to evaluate and approve an operator's application/request for all weather operations.

(b) Definitions of terms used in all-weather operations:

(1) Low visibility as used in this context is taken to mean landing with minima less than Cat I or take-off with visibility less than 800 m

(2) **Cat I** means a precision approach with a decision height (DH) not lower than 200 ft and a visibility of not less than 800 m or RVR not less than 500m.

(3) **Cat II** means a precision approach with a DH between100ft and 200ft, and RVR not less than 350m.

(4) **Cat IIIA** means a precision approach with a DH below 100ft or no DH, and RVR not less than 200m.

(5) **Cat IIIB** means a precision approach with a DH lower than 50ftorwithno DH, and RVR between 200 m and 50m.

(6) **Cat IIIC** means a precision approach with no DH and no RVR limitations.

37.12.1 BACKGROUND

(a) CARs require air operators to be authorized prior to conducting low visibility take-off (LVTO) and Category II and III operations. Furthermore, the regulations prescribe requirements for ground and aircraft equipment, crew training and authorization, and the establishment of Category II and/or Category III operating procedures. Operating procedures should be contained in the operations manual. This chapter outlines the CAA procedures for providing authorization to air operators for LVTO; Category II and/or Category III operations.

(b) Depending on a variety of factors, an operator may be granted approval to conduct the following categories of approaches to the limits specified:

Category	Decision Height (DH)	Runway Visual Range (Meters)
CAT II	30 m (100 ft)	300 m
CAT III a	No DH or <30m (100 ft)	175 m

CAT III b	No DH or <15m (50 ft)	175 m to ≥ 50 m

(c) Low visibility take-off requirements are outlined in 1.6 of this chapter.

37.12.2 GENERAL APPROVAL REQUIREMENTS

(a) There are five elements involved in the approval of an operation by the CAA as follows:

(1) Authorization of the aeroplane and its equipment;

(2) Authorization of the use of the aerodrome;

(3) Authorization of the flight crew;

(4) Authorization of the operation; and

(5) Authorization of minima.

(b) Authorization of the aeroplane and its equipment. These are indicated by appropriate entries in the aircraft flight manual.

Note.— Detailed requirements outlined in 1.5.

(c) Authorization of the use of the aerodrome. Air operators are responsible for determining the facilities available at the aerodrome meet the requirements of CARs and shall ensure the following:

(6) The State of the Aerodrome authorizes use of the facilities and services;

(7) The appropriate Obstacle Clearance Altitude/Height (OCA/H) is published by the State of the Aerodrome; and

(8) Where the State of the Aerodrome has established an aerodrome operating minima policy and published landing and take-off minima in the AIP, the minima authorized for the use of an operator by the CAA will not be lower than the former, except where specifically authorized by the State of the Aerodrome.

(d) Authorization of the flight crew. Flight crews will be qualified to operate to the applicable aerodrome operating minima as follows:

(1) The pilot-in-command and co-pilot each hold a valid instrument rating and meet the requirements for recent experience established by CARs;

(2) Flight crew members are qualified and trained for take-off, instrument approaches and operations for low visibility take-off, Category II and/or Category III operations, as applicable;

(3) Flight crew members have completed all required proficiency checks, including demonstration of proficiency for low visibility take-off and using the relevant types of instrument approaches;

(4) The pilot-in-command has the necessary experience in the aeroplane type with restricted (higher) minima before being authorized to use the lowest approved minima; and

(5) The operator maintains a system of records to ensure that the necessary qualifications of the flight crew members are being met on a continuing basis.

Note.— Detailed requirements outlined in 1.5.

(e) Authorization of the operation. Before granting such an authorization, inspectors shall ensure that the operator has established a system to ensure that:

(1) pplicable aerodrome operating minima for the use of flight crews for all types of approaches to all aerodromes to be used in the operations have been determined;

(2) The proficiency of flight crews has been determined;

(3) Required operating procedures have been established;

(4) An operations manual with instructions appropriate to the intended operation and that reflect the mandatory procedures and/or limitations contained in the aircraft flight manual; and

(5) Sufficient experience has been gained by the air operator in operational service in weather minima higher than those proposed.

Note.— Detailed requirements outlined in 1.5.

(f) Authorization of minima. CAR 8 require an air operator establishing aerodrome-operating minima to have its method for determining such minima approved by the CAA.

Approval may be granted provided the operator's method for determining aerodrome-operating minima accurately accounts for:

(1) The type, performance and handling characteristics of the aircraft;

(2) The composition and experience of the flight crew;

(3) The dimensions and characteristics of the runways selected for use;

(4) Aircraft equipment used for navigation and aircraft control during the approach to landing and the missed approach;

(5) Obstacles in the approach and missed approach areas and the obstacle clearance altitude/height for the intended instrument approach procedures;

(6) The means used to determine and report meteorological conditions;

(7) The obstacles in the climb out areas and the necessary clearance margins; and

(8) The adequacy and performance of the available visual and non-visual ground aids.

37.12.3 SPECIFIC APPROVAL REQUIREMENTS CATEGORY II/III

37.12.3.1 Aeroplane and its equipment

(a) The instruments and equipment for Category II and III operations shall comply with the airworthiness requirements of the State of Registry of the aeroplane. In addition, aeroplane performance shall enable a missed approach to be carried out with an engine inoperative and without outside visual reference, from any height down to the decision height in Category II operations and down to touchdown in Category III operations, while remaining clear of obstacles.

The instruments and equipment appropriate to various precision approach operations are outlined in CAR 7 The MEL shall reflect the equipment required for low visibility operations.

(b) The target level of safety and the acceptable frequency of missed approaches due to airborne equipment performance, in conjunction with the intended operating minima, determine the airborne equipment design requirements with regard to:

(1) System accuracy;

(2) Reliability;

(3) Characteristics in case of failures;

(4) Monitoring procedures and equipment; and

(5) Degree of redundancy.

(c) A reporting system shall be implemented to enable continual checks and periodic reviews during the operational evaluation period before the operator is authorized to conduct Category II and III operations. Furthermore, the reporting system will be used for the period defined by the CAA after the authorization has been given to ensure that the required standards of performance are maintained. The reporting system shall cover all successful and unsuccessful approaches, with reasons for the latter, and include a record of system component failures.

(d) For Category II operations, air operators will differentiate between successful and unsuccessful approaches and provide a questionnaire to be completed by the flight crew to obtain data on actual or practice approaches which were not successful. As a minimum, the following data will be gathered to evaluate a Category II operation:

(1) The aerodrome and runway used;

(2) Weather conditions;

(3) Time;

(4) Reason for failure leading to an aborted approach;

(5) Adequacy of speed control;

(6) Trim at time of automatic flight control system disengagement;

(7) Compatibility of automatic flight control system;

(8) Flight director and raw data;

(9) An indication of the aeroplane's position relative to the ILS centre line and glide path when descending through 30 m (100 ft); and

(e) The number of approaches made during initial operational evaluation will vary depending on the capabilities of the aircraft and the operator's experience. A minimum of the CAA defined numbers of simulated approaches shall be completed to demonstrate that the performance of the system in commercial service is such that an adequate approach success rate will result. When determining the success rate, failures due to external factors, such as ATC instructions or ground equipment faults, should be taken into account.

(f) For Category III similar but more stringent demonstration procedures will be followed. Use may be made of recording equipment such as a sophisticated flight data recorder to obtain the

necessary data. Any landing irregularity will be fully investigated using all available data to determine its cause. Failure to positively identify and correct the cause of any landing reported to be unsatisfactory may jeopardize the future of the particular operation. A minimum of CAA defined numbers of simulated approaches will be conducted prior to approval being granted.

(g) Aircraft manufacturer's design and certificate aircraft having CAT II and III operational capability. The automatic systems concept is described in type-certification requirements, including requirements for minimum system performance and failure conditions, flight demonstration during certification and information to be included in the aeroplane flight manual. Inspectors will confirm that the authorization being sought by the air operator is within the operational capability as outlined in the aircraft flight manual. Additional considerations for the certification of the aeroplane as a whole for approach and landing in restricted visibility must be included in the operators programme (e.g. experience and operational demonstration of performance).

(h) The operator shall establish a maintenance programme to ensure that the airborne equipment continues to operate in service to the required performance level. This programme shall be capable of detecting any deterioration in the overall level of performance as described in 1.5.1.3 to 1.5.1.6.

(i) Maintenance programmes shall be established consistent with the aeroplane manufacturer's recommendations. Aeroplane system design and architecture and the manufacturer's maintenance philosophy can introduce significant variation between aeroplane types for failure detection, annunciation and return-to-service methods.

37.12.3.2 Operating procedures

(a) Low weather minima operations require special procedures and instructions to be included in the operations manual, but it is desirable that any such procedures should also be used as the basis for all operations in order to provide the same operating philosophy for all categories of operations. These procedures cover all foreseeable circumstances so that flight crews are fully informed as to the correct course of action which should be followed. This is particularly true for the last part of the approach and landing where limited time is available for decision making. Possible modes of operation include:

(1) Manual take-off;

(2) Manual approach and landing;

(3) Coupled approach down to DA/H, manual landing thereafter;

(4) Coupled approach to below DA/H, but manual flare and landing;

(5) Coupled approach followed by auto-flare and auto-landing; and

(6) Coupled approach followed by auto-flare, auto-landing and auto-roll-out.

(b) The precise nature and scope of procedures and instructions shall be a function of the airborne equipment used and the flight deck procedure applied. The duties of flight crew members during take-off, approach, flare, roll-out and missed approach are to be clearly delineated in the operations manual. Particular emphasis shall be placed on flight crew responsibilities when transitioning from non-visual conditions to visual conditions and on procedures to be used in deteriorating visibility or when failures occur. Special attention should be paid to the distribution of flight deck duties to ensure that the workload of the pilot making the decision to land or to execute a missed approach enables the pilot to concentrate on flight management and decision-making.

(c) The following areas are to be addressed in the operations manual:

(1) Checks for satisfactory functioning of equipment, both on the ground and in flight;

(2) Effects on minima caused by changes in the status of the ground installations;

(3) Use and application of RVR reports from multiple runway positions and sensors;

(4) Pilot assessment of aircraft position and monitoring of the performance of the automatic flight control system, the effects of the failure of any required portion of the automatic flight control system or instruments used with the system and action to be taken in the event of inadequate performance or failure of any portion of either the system or the associated instruments;

(5) Actions to be taken in the case of failures, such as engines, electrical systems, hydraulics and flight control systems;

(6) Allowable aeroplane equipment deficiencies;

(7) Recautions necessary when making practice approaches where full ATC procedures to support Category III operations are not in force;

(8) Operating limitations resulting from airworthiness certification; and

(9) Information on the maximum deviation allowed from the ILS glide path and/or localizer from the region of the DA/H down to touchdown, as well as guidance regarding the visual reference required.

(d) Air operators will establish procedures for the gradual introduction of low weather minima operations. The procedures shall implement reduced visibility operations through a gradual reduction in meteorological criteria commensurate with experience. Such procedures will ensure the following:

(1) The practical evaluation of airborne equipment before commencing actual operations as outlined in 1.5.1.5 and 1.5.1.6;

(2) Accumulation of experience with the procedures discussed above before commencing actual operations and, if necessary, the adjustment of those procedures;

(3) Accumulation of operating experience before proceeding to Category III operations minima;

(4) Providing, for analysis purposes, a means of pilot reporting on ground and airborne system performance;

(5) Accumulation of flight crew experience; and

(6) Accumulation of experience in the maintenance of particular equipment.

Note: Procedures and limitations for all weather operations are contained in the operations manual.

37.12.3.3 Flight crew qualification and training

(a) Before conducting Category II or III operations, the flight crew shall complete an approved programme of training and education. The approved programme of training will be related to the

aeroplane type and the operating procedures adopted, as outlined in 1.5.2. For modern transport aircraft and operators, this is typically incorporated as part of the operator's approved flight crew training programme.

(b) The increased dependence on the use of automatic systems highlights the role of the flight crew in safely and effectively operating these systems and the need for this role to be addressed in training and qualification processes. This emphasis should include pilot assessment of the position of the aeroplane and monitoring of the automatic flight control system performance throughout all phases of the approach, flare, touchdown and roll-out.

(c) Flight crews shall be required to demonstrate their competency to the designated examiner or CAA inspector. The captain will have at least 500 hours as pilot-in-command in turbo-jet and 100 hours of pilot-in-command on the aeroplane type before being authorized by the air operator to apply Category II or III operations minima under actual conditions.

(d) Flight crews shall make full use of ground and airborne equipment intended for use during Category II and III operations. They shall therefore be instructed in how to obtain maximum benefit from redundancy provided in the airborne equipment and to fully understand the limitations of the total system, including both ground and airborne elements. The ground instruction shall cover at least the following:

(1) The characteristics, capabilities and limitations of the NAVAIDs involved (e.g. ILS, GLS) including the effect on aeroplane system performance of interference to the ILS signal caused by other landing, departing or overflying aeroplanes and the effect of the infringement of ILS critical and sensitive areas by aeroplanes or vehicles in the manoeuvring area;

(2) The characteristics of the visual aids (e.g. approach lighting, touchdown zone lighting, centre line lighting) and the limitations on their use as visual cues in reduced visibility with various glide path angles and cockpit cut-off angles, and the heights at which various cues may be expected to become visible in actual operations;

(3) The operation, capabilities and limitations of the airborne systems (e.g. the automatic flight control systems, monitoring and warning devices, flight instruments including altimetry systems and the means the pilot has to assess the position of the aeroplane during the approach, touchdown and rollout);

(4) Approach, including missed approach procedures and techniques, along with descriptions of the factors affecting height loss during missed approach in normal and abnormal aeroplane configurations;

(5) The use and limitations of RVR, including the applicability of RVR readings from different positions on the runway, the different methods of assessing RVR, the conversion method of visibility into an RVR in some States and the limitations associated with each method;

(6) The basic understanding of obstacle limitation and the obstacle-free zone, including missed approach design criteria and obstacle clearance for Category II and III operations;

(7) The effects of low-level wind shear, turbulence and precipitation;

(8) Pilot tasks at decision height, and procedures and techniques for transition from instrument to visual flight in low visibility conditions, including the geometry of eye, wheel and antenna positions with reference to ILS reference datum height;

(9) Action to be taken if the visual reference becomes inadequate when the aeroplane is below decision height and the technique to be adopted for transition from visual to instrument flight should a go around become necessary at these low heights;

(10) Use of alert height and appropriate actions;

(11) Action to be taken in the event of failure of approach and landing equipment above and below decision height;

(12) Recognition of and action to be taken in the event of failure of ground equipment;

(13) Significant factors in the determination of decision height;

(14) Effect of specific aeroplane malfunctions (e.g. engine failure) on auto-throttle, auto-pilot performance;

(15) Procedures and precautions to be followed while taxiing during limited visibility conditions; and

(16) The existence and effects of visual illusions.

(e) Each member of the flight crew shall be trained to carry out the duties appropriate to the particular airborne system and subsequently demonstrate their ability to carry out the duties, as a member of the flight crew, to an acceptable level of competency before being authorized to engage in the particular category of operations. Additionally, before a pilot is authorized to operate to Category II or III minima, the pilot shall have gained experience as outlined in 1.5.2.4 in using the appropriate procedures in meteorological conditions above the relevant minima. Flight crews shall be given practical training and tests in the use of applicable systems and associated procedures in conditions of the lowest minima to be authorized.

(f) Training may only be carried out in an approved FSTD with a suitable visual system qualified for LVTO, CAT II and/or CAT III as applicable. It is important that the visibility simulated for both static and dynamic visual scenes is a correct reflection of the RVR intended. The specific type of training will depend upon the particular airborne system and on the operating procedures adopted. The initial training shall at least include:

(1) Approaches with all engines operating, and with an engine inoperative, using the appropriate flight guidance and control systems installed in the aeroplane down to the appropriate minimum height, without external visual reference, followed by transition to visual reference and landings;

(2) Approaches with all engines operating, and with an engine inoperative, using the appropriate flight guidance and control systems installed in the aeroplane down to the appropriate minimum height, followed by missed approaches, all without external visual reference;

(3) Approaches utilizing the automatic flight control and landing system, followed by reversion to manual control for flare and landing after disconnecting the automatic system at low level, if appropriate;

(4) Approaches utilizing the automatic flight control and landing system with automatic flare, automatic landing and, where appropriate, automatic roll-out;

(5) Procedures and techniques for reversion to instrument flight and the execution of a missed approach from DA/H, including obstacle clearance aspects; and

(6) Go-around from a height below decision height which may result in a touchdown on the runway in cases of a go-around initiated from a very low altitude, e.g. such as to simulate failures or loss of visual reference prior to touchdown.

(g) The flight training programme shall provide practice in handling system faults, particularly those which have an effect on the operating minima and/or subsequent conduct of the operation. However, the frequency of system malfunctions introduced shall not be such so as to undermine the confidence of flight crews in the overall integrity and reliability of the systems used in low minima operations.

(h) In conjunction with normal pilot proficiency checks at regular intervals, a pilot shall demonstrate the knowledge and ability necessary to perform the tasks associated with the authorized category of operation. The use of an approved FSTD for recurrent training, proficiency checking and renewal of authorizations is mandatory.

(i) Air operators shall ensure that pilots use procedures developed for Category II or III operations during normal service, regardless of the weather conditions, when the necessary ground facilities are available and traffic conditions permit. This practice ensures flight crew familiarity with the procedures, builds confidence with the equipment and ensures appropriate maintenance of the Category II and III related systems.

(j) When a flight crew member becomes fully qualified for Category II or III operations, the operator shall document these qualifications by either an endorsement in the pilot logbook or the issuance of a qualification card which shall contain evidence of recurrent checks.

37.12.4 SPECIFIC APPROVAL REQUIREMENTS LOW VISIBILITY TAKE-OFF

(a) Take-off minima are usually stated as visibility or RVR limits. Where there is a specific need to see and avoid obstacles on departure, take-off minima may include cloud base limits. Where avoidance of such obstacles may be accomplished by alternate procedural means, such as use of climb gradients or specified departure paths, cloud base restrictions need not be applied.

(b) While the State of the Aerodrome may establish standard take-off minima, low visibility take- off (LVTO) minima may also be established for aerodromes based on the availability of specified facilities and aerodrome procedures. The CAA may authorize the use of LVTO minima based on the following factors:

(1) Flight characteristics and cockpit instrumentation typical of multi-engine turbine aircraft;

(2) Comprehensive programmes for crew qualification which address use of the specified minima;

(3) Comprehensive programmes for airworthiness, with any necessary equipment operational (MEL);

(4) Availability of specified facilities for the respective minima, including programmes for assurance of the necessary reliability and integrity;

(5) Availability of air traffic services to ensure separation of aircraft and timely and accurate provision of weather, NOTAM and other safety information;

(6) Standard runway and airport configurations, obstruction clearance, surrounding terrain, and other characteristics typical of major facilities serving scheduled international operations;

(7) Routine low visibility weather conditions (e.g. fog, precipitation, haze, wind components) which do not require special consideration; and

(8) Availability of alternate courses of action in the event of emergency situations.

(c) Air operators requesting authorization for LVTO at aerodromes where these may be available may make application to the CAA. The application will be approved provided the air operator can adequately demonstrate that each of the factors outlined above has been addressed.

(d) The air operator may be authorized to the LVTO minima outlined in 27.4.5 below provided these minima are authorized by the State of the Aerodrome for that particular aerodrome.

(e) Approved take-off minima for commercial air transport aeroplanes:

Facilities	RVR/VIS1
Adequate visual reference (day only) (2)	500 m/1 600 ft
Runway edge lights or runway centre line markings (3)	400 m/1 200 ft
Runway edge lights and runway centre line markings (3)	300 m/1 000 ft
Runway edge lights and runway centre line lights	200 m/600 ft
Runway edge lights and runway centre line lights and relevant RVR information(4)	TDZ 150 m/500 ft MID 150 m/500 ft Stop-end 150
High intensity runway edge lights and runway centre line lights (spacing 15 m or less) and relevant RVR information (4)	TDZ 125 m/400 ft MID 125 m/400 ft Stop-end 125
High intensity runway edge lights and runway centre line lights (spacing 15 m or less), approved lateral guidance system and relevant RVR information (4)	TDZ 75 m/300 ft MID 75 m/300 ft Stop-end 75 m/300

1 The TDZ RVR/VIS may be assessed by the pilot.
2 Adequate visual reference means that a pilot is able to continuously identify the take-off surface and maintain directional control.
3 For night operations at least runway edge lights or centre line lights and runway end lights are available.
4 The required RVR is achieved for all relevant RVRs.

(f) Take-off minima, which are relevant to the take-off manoeuvre itself, should not be confused with weather minima required for flight initiation. For flight initiation, departure weather minima at an aerodrome shall not be less than the applicable minima for landing at that aerodrome unless a suitable take-off alternate aerodrome is available. The take-off alternate aerodrome shall be located within the following distances of the aerodrome of departure:

(1) Aeroplanes with two engines: one hour of flight time at a one-engine-inoperative cruising speed, determined from the aircraft operating manual, calculated in ISA and still-air conditions using the actual take-off mass; or

(2) Aeroplanes with three or more engines: two hours of flight time at an all-engine operating cruising speed, determined from the aircraft operating manual, calculated in ISA and still-air conditions using the actual take-off mass; or

(3) Aeroplanes engaged in extended diversion time operations (EDTO): where an alternate aerodrome meeting the distance criteria of a) or b) is not available, the first available alternate aerodrome located within the distance of the operator's approved maximum diversion time considering the actual take-off mass.

37.12.5 ISSUANCE OF OPERATIONS SPECIFICATIONS

Operations and airworthiness inspectors will review the air operator's submission utilizing Job Aid – Low Visibility Operations. Once all requirements of this chapter have been met for the authorization requested, inspectors shall authorize the operations through the issue of operations specifications for low visibility operations. The operations specification will include the applicable precision approach category (CAT II, IIIA, or IIIB) and minimum RVR in metres and decision height in feet. For low visibility take-off the operations specification will include the approved minimum take-off RVR in metres.

37.12.6 PROCEDURES

(a) Review the Certificate Holder's submission, including manual excerpts and procedures to determine compliance with CAA regulations and policies.

(b) Open work tracking record.

(c) Determine that the Certificate Holder's manual is in accordance with regulatory guidance.

(d) Approve and authorize the Certificate Holder's Category II and/or Category III Program.

(e) Close work tracking record.

37.13 MINIMUM NAVIGATION PERFORMANCE SPECIFICATIONS (MNPS) APPROVALS

(a) This section is to give guidance in the evaluation and authorization of North Atlantic Minimum Navigation performance Specifications airspace (NAT/MNPS).

37.13.1 POLICY STATEMENT

(a) Airspace where MNPS is applied should be considered special qualification airspace. The specific aircraft type or types that the operator intends to use will need to be approved by the LCAA before the operator conducts flight in MNPS airspace. In addition, where operations in specified airspace require approval in accordance with an ICAO Regional Navigation Agreement, an operational approval will be needed. This document provides guidance for the approval of specific aircraft type or types, and for operational approval.

(b) Each aircraft type that an operator intends to use in MNPS airspace should have received MNPS airworthiness approval from the aircraft certificating authority prior to approval being granted for MNPS operations, including the approval of continued airworthiness programs.

(c) The NAT/MNPS, as implemented in the North Atlantic Region, is a demanding standard. Safety of flight in this airspace is critically dependent on each operator achieving and continuously maintaining a high level of navigation accuracy. The operator must obtain this approval for each airplane and navigation/system combination used for operations in this airspace. To obtain MNPS approval, the operator must show compliance with the following conditions:

(1) Each aircraft is suitably equipped and capable of meeting the MNPS standards

(2) The operator has established operating procedures that ensure MNPS standards are met

(3) The flight crews are trained and capable of operating to MNPS requirements

(d) Each operator requesting MNPS operational approval must establish maintenance and inspection practices acceptable to the LCAA that include any required maintenance specified in the data package. Operators of aircraft subject to a continuous airworthiness maintenance program must incorporate these practices in their program.

37.13.2 PROCEDURES

(a) **Initial NAT/MNPS Approvals**. Each operator, and each aircraft and navigation system combination must be approved before operating in NAT/MNPS airspace. Each operator must demonstrate (validate) that it can meet MNPS standards before receiving approval.

(1) Validation flights must be conducted through NAT/MNPS airspace.

(2) Inspectors must ensure that requirements of the applicable Advisory Circular(s) and/or other official documentation for Loran-C, Global Positioning System (GPS), or Multi-Sensors (or equivalent) are fully met by the operator before approving any operation in this airspace. All NAT/MNPS approvals are granted by issuing OpSpecs and by adding that area of en route operation to the standard OpSpecs.

(3) Approval for Operations Using GPS in North Atlantic Minimum Navigation Performance Specifications Airspace. The navigation specialists will provide guidance on process and procedures for confirming the operator's capability to meet the requirements. The operator is not required to collect navigation performance data in NAT/MNPS airspace to apply to Pass/ Fail graphs.

(b) The NAT/MNPS represents navigational performance (necessary to reduce the risk of collision) on a internationally established level. While the NAT MNPS airspace currently does not have a published RNP value, it is anticipated that in the future an RNP requirement will be implemented. The MNPS establishes the following demanding criteria:

(1) The average lateral deviation (for any cause) cannot be greater than 6.3 nautical miles (nm) from the centerline of the assigned route over any portion of the route.

(2) Ninety-five percent of all of the lateral displacements (for any cause) from the centerline of the assigned route cannot be greater than 12.6 nm for all flights over any portion of that route.

(3) Each operator cannot have more than 1 lateral deviation (for any cause) of 30 nm or more in 1,887 flights in the NAT/MNPS airspace. When errors of these magnitudes occur, the aircraft has failed to navigate to the degree of accuracy required for the control of air traffic.

(4) Each operator cannot have more than 1 lateral deviation (for any cause) which is within ±10 nm of a multiple of the separation minimums applied in 7,693 flights in the NAT/MNPS airspace. NAT/MNPS airspace routes are separated by 60 nm. If an error of 50 - 70 nm occurs, the aircraft has blundered into the airspace of an adjacent route. Errors of these magnitudes are extremely serious. The potential for a collision is high because the resulting flight path can overlap the flight path assigned to another aircraft (possibly coming from the opposite direction).

(c) Maintaining NAT/MNPS Authorization.

(1) In addition to initially meeting MNPS criteria, each operator must continuously maintain the required level of navigational performance. Each gross navigational error (errors 25 nm or more) has a significant impact on flight safety in this airspace and must be fully investigated in a timely manner. The cause of each error must be

identified and effective action must be taken to prevent reoccurrence of similar errors. Gross navigational errors (GNE) are detected by ATC and reported to one of the regional monitoring agencies of the world. The regional monitoring agency then provides the notification of the GNE to not only the operator that made the GNE but also to the navigation specialists in AFS-400 at headquarters. The navigation specialists in turn review the GNE and contact the appropriate Flight Standards office.

(2) When an inspector learns of a GNE by one of his/her operators, the inspector must immediately contact the operator and advise that the GNE will be investigated. The inspector must ensure that the operator takes timely corrective action. After this notification, inspectors must determine the effectiveness of the operator's actions as follows:

(i) If it is determined that an operator's actions will prevent the occurrence of similar errors, the operator should be permitted to continue NAT/MNPS operations with close surveillance of the operator's navigational performance. If similar errors occur (in subsequent operations) more frequently than permitted by the standard, stronger action must be taken.

(ii) If an operator fails to take action to improve navigation performance, action must be initiated to suspend NAT/MNPS authorization (operations specification B039 is rescinded).

(iii) If it is determined that an operator's actions to improve navigational performance are inadequate or otherwise unsatisfactory, the operator must be notified that the corrective action is unacceptable. When an operator does not implement a satisfactory solution in a timely manner, the action must be initiated to suspend NAT/MNPS authorization and could include enforcement action.

(d) Canadian MNPS airspace.

(1) Certain high altitude airspace in Northern Canada has been designated as MNPS airspace (see the Canadian Aeronautical Information Publication (AIP)). The navigational performance criteria for operation in Canadian MNPS airspace is identical to the criteria for NAT/MNPS airspace.

37.14 EXTENDED RANGE TWIN ENGINE (EDTO) APPROVALS

37.14.1 BACKGROUND

(a) ICAO Annex 6 Part 1, When approving the appropriate maximum diversion time for an operator of a particular aeroplane type engaged in extended diversion time operations, the State of the Operator shall ensure that:

(1) a) for all aeroplanes: the most limiting EDTO significant system time limitation, if any, indicated in the aeroplane flight manual (directly or by reference) and relevant to that particular operation is not exceeded; and

(2) b) for aeroplanes with two turbine engines: the aeroplane is EDTO certified.

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

37.14.2 BACKGROUND AND OBJECTIVES

(a) A team leader will be assigned to lead the certification of ETOPS operations 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).

(b) All task required in ETOPS certification must be complete prior to adding ETOPS to the Operation Specifications of the AOC holder. During this certification, the CAA staff will observe and evaluate procedures and crew performance in a full flight simulator and in flight within total operational environment of the air transportation system.

(c) The applicant and the CAA inspectors shall plan well in advance for the conduct of certification activities in the full flight simulator and the aircraft in flight.

(1) In flight procedures laid down in the operations manual and compliance with those procedures. The flight crew will conduct the flight safely and in accordance with regulations.

(2) The support provided by the operational control system to the flight crew;

(3) The general provision made of the operational control office in assisting the flight crew to carry out their duties at all aerodromes utilized by the applicant along the routes; and

(4) En-route facilities and ETOPS diversion alternates.

(d) ETOPS certification flights are operated exactly as though the applicant is conducting revenue operations. However, during the course of the flights the CAA staff will introduce simulated situations which will require appropriate responses by crew members and ground personnel. **Engine shut downs will only be demonstrated in the full flight simulator.**

(e) ETOPS certification 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 ETOPS certification are described in the following sub-paragraphs:

(1) A minimum of two flight in a full flight simulator capable of demonstrating an ETOPS diversion and landing at an ETOPS alternate airport.

(2) Positioning or delivery flights. Positioning or delivery flights approved by the CAA may be credited towards ETOPS certification requirements;

(3) Training flights. With the approval of the CAA training flights may be credited towards ETOPS certificaiton requirements, provided that an CAA inspector observes each flight.

37.14.3 SPECIFIC PROCEDURES

(a) Well before the ETOPS certification flights in the full flight simulator and aircraft (during the pre-application phase of the certification process) the CAA will have briefed the operator regarding the necessity for ETOPS certification flights.

(b) Unsatisfactory conditions noted by the CAA inspectors during any part of the ETOPS certification 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 CAA certification team prior to the issuance of ETOPS Operation Specifications.. Some examples of deficiencies requiring corrective action are:

(1) Flight crew member not properly trained, e.g. assistance from applicant supervisors or an CAA inspector required;

(2) Flight crew member not familiar with aircraft, systems, procedures or performance;

(3) Flight crew member performance on ETOPS procedures is unsatisfactory;

(4) Numerous aircraft deficiencies and/or system malfunctions;

(5) Dispatcher performance on ETOPS procedures is unsatisfactory;

(6) Unsatisfactory operational control, e.g. improper flight planning and maintenance release procedures;

(7) Unacceptable maintenance procedures or practices; and/or

(8) Improper aircraft servicing and ground handling procedures.

(c) After the ETOPS certificaiton 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.

37.14.4 EVALUATION AND REPORTING

The applicant's operational performance during ETOPS certification flights will be evaluated using the Operations ETOPS Checklist, the Proficiency Check Form and the Enroute Inspection Form.

37.14.5 PROCEDURES

(a) Review the AOC holders ETOPS certification plan.

(1) Notify Certificate Holder when acceptable.

(2) Open work tracking record.

(b) Determine that the Certificate Holder's manual is in accordance with regulatory guidance. Items to be evaluate:

(1) Aircraft and engines are ETOPS eligible? Document included in ETOPS package.

(2) Revision to Part A General Operations Manual to include ETOPS? Exert of pages in package.

(3) Revision to Part D Training Manual to include ETOPS? Exert of pages in package.

(4) Revision to Minimum Equipment List (MEL) to include ETOPS? Exert of pages in package.

(5) Revision to Normal and Emergency Checklist to include ETOPS? Exert of pages in package.

(6) Revision to Operational Flight Plan to include ETOPS? Exert of pages in package.

(7) Revision to Dispatcher Training Program to include ETOPS? Exert of pages in package.

(8) Copy of ETOPS Navigational Charts shown specific range arcs. Include in package.

(9) Copy of weather package for simulator and aircraft flights. Include in package.

(c) Coordinate demonstration and inspection of the Certificate Holder's EDTO procedures and document the results.

(1) Scenarios in full flight simulator

a. At least two flights with separate flight crews must be completed in a full flight simulator. The flights should be completed as if they were regular line flights with real time weather and operational flight plans.

b. An MEL item that would prevent ETOPS operations should be introduced and then removed once the dispatchers and flight crew have determined the flight would not be possible.

c. Following a normal departure have the Dispatch Office inform the crew that the ETOPS alternate airport weather has lowered and is no longer usable. The crew will be giving a new ETOPS alternate and a new revised flight plan.

d. FMS action required.

e. After passing the ETOPS entry point an engine failure should be introduced.

(2) Crew actions must follow ETOPS procedures exactly. The flight crew must:

a. The flight crew must:

b. Scan TCAS before starting descent;

c. Make high terrain assessment before starting descent;

d. Follow descent procedures specific for airspace (procedures vary widely);

e. Descend at predetermined speed and program FMS to ETOPS alternate;

f. Coordinate with Dispatch Office.

g. Nearest suitable may not be the best course of action;

h. Make fuel remaining determination;

i. Brief Cabin Crew;

j. Execute Instrument Approach and Land Safely;

k. Simulate passenger disembarkation.

(3) Scenarios on actual aircraft flight demonstration/validation

a. At least two flights must be conducted as demonstration/validation on representative routes that are likely to be flown the AOC holder. A normal compliment of flight crew, cabin crew and maintenance staff must be included. Coordination with the Dispatch office is essential.

NOTE: NO ACTUAL AIRCRAFT MALFUNCITIONS WILL BE INITIATED ON A LIVE FLIGHT.

b. Task to be evaluate:

i. Crew verifies maintenance release for ETOPS flight;

ii. Crew verifies ETOPS operational flight plan;

iii. Crew plots course on ETOPS planning chart;

iv. Crew verifies ETOPS fuel reserves;

v. Crew verifies weather at ETOPS alternates prior to entry point;

vi. Crew demonstrates knowledge of MEL in regards to ETOPS unique requirements;

vii. Crew demonstrates ability to reprogram FMS system to show changes of ETP 1 and ETP 2.

(4) Debrief ETOPS full flight simulator flights and actually aircraft flight separately.

(d) Approve and authorize the Certificate Holder's EDTO program.

3.8 APPENDIX 30-A: JOB AID: AW-035 RVSM EVALUATION

FILE REFERENCE: _____

Date		**Control #**	
Name of Operator		**AOC #**	
State of Operator		**Type of Aircraft**	
Location		**Aircraft Reg#**	
Destination		**PIC #**	
Action Taken		**Other PEL#**	

KEY PERSONNEL MET:

	NAME	TITLE
7.		
8.		
9.		
10.		
11.		
12.		

AIRCRAFT CONFIGURATION	
● Aircraft Make & Model?	
● Engine Make & Model & Serial Number?	
● Engine Make & Model & Serial Number?	
● Engine Make & Model & Serial Number?	
● Engine Make & Model & Serial Number?	

PLEASE CHECK THE APPROPRIATE BOX FOR THE FOLLOWING; SATISFACTORY (S), NOT SATISFACTORY (NS) OR NOT APPLICABLE (N/A). INDICATE REGULATORY OR OTHER REFERENCE(S) FOR NOT SATISFACTORY (NS) ITEMS WHERE APPLICABLE. PROVIDE FURTHER DETAILS IN THE REMARKS SECTION IF REQUIRED.

		CHECKLIST ITEMS			
REFERENCE	**1**	**RVSM MAINTENANCE PROCEDURES**	**S**	**NS**	**N/A**
	1.1	Is the proposed aircraft certified for RVSM? TD or AFM			
	1.2	Are components considered to be RVSM critical identified and listed?			
REFERENCE		**RVSM MAINTENANCE PROCEDURES (Conti..)**	**S**	**NS**	**N/A**
	1.3	Are structural areas noted as RVSM critical areas identified and listed?			

	1.4	Is the name or title of the person who will ensure that the aircraft is maintained in accordance with the approved programme included?			
	1.5	Does the method the operator will use to ensure that all personnel performing maintenance on the RVSM system are properly trained, qualified, and knowledgeable of that specific system?			
	1.6	Does the MEL identify systems and equipment that are required for RVSM?			
	1.7	Is the method the operator will use to notify the crew if the aircraft has been restricted from RVSM but is airworthy for an intended flight identified?			
	1.8	Is the method the operator will use to ensure conformance to the RVSM maintenance standards, including the use of calibrated and appropriate test equipment described?			
	1.9	Is there a quality assurance programme for ensuring continuing accuracy and reliability of test equipment, especially when outsourced?			
	1.10	Is the method the operator will use to verify that components and parts are eligible for installation in the RVSM system identified?			
	1.11	Are there procedures to prevent ineligible parts from being installed?			
	1.12	Is the method the operator will use to return an aircraft to service after maintenance has been performed on an RVSM component/system or after the aircraft was determined to be non-compliant defined?			
REFERENCE	**2**	**CONTINUED AIRWORTHINESS ISSUES**	**S**	**NS**	**N/A**
	2.1	Are there provisions for Periodic inspections, functional flight tests, and maintenance and inspection procedures for ensuring continued compliance with the RVSM aircraft requirements?			
	2.2	Are the maintenance requirements listed in Instructions for Continued Airworthiness (ICA) associated with any RVSM associated component or modification identified?			
	2.3	Does the Operator plan to participate in a monitoring programme?			
REFERENCE		**CONTINUED AIRWORTHINESS ISSUES (Conti..)**	**S**	**NS**	**N/A**
	2.4	Does the Monitoring Programme include method of scheduling?			
	2.5	Does the programme have provisions for monitoring the results?			
	2.6	Is there an "altitude error" reporting system in place?			
	2.7	Are other maintenance items the operator incorporated to			

		ensure continued compliance with RVSM requirements identified and appropriate?			
REFERENCE	**3**	**USE OF AMO SERVICE PROVIDERS**	**S**	**NS**	**N/A**
	3.1	Operators using the services of an Approved Maintenance Organization must include provisions to ensure that the requirements of their RVSM programmes are being met.			

Item Number	REMARKS

INSPECTOR NAME		**ORG REP NAME**	
INSPECTOR SIGNATURE		**ORG REP SIGNATURE**	

3.9 APPENDIX 30-B: JOB AID: AW-033 EDTO Evaluation

FILE REFERENCE: _____

Date		**Control #**	
Name of Operator		**AOC #**	
State of Operator		**Type of Aircraft**	
Location		**Aircraft Reg#**	
Destination		**PIC #**	
Action Taken		**Other PEL#**	

KEY PERSONNEL MET

	NAME	TITLE
1.		
2.		
3.		
4.		
5.		
6.		

PLEASE CHECK THE APPROPRIATE BOX FOR THE FOLLOWING; SATISFACTORY (S), NOT SATISFACTORY (NS) OR NOT APPLICABLE (N/A). INDICATE REGULATORY OR OTHER REFERENCE(S) FOR NOT SATISFACTORY (NS) ITEMS WHERE APPLICABLE. PROVIDE FURTHER DETAILS IN THE REMARKS SECTION IF REQUIRED.

		CHECKLIST ITEMS			
REFERENCE	**1**	**Configuration, Maintenance Procedures Document (CMP)**	**S**	**NS**	**N/A**
	1.1	Has the applicant supplied the applicable Configuration, Maintenance and Procedures (CMP) document listed in the aircraft's AFM, or TDS, or STC?			
	1.2	Does the operator have a contract to receive the latest revisions to the CMP? Non Vietnam registered AC only, LCAA freezes CM)			
REFERENCE		**Configuration, Maintenance Procedures Document (CMP)**	**S**	**NS**	**N/A**
	1.3	Is the supplied CMP applicable to the proposed airframe engine combination?			
	1.4	Does the supplied CMP have the signed approval statement from the authority of the country of manufacturer?			
	1.5	Is the application for EDTO approval within the times listed in he CMP approvals for that configuration?			
	1.6	Are applicable Service Bulletins listed in the CMP complied with?			

	1.7	Does the operator have procedures to require priority action (before the next EDTO flight) in regards to revisions to the CMP?			
	1.8	Does the operator have procedures to supply the LCAA copies of all revisions received by them with notations as to actions taken?			
	1.9	Does the operator have the required EDTO CMP compliance statement, applicable to the specific aircraft, from the authority of the country of manufacturer? (Only applicable to aircraft specifically manufactured to EDTO standards)			
	1.10	Has all special requirements/retrofits listed in the compliance statement been accomplished?			
	1.11	Does the operator receive the manufacturer's industry EDTO reliability reports?			
	1.12	Does the operator have procedures to compare its EDTO operations to the industry standards?			
REFERENCE	**2**	**WEIGHT & BALANCE**	**S**	**NS**	**N/A**
	2.1	Has the operator established a specific EDTO Maintenance Manual?			
	2.2	Does the manual provide for an Engine Oil Consumption Programme?			
	2.3	Does the manual provide for an APU Oil Consumption Programme?			
	2.4	Does the manual provide for an Engine Condition Monitoring Programme?			
	2.5	Does the manual provide for a Reliability Programme?			
	2.6	Does the manual provide for a Propulsion System Monitoring Programme?			
	2.7	Does the manual provide for Maintenance Training?			
REFERENCE		**WEIGHT & BALANCE**	**S**	**NS**	**N/A**
	2.8	Has the operator established a specific EDTO Maintenance Manual?			
	2.9	Does the manual provide for EDTO Parts Control?			
	2.10	Does the manual provide for Aircraft Performance Monitoring?			
	2.11	Does the manual provide for monitoring of Sub-Contact Maintenance?			
	2.12	Does the manual contain the additional maintenance procedures required to ensure EDTO requirements are met?			
	2.13	Does the manual specify the EDTO Critical Systems?			

	2.14	Does the manual provide for a Continued Airworthiness Programme needed for EDTO operation?			
	2.15	Does the manual spell out specific EDTO responsibilities?			
	2.16	Does the manual spell out specific EDTO requirements?			
	2.17	Does the manual spell out specific EDTO limitations?			
	2.18	Does the manual spell out specific EDTO interfaces?			
	2.19	Does the manual spell out specific EDTO duties?			
	2.20	Does the manual spell out specific EDTO programme procedures?			
	2.21	Does the manual have EDTO specific Technical Log procedures?			
	2.22	Is the manual subject to revision control?			
	2.23	Does the programme contain Deferred Item procedures for EDTO related systems?			
REFERENCE	**3**	**EDTO Continued Airworthiness Programme**	**S**	**NS**	**N/A**
	3.1	Has the basic maintenance programme been supplemented with EDTO tasks?			
	3.2	Does the programme clearly define EDTO related tasks?			
	3.3	Has EDTO related tasks been clearly identified on routine work cards, work forms and check sheets?			
	3.4	Does the programme require an EDTO Service Check to ensure the aircraft status and related critical systems?			
REFERENCE		**EDTO Continued Airworthiness Programme (Conti…)**	**S**	**NS**	**N/A**
	3.5	Is the required EDTO Service Check accomplished within 3 days of an intended EDTO flight and/or after EDTO critical system maintenance?			
	3.6	Does the programme call for prompt implementation of modifications and inspections, which could affect propulsion system reliability?			
	3.7	Does the programme ensure duel EDTO significant systems are not maintained during the same check?			
	3.8	Does the programme ensure when duel EDTO significant systems maintenance is performed different individuals accomplish it and/or additional checks are performed?			
	3.9	Does the programme contain procedures for verification flights after unscheduled maintenance is performed on EDTO required systems?			
REFERENCE	**4**	**Reliability Programme**	**S**	**NS**	**N/A**
	4.1	Does the operator have a LCAA approved Reliability Programme?			

	4.2	Are the operator's EDTO aircraft included in the Reliability Programme?			
	4.3	Does the Reliability Programme emphasize EDTO Systems /Components?			
	4.4	Is the EDTO Reliability Programme event oriented?			
	4.5	Does the EDTO Reliability incorporate specific EDTO reports and rectification procedures?			
	4.6	Is there a requirement in the programme to forward copies of all reliability reports and corrective actions taken to the GCAA?			
	4.7	Does the operator have sufficient Reliability Experience for the EDTO approval applied for?			
REFERENCE	**5**	**Engine/APU Oil Consumption Programme**	**S**	**NS**	**N/A**
	5.1	Does the operator have procedures to monitor Engine/APU Oil consumption?			
	5.2	Is the Technical Log used to monitor Oil consumption?			
	5.3	If the Technical Log or another method is used to monitor oil consumption are their procedures to ensure timely notification of oil usage?			
REFERENCE		**Engine/APU Oil Consumption Programme (Conti…)**	**S**	**NS**	**N/A**
	5.4	Are there procedures to ensure the oil consumption is within the limits per 1000 flight hours for the EDTO approval being sort?			
	5.5	Are procedures in place to ensure timely corrective action to h oil consumption reports?			
	5.6	Does the programme provide for assessment and reporting of the propulsion system monitoring?			
REFERENCE	**6**	**Engine Condition Monitoring Programme**	**S**	**NS**	**N/A**
	6.1	Does the ECM reflect the manufacturer's instructions?			
	6.2	Does the programme identify the parameters to be monitored?			
	6.3	Does the programme identify the method of data collection?			
	6.4	Does the programme define the corrective action process?			
	6.5	Does the programme identify responsibilities and interfaces?			
REFERENCE	**7**	**Maintenance Training Programme**	**S**	**NS**	**N/A**
	7.1	Does the training programme contain the additional maintenance tasks (CMP)?			

	7.2	Does the programme include engine and systems review?			
	7.3	Does the programme explain EDTO service checks?			
	7.4	Does the programme include spare parts control?			
	7.5	Does the programme include engine/APU preventive maintenance?			
	7.6	Does the programme include the use of onboard maintenance facilities?			
REFERENCE	**8**	**EDTO Parts Control**	**S**	**NS**	**N/A**
	8.1	Are procedures established to ensure EDTO parts configuration control?			
	8.2	Are parts identified in accordance with the CMP document?			
	8.3	Are provisions for verification of parts used during parts pooling or borrowing as well as parts used after repair or overhaul to ensure they maintain necessary EDTO configuration for that aircraft?			
REFERENCE	**9**	**Aircraft Performance Monitoring**	**S**	**NS**	**N/A**
	9.1	Are all EDTO significant systems (or component) identified?			
	9.2	Are these systems included in the reliability programme?			
REFERENCE	**10**	**Monitoring of Sub-Contact Maintenance**	**S**	**NS**	**N/A**
	10.1	If contractor is AMO does its authorization include EDTO?			
	10.2	Are the contractor's personnel properly trained, authorized, and equipped to perform EDTO maintenance functions?			
	10.3	Is current technical data available at the location?			
REFERENCE	**11**	**Minimum Equipment List**	**S**	**NS**	**N/A**
	11.1	Has a current MEL been submitted?			
	11.2	Does the submitted MEL contain the items identified by ATA code in the manufacturer's manual as significant?			
	11.3	Are the items properly identified as EDTO operations required?			

Item Number	REMARKS

INSPECTOR NAME		**ORG REP NAME**	
INSPECTOR SIGNATURE		**ORG REP SIGNATURE**	

OPERATIONS ETOPS CERTIFICATION

Record ID:	Inspector	Type of Approval Process: ☐ Conventional ☐ Accelerated	Activity Number:

Date Accomplished:	Tracking #	Operator	Company Official:

APU Type:	Engine Type:	AC Type/Model:	Diversion Time Request ☐ 75 min. ☐ 90 min. ☐ 120 min ☐ 30 min. min.

Instructions for Use:

1. Check YES column if you reviewed the record, procedure or event and have no comment.
2. Check NO column if you reviewed the record, procedure or event and have a comment.
3. Check ☺ column if you did not review the record, procedure or event *or you do have adequate information to make a valid comment*
4. Enter the letter 'N' in the column, if the line item is not required in this particular situation.
5. Enter any notes on reverse side regarding a NO answer.
6. For later reference, precede any notes with the appropriate question number.

YES	NO	☺		**APPLICATION PROCESS**
			1.	Initial Application Date:
			2.	Pre-Application Meeting Date:
			3.	Schedule of Events – Date Received:
			4.	Projected Start Up Date:
			5.	Conformity Statement – Date Received:
			6.	Documents Request Letter to the Operator - Date Sent:
				COMPANY PROCEDURES MANUALS
			7.	Revision to the Flight Operations Manual?
			8.	ETOPS Operations Manual? (Subject to revision control?)
			9.	ETOPS Chapter of the Flight Operations Organization &Procedures Manual?
			10.	Revision to the operational procedures manual for area navigation?
				AIRCRAFT-SPECIFIC CHECKLISTS & MANUALS
			11.	Revision to the condensed normal operations checklists?
			12.	Revision to the condensed emergency and abnormal checklist?
			13.	Details of the aircraft ETOPS systems and limitations?
			14.	Manufacturers Pilot Operating Handbook with ETOPS references?
			15.	Manufacturers Flight Crew Operating Manual with ETOPS references?
			16.	Company Aircraft Operating Manual with ETOPS references?
			17.	Revision to the Runway analysis manual (or AFM charts and
			18.	Revision to the Performance and planning manual (or AFM section)?
			19.	Revision to the MEL?
			20.	ETOPS Technical Log Procedures?
				FLIGHT CREW TRAINING AND QUALIFICATION ANALYSIS
			21.	Ground school ETOPS awareness Flight preparation Performance Data Decision making Diversion Procedures Crewmember incapacitation ETOPS regulations Fuel management Abnormal/Emergency procedures
			22.	Simulator training program & syllabi Maneuvers LOFT authority
			23.	Aircraft 'Line' flight training program- As observer- As crewmember
			24.	Training Location:
			25.	Contract Training? Instructor Resumes Instructor Approvals Contractor:
			26.	Flight operations experience Direct (same Make/Model) Related (simulated ETOPS, area of operations, ETOPS other makes/models)

			27.	List of personnel qualification & training currency
				FLIGHT PLANNING ANALYSIS
			28.	Operational Flight Plan ☐Manually generated ☐ Computer generated ☐Appropriate routing ☐Weather acquisition system ☐ Fuel planning system ☐ Contingency information ☐
			29.	Route/s:_____ _____ _____ _____
			30.	Suitable En-route Alternate Airports ☐ Fire protection Lodging ☐ PAX handling ☐Fuel and oil servicing ☐ Approach facilities ☐ A/P lighting ☐ A/P facilities ☐ Maintenance facilities ☐ Stable w/x conditions ☐ Medical facilities ☐ Listing: _____ _____ _____
			31.	Alternate weather validity period (1 hr. before earliest ETA until 1 hr. after latest ETA)
			32.	Dispatch alternate weather minima **1 runway:** DH/MDA +400feet & Vis. +1500mtrs. **2 runways** (with approach facilities**):** DH/MDA +200 feet & Visibility +800 meters
			33.	ETOPS Fuel burn performance tables or graphs available?
			34.	Fuel planning (FL 100, one engine out, ice accumulation)?
			35.	Critical Fuel Scenario Description?
			36.	Navigation Log completed in accordance with specifications?
			37.	Alternate airports identified in flight planning?
				LONG RANGE ROUTE REQUIREMENTS
			38.	Survival Equipment and its use?
			39.	Communication Equipment
			40.	Navigation ☐LORAN☐ OMEGA☐ GPS☐ INS ☐IRS☐ RSVM ☐
			41.	Passenger and crew Oxygen (time & distance)?
			42.	Time related cargo fire limitations? (unacceptable for ETOPS)
				NAVIGATION INFORMATION INCLUDING ETOPS
			43.	Flight plan and diversion route guide readily available?
			44.	Aeronautical information publication readily available?
			45.	IFR departure navigation charts for each required pilot?
			46.	IFR approach navigation charts for each required pilot?
			47.	IFR enroute navigation charts for each required pilot?
			48.	VFR enroute navigation charts for each required pilot?
				CONTINUING SURVEILLANCE & REPORTING SYSTEM
			49.	Any significant service event in the ETOPS fleet
			50.	Corrective actions for short & long term
			51.	Statistical reliability indicators for essential systems & engines
				ETOPS SIGNIFICANT SYTEMS
			52.	Appropriate maintenance release?
			53.	ETOPS Service Check?
			54.	Verification Flight?
			55.	Conformance with MEL dispatch procedures?
				ETOPS SIGNIFICANT SYTEMS
			56.	Electrical (including battery
			57.	Hydraulic
			58.	Pneumatic
			59.	F u e l
			60.	Ice Protection

			61.	Air Conditioning & Pressurization
			62.	Fire Protection
			63.	Auxiliary Power Unit
			64.	Engine Fuel & Control System
			65.	Engine Air System
			66.	Engine Start & Ignition
			67.	Engine Oil
			68.	Any other system necessary for ETOPS
				COMPANY MAINTENANCE MANUAL
			69.	ETOPS Revised Maintenance Control Manual?
			70.	ETOPS Revised Aircraft-specific Manufacturers Maintenance Manuals
			71.	ETOPS supplemented Aircraft flight-away kit included?

REMARKS & OBSERVATIONS

INSPECTOR SIGNATURE

Additional comments attached □ =>

CHAPTER 32: EVALUATION OF FLIGHT SIMULATOR STANDARDS

The remainder of this page reserved for future expansion of the condensed inspecting standards for Flight Simulator Standard Inspection

EVALUATION OF FLIGHT SIMULATOR STANDARDS

Record ID:	Inspector	Type of Operation	Activity Number – Checklist
Date Accomplished:	# Issues	Operator #	Tracking #
Location:	Simulator serial no.		

Instructions for Use:

1. Check YES column if you reviewed the record, procedure or event and have no comment
2. Check NO column if you reviewed the record, procedure or event and have a comment.
3. Check the column if you did not review the record, procedure or event *or you do have adequateinformation to make a valid comment*
4. Enter the letter 'N' in the column, if the line item is not required in this particular situation.
5. Attach any notes regarding a NO answer for transfer to the Safety Issues Resolution Report.
6. For later reference, precede any notes with the appropriate question number.

Yes	No			**CONFORMANCE WITH -**
			1.	ICAO Standards?
			2.	CARs Standards?
			3.	Copies of sums papers issued by certifying authority
				GENERAL
			4.	Cockpit, a full scale replica of the aeroplane simulated?
			5.	Direction of movement of control and switches identical to that in the Aeroplane?
			6.	Does the cockpit, for simulator purpose, consist of all that space forward of a cross section of the fuselage?
			7.	Do Additional required crew member duty stations and those required bulkheads of the pilots' seats, (considered part of the cockpit) replicate the aeroplane ?
			8.	Are circuit breakers properly located and functionally accurate?
			9.	Do the effects of aerodynamic changes for various combination of drag and thrust normally encountered in flight, correspond to actual flight conditions?
			10.	Effects of change in aeroplane attitude, thrust, drag, altitude, temperature, gross weight, centre of gravity location, and configuration?
			11.	Relevant instrument indications involved in the simulation of the applicable aeroplane, automatically respond to control movement by crew or induced disturbance to the simulated aeroplane: e.g. turbulence or windshear?
			12.	Communications, Navigation and Caution and Warning equipment correspond to that installed in the applicants aeroplane?
			13.	Are there observer seats available for the Examiner and Authority inspector?
			14.	Simulator systems should simulate applicable aeroplane system operation both on the ground and in flight, accomplish normal, abnormal and emergency procedures.
			15.	Instructor controls to control all required system variables and insert abnormal or emergency conditions?
			16.	Control forces and control travel correspond to that of the replicated aeroplane?
			17.	Cockpit sounds which result from pilot actions corresponding to those of the aeroplane?
			18.	Sounds and aeroplane noise perceptible to the pilot during normal operations?
			19.	The ground handling and aerodynamic programme comply with the provisions of CAR Part 1 and Implementing Standards?

			20.	Windshear models, which provide training in specific skills, comply with the provisions of CAR Part 1 and Implementing Standards?
			21.	Sim. has controls for wind speed and direction?
			22.	Sim. comply with the provisions of CAR Part 1 and Implementing Standards?
			23.	Sim has a means for quickly and effectively testing sim. programming and hardware?
			24.	Control feel dynamics and relative integrated sensory cues tested in the last Liberia CAA approval?
			25.	Daily preflight documentation easily accessible for review?
				MOTION SYSTEM
			26.	Motion cues e.g. touchdown cues a function of the simulated rate of descent?
			27.	Motion system in compliance with the CAR Part 1 Implementing Standards?
			28.	Means of recording Motion response time for comparison with aeroplane data?
			29.	Special effects programming?
			30.	Characteristic buffet motions?
				VISUAL SYSTEM
			31.	Visual system capable of meeting all standards (validation and Functions and Subjective Tests.
			32.	Continuous minimum collimated visual field-of-view as specified
			33.	A means of recording the visual response time for visual systems
			34.	Verification of visual ground segment and visual scene content at a decision height on landing approach.
			35.	Visual cues to assess sink rate and depth perception during T/O and landing
			36.	Test procedures to confirm visual system colour, RVR, focus, intensity, level horizon, and attitude compared with the simulated attitude indicator
			37.	Dusk scene to enable identification of visible horizon and terrain characteristics.
			38.	A minimum of ten levels of occulting
			39.	Demonstration of surface resolution confirmed by calculations in the statement of compliance.
			40.	Light point size
			41.	Light point contrast ratio
			42.	Daylight, Dusk and night scenes to recognize airport, the terrain and major landmarks to accomplish a visual landing.

" **REMARKS & OBSERVATIONS ATTACHED #**

CERTIFICATION INSPECTION: YES ☐ NO ☐

_____

INSPECTOR SIGNATURE:

CHAPTER 33: BASE INSPECTION

59.1 PURPOSE

The purpose of the inspection is to assess the suitability of the operator's organization, management, facilities, equipment, manuals, personnel and operations, maintenance and training records. The base inspection should be performed at the operator's principal base of operations, sub-bases and separate maintenance facilities.

59.2 BASE INSPECTIONS AREAS

(a) Before undertaking a base inspection, the inspectors should carefully review the operator's instructions including the operations, maintenance and training manuals.

(b) Upon arrival at the operator's base, the inspector should be introduced to the operations manager or equivalent officer, present credentials and explain the plan to conduct an in-depth inspection of the operator's base facilities and staffing arrangement. During the inspection, inspectors should refer to the appropriate manuals to confirm that established procedures and practices applicable to various areas of the operator's flight activities, maintenance and related training are being adhered to. The accuracy, completeness, accessibility and currency of the related manuals must also be verified. It must also be ascertained that the operator's organization and personnel do in fact function as outlined in the respective manual. Where changes in supervisory personnel or revisions in their duties or responsibilities have occurred, inspectors must determine that these changes are incorporated in the respective manuals. The primary purpose of the manual review is to determine that adequate and current instructions are provided to the operator's staff which enables them to properly perform their duties. The inspection should also verify the timely dissemination of the "need to know" information, including manual information, to appropriate personnel.

(c) When conducting the base inspection, inspectors should determine that the buildings, including hangars, maintenance shops and administrative, operational control, technical and training work areas, are properly equipped, functional and adequate for the purposes intended.

20.1.1 Checklist

Inspectors should use the Base Inspection Checklist (see figure below) while conducting these inspections. This checklist contains a list of reminder items for the specific inspection areas that should be observed and evaluated. Items may be evaluated during a base inspection, which are not listed on the checklist. For such items, inspectors should use the remarks section to record these comments and notes during the inspection, which can later be transferred to a Safety Issue Resolution Report.

BASE INSPECTION

Record ID:	Inspector	Type of Operation	Activity Number Checklist
Date Accomplished:	# Issues	Operator #	Tracking #
Base location		AOC No.	
Base Manager		Aircraft Types Supported	

***Instructions for Use*:**

1. Check YES column if you reviewed the record, procedure or event and have no comment.
2. Check NO column if you reviewed the record, procedure or event and have a comment.
3. Checkcolumn if you did not review the record, procedure or event *or you do have adequate information to make a valid comment*
4. Enter the letter "N" in thecolumn, if the line item is not required in this particular situation.
5. Attach any notes regarding a NO answer for transfer to the Safety Issues Resolution Report.
6. For later reference, precede any notes with the appropriate question number.

Yes	No	N/A		**ORGANIZATION, BASE FACILITIES AND AIRCRAFT EQUIPMENT**
				Staffing and organization
			1.	Management structure
			2.	Operations department staffing
			3.	Traffic and loading staff
			4.	Systems for provision of information
				Base facilities
			5.	Adequacy of office services
			6.	Accommodation
			7.	Operations library
			8.	Legislation and AIS information
			9.	Flying staff instructions
			10.	Aircraft technical library
			11.	Navigation logs/records
			12.	Pilot's flight briefs
			13.	Voyage reports
			14.	Passenger and cargo handling procedures
			15.	Passenger and cargo handling equipment
				Safety Programme
			16.	Flight data analysis programme
			17.	Accident Prevention and Flight Safety Programme
			18.	Safeguards to protect source of data
			19.	Programme is non-punitive
				Aircraft equipment
			20.	Normal equipment
			21.	Emergency equipment
			22.	Internal and external markings/notices
			23.	Checklists
			24.	Radio/radar navigation equipment
			25.	Automatic Systems (auto-land, etc)

Automatic systems (auto-land, etc.)

Automatic systems (auto-land, etc.)

				OPERATIONS MANUAL
			26.	Purpose and scope of manuals
			27.	List of manuals comprising operations manual
			28.	Manuals to be carried on aircraft
			29.	Responsibility for manual content
			30.	Responsibility for manual amendment
			31.	Distribution of manuals and amendments
				MANAGEMENT ORGANIZATION
			32.	Safety Manager
			33.	Operations manager — duties and responsibilities
			34.	Technical manager — duties and responsibilities
			35.	Chief pilot — duties and responsibilities
			36.	Training captains — duties and responsibilities
			37.	Flying hours for management personnel
				CREW TO BE CARRIED
			38.	Composition of crew
			39.	Minimum flight crew
			40.	Minimum number of cabin attendants
			41.	Carriage of navigator
			42.	Carriage of flight engineer
			43.	Crew licences
				DUTIES OF FLIGHT CREW AND OTHER OPERATING STAFF
			44.	Designation of pilot-in-command
			45.	Authority of pilot-in-command
			46.	Duties of crew members
			47.	Briefing of passengers
			48.	Necessity of pilots to remain at controls
			49.	Co-pilot handling of the aircraft
			50.	Refuelling duties/responsibilities
			51.	Loading by flight crew
				FLIGHT DECK MANAGEMENT
			52.	Preflight action by pilot-in-command
			53.	Succession to command
			54.	Normal duties
			55.	Flight crew — division of IMC duties
			56.	Flight crew — procedures in event of incapacitation
			57.	Flight crew — acknowledgement of calls during take- off and landing
			58.	Flight crew — querying of deviations from flight plan
			59.	Flight crew — briefing before take-off and landing
			60.	Flight crew — consumption of alcohol
			61.	Flight crew — wearing of harness for take-off and landing
			62.	Flight crew — simulation of emergencies not permitted when carrying passengers
			63.	Operation of radio in aircraft
			64.	Radio checking procedure
			65.	Altimeter checking procedure
			66.	Operation of flight data recorder
			67.	Emergency evacuation procedures
			68.	Procedures in event of pressurization failure
				FLIGHT TIME LIMITATIONS
			69.	Definitions of:
			70.	Flight time
			71.	Duty period
			72.	Flying duty period
			73.	Split duty
			74.	Positioning
			75.	Standby duty
			76.	Rest period
			77.	Time off

			78.	Day
			79.	Local day/night
			80.	Local time
			81.	Requirement of scheme to regulate flight times
			82.	Maximum duty period — two pilot crew — aero plane
			83.	Maximum duty period — single pilot crew — aero plane
			84.	Maximum duty period — two pilot crew — helicopter
			85.	Maximum duty period — single pilot crew — helicopter
			86.	Particular cases:
			87.	Extension of duty period by in-flight relief
			88.	Split duty
			89.	Positioning (dead-heading)
			90.	Standby duty
			91.	Traveling time
			92.	Pilot-in-command's discretion to extend flying duty
			93.	period
			94.	Minimum rest periods
			95.	Pilot-in-command's discretion to reduce rest period
			96.	Cumulative duty and flying hours:
			97.	Maximum weekly duty hours
			98.	Maximum monthly duty hours
			99.	Maximum monthly flying hours
			100.	Maximum annual flying hours
			101.	Duty cycles and time-off duty:
			102.	Normal duty cycle
			103.	Short breaks away from base
			104.	Time off at base
			105.	Records to be maintained for each crew member
			106.	Scheme for regulation of flight times for cabin attendants
			107.	Responsibilities of all crew members
				ADMINISTRATION
			108.	General requirement for AOC
			109.	Application for AOC
			110.	Requirement for air transport license
			111.	Form of certificate
			112.	Renewal of certificate
			113.	Variation of certificate
			114.	Revocation of certificate
			115.	Exits and break-in markings
			116.	Drunkenness in aircraft
			117.	Smoking in aircraft
			118.	Imperiling safety of aircraft
			119.	Stowaways
			120.	Carriage of livestock
			121.	Carriage of dangerous goods
			122.	Carriage of weapons of war
			123.	Carriage of unauthorized persons
			124.	Vehicle ferry operations
			125.	Provision of navigational flight-plan forms
			126.	Provision of pilot-in-command's brief
			127.	Provision of operations library
			128.	Filing airmiss reports Provision of operations library
			129.	Filing flight safety/incident reports
			130.	Allowable deficiencies Provision of operations library
			131.	Use of flight plans
				Provision of operations library

			132.	Use of Technical log
			133.	Method of deferring defects approved by Airworthiness Division
			134.	Carriage of Liberia CAA inspectors
				STANDARD AND EMERGENCY CHECKLISTS
			135.	Drills and checks to be listed in full in the operations
			136.	Checks required prior to take-off
			137.	Checks required prior to landing
			138.	Checking/setting V ref
			139.	Check of safety altitude before descent
			140.	Emergency drill — items to be covered
			141.	Checklists for two pilot crews
			142.	Checklist for flight engineers
			143.	Checklist for single pilot crews
			144.	Instruction that checklist must be used
			145.	Requirement for cabin attendants to be issued with individual copies of emergency evacuation drills
				FUEL FLIGHT PLANNING AND RECORDS
			146.	Flight planning formula
			147.	Island reserve
			148.	Rules for replanning in flight
			149.	Effect on fuel consumption of use of ancillary equipment
			150.	Effect on fuel consumption of engine or system failures
			151.	Fuel consumption records in flight (every hour)
			152.	Records of uplift and fuel states
			153.	Retention of fuel records:
			154.	Technical logs
			155.	In-flight records
			156.	Retention of fuel records on navigation logs
			157.	Refuelling with passengers on board — special instructions
			158.	Fumes in aircraft
			159.	Jettisoning fuel — special precautions
				ROUTE OPERATING INFORMATION
				Company policy on:
			160.	Flights on and off airways
			161.	Nomination of alternate aerodromes (heliports)
			162.	Operation of VFR flights
			163.	Cancellation of IFR flight plans
			164.	Details of AOC area of operations
			165.	Details of navigation area restrictions
			166.	Details of radio area restrictions
			167.	Definition of public transport
			168.	Flight plan/nav forms — items to be provided for:
			169.	to be retained for months
			170.	exceptions to above requirement
			171.	Use of prepared navigational flight plans
			172.	Nav log forms for use by navigators
			173.	Radio equipment to be carried
			174.	Operation of radio in aircraft
			175.	Radio failure procedures
			176.	Minimum safe altitudes
			177.	Terrain clearance following loss of engine(s)
			178.	Minimum aerodrome facilities for approach and landing
			179.	Documents to be carried on public transport aircraft
				Documents to be carried on public
				transport aircraft

			180.	Details of aircraft library and nav bag
			181.	Flying staff instructions or notices:
			182.	Operational
			183.	Technical
			184.	Administration
			185.	Time limit after issue
			186.	Requirement to carry life rafts
			187.	Provision and use of oxygen
			188.	Briefing of passengers in use of oxygen
			189.	Noise abatement procedures
			190.	Allowable deficiencies — guidance to pilots-in- command
				AERODROME OPERATING MINIMA
			191.	Operating minima to be included for every airfield used regularly in respect of take-off, landing and visual manoeuvring
			192.	Runways NOT to be used to be clearly indicated
			193.	Conditions for commencing a flight
			194.	Conditions for commencing/continuing an approach
				Definitions of:
			195.	Decision Height
			196.	Approach to landing
			197.	Circling approach procedures
			198.	RVR, etc.
			199.	Minima for pilots-in-command with limited experience on
			200.	Take-off and landing when an RVR reported
			201.	Take-off and landing when RVR is reported from more than one position on the runway
			202.	Instructions concerning landing in shallow fog
			203.	Alternate for each intended destination to be specified
			204.	General guidance concerning selection of alternate
			205.	Guidance concerning selection of “return” alternate
			206.	Instructions concerning use of return alternate — weather below landing minima
			207.	Minima for aerodromes without approach aids
			208.	Special minima for non-public transport flights
			209.	Special rules for aircraft with performance category C, D or E
			210.	Calculation of in-flight visibility for maneuvering
			211.	Relationship between RVR and DH
			212.	Conversion of reported MET visibility to RVR
				PERFORMANCE DATA
			213.	Simplified RTOW/landing mass data
			214.	Calculation of $V_{NO,}$ $V_{Ne,}$ etc.
			215.	Calculation of V1, V 2, and V ref
			216.	En-route performance, limitations
			217.	Flights over water
			218.	Effect on performance of take-off procedures at particular aerodromes
			219.	Effect of noise abatement requirements
			220.	Abnormal pressurization affecting performance
			221.	Definitions of:
			222.	Landing distance
			223.	Take-off distance
			224.	Emergency distance, etc.
			225.	Factors arising from runway surface conditions:

			226.	Water
			227.	Snow and slush
			228.	Ice
			229.	Grass
			230.	Minimum strip width after snow clearance
			231.	Cross-wind limitations
			232.	Maximum wind velocity — light aircraft
			233.	Airworthiness or flight manual approval for above
			234.	Flight manual performance figures
			235.	Compliance with any special handling instructions not specified in Certificate of Airworthiness or flight manual
			236.	Ferry flights with one engine inoperative
			237.	Handling techniques — one engine inoperative
			238.	Weather and route limitations
			239.	Fuel consumption
				TECHNICAL INFORMATION
			240.	Airframe leading particulars
			241.	Simplified description of systems
			242.	System pressures
			243.	Fuel system
			244.	Flying controls, etc.
			245.	Airframe limitations:
			246.	V_{NO}
			247.	V_{NE}
			248.	$V_{MO/MMO}$, etc
			249.	Engine — basic details
			250.	Engine limitations
			251.	C-18 Certification and Continued Surveillance
			252.	Engine handling procedures
				Approved type of:
			253.	Fuel
			254.	Oil
			255.	Coolant
			256.	Hydraulic fluid
			257.	Water/methanol
			258.	Anti-icing fluid, etc.
			259.	Replenishment of all systems
			260.	Refuelling or de-fuelling
			261.	Operating instructions — all systems
			262.	Electrical
			263.	Hydraulic
			264.	Brakes
			265.	Anti-icing
			266.	Oxygen, etc.
			267.	Radio equipment — general description
			268.	Radio equipment — operating instructions
			269.	Operating instructions for:
			270.	Auto-pilot
			271.	Flight director system
			272.	Flight recorder
			273.	Special navigation equipment, etc.
			274.	Preflight inspection by crew
			275.	Abnormal drills:
			276.	Invertor failure
			277.	Flight systems failures, etc.

			278.	Following lose of engine in turbulence
			279.	On slippery surfaces, etc.
			280.	Safety precautions (no smoking)
			281.	Operation with defective fuel tank
			282.	Method of use of oxygen
				CHECK — OPERATIONS MANUAL AND TRAININGMANUAL
			283.	Purpose and scope
			284.	Responsibility for content
			285.	Responsibility for distribution
			286.	Responsibility for amendment
			287.	Training staff duties and responsibilities
			288.	Policy statements covering:
			289.	Responsibility for appointment and supervision of training staff
			290.	Qualifications of training staff
			291.	Use and approval of flight simulators
			292.	Administration and recording of crew tests
			293.	Employment of pilots and flight engineers on more than one type
			294.	Method of simulating engine failure
			295.	Method of simulating in-flight conditions
			296.	Conversion training
			297.	Minimum qualification and experience
			298.	Ground technical training
			299.	Flight conversion training
			300.	Special equipment training
			301.	Cabin attendant training
			302.	Route qualification
			303.	Records of progress
			304.	Certification of completion of each stage
			305.	Conversion to aircraft commander (captain)
			306.	Periodic Crew Tests
			307.	Flights on which training may be conducted
			308.	Adequacy of training syllabus
			309.	Adequacy of check forms/certificate for crew test
			310.	Survival tests
			311.	Six-month check — pilot-in-command/co-pilot
			312.	Line check — pilot-in-command/co-pilot
			313.	Rating checks
			314.	Instrument approach competence
			315.	Pilot-in-command route competence
			316.	Flight navigators checks
			317.	Flight engineer checks
			318.	Pilot-in-command recent type experience
			319.	Pilot-in-command aerodrome qualification
			320.	Cabin attendant checks
			321.	Pilots' familiarity with flight engineer panel
				TECHNICAL RECORDS
			322.	Validity of maintenance certifications
			323.	Maintenance release properly executed
			324.	Technical logs correctly completed
			325.	Fuel, oil and methanol quantities sufficient for flight
			326.	Flight times correctly entered:
			327.	Technical log
			328.	Flight log
			329.	Engine log

			330.	Propeller (if applicable) log
			331.	Defect correction properly covered by signature
			332.	Significant defects entered as they occur
			333.	Deferred defects log
			334.	Recurring defects and any shortage of spares
			335.	Records of FDR parameter allocation, conversion equations, periodic calibration and serviceability/maintenance information
			336.	Retention of flight recorders in safe custody pending their disposition
				CREW RECORDS
			337.	Records of flying duty, duty and rest periods
			338.	Discretionary reports
			339.	Records of periodic crew tests:
			340.	All crew — emergency/survival
			341.	All pilots:
			342.	Annual instrument rating renewal
			343.	Line checks
			344.	Six-month checks
			345.	Instrument approach proficiency
			346.	Recency checks
			347.	Pilot-in-command — area/route checks
			348.	Flight engineers — six-month/line checks
			349.	Flight navigator — annual checks
			350.	Induction and conversion training
			351.	List of operator's check and training pilots

REMARKS & OBSERVATIONS

_____

INSPECTOR SIGNATURE

Additional comments attached □ =>

CHAPTER 34: EVALUATION OF TRAINING AND CHECKING MANUAL

Record ID:	Inspector	Type of Operation	Activity Number – Checklist
Date Accomplished:	# Issues	Operator #	Tracking #
Location:			

Instructions for Use:

1. Check YES column if you reviewed the record, procedure or event and have no comment.
2. Check NO column if you reviewed the record, procedure or event and have a comment.
3. Check column if you did not review the record, procedure or event *or you do have adequate information to make a valid comment*
4. Enter the letter 'N' in the column, if the line item is not required in this particular situation.
5. Attach any notes regarding a NO answer for transfer to the Safety Issues Resolution Report.
6. For later reference, precede any notes with the appropriate question number.

Yes	No	N/A		MANUAL CONTROL
			1.	COMPLETE CHECKLIST 0-19
			2.	**TRAINING ORGANIZATION**
			3.	Structure of the training and checking organization
			4.	Training policies and directives
				INSTRUCTORS AND EXAMINERS
			5.	List of designated instructors and line check airmen
			6.	**SYLLABI**
			7.	Comprehensive syllabi, including lesson plans for approved training for Flight Crew
			8.	CFIT
			9.	ACAS
			10.	Comprehensive syllabi, including lesson plans for approved training for Dispatchers
			11.	Comprehensive syllabi, including lesson plans for approved training for Cabin Crew
			12.	**EXAMINATIONS**
			13.	Procedures for the conduct of examinations and manoeuvre tolerances for flight crew
			14.	Procedures for the conduct of examinations for dispatchers
			15.	Procedures for the conduct of examinations for cabin crew
			16.	**COMPLETION STANDARDS**
			17.	Procedures to require that flight crew members are properly trained and examined on abnormal and emergency conditions
			18.	Procedures to require that cabin crew members are properly trained and examined on abnormal and emergency conditions
			19.	Procedures for remedial training and subsequent examination of flight crew unable to achieve or maintain required standards
			20.	Procedures for remedial training and subsequent examination of
				dispatcher unable to achieve or maintain required standards
			21.	Procedures for remedial training and subsequent examination of cabin crew unable to achieve or maintain required standards

RECOMMEND ACCEPTANCE: ☐ YES ☐ NO (Reasons cited below)

INSPECTOR SIGNATURE:

REMARKS & OBSERVATIONS

CHAPTER 35: DANGEROUS GOODS INSPECTION

Record ID:	Inspector	Type of Operation	Activity Number – Checklist
Date Accomplished:	# Issues	Operator #	Tracking #
Base location		AOC No.	
Base Manager		Aircraft Types Supported	

Instructions for Use:

1. Check YES column if you reviewed the record, procedure or event and have nocomment.
2. Check NO column if you reviewed the record, procedure or event and have a comment.
3. Check column if you did not review the record, procedure or event or you do have adequate information to make a valid comment
4. Enter the letter 'N'in the column, if the line item is not required in this particular situation.
5. Attach any notes regarding a NO answer for transfer to the Safety Issues Resolution Report.
6. For later reference, precede any notes with the appropriate question number.

Yes	No	N/A		DANGEROUS GOODS INSPECTION
				APPROVAL TO TRANSPORT DANGEROUS GOODS
			1.	Written permission under in compliance with the regulations has been obtained by the operator, consignor, or consignee.
				PACKAGING AND DOCUMENTATION
			2.	Dangerous goods are packed, marked, and labeled in accordance with the Technical Instructions.
			3.	Packaging used for the transport of dangerous goods is of good quality and meets the material and construction specifications contained in the Technical Instructions.
			4.	A dangerous goods transport document ("Shipper's Declaration") is completed, signed and provided by the shipper to the operator.
			5.	An acceptance check-list, as required by the Technical Instructions, is available with the acceptance staff of the operator and is being used when accepting dangerous goods.
			6.	Notification to the pilot-in-command about dangerous goods is provided well before the departure of the aircraft.
			7.	Dangerous goods being loaded on the aircraft are checked to be free from any leakage or damage.
				LOADING RESTRICTIONS
			8.	Dangerous goods are not carried in the flight deck or cabin occupied by passengers.
			9.	Those dangerous goods, which according to the Technical Instructions are required to be transported by cargo aircraft, are not carried in passenger aircraft.
				PROVISION OF INFORMATION
			10.	Information regarding prohibition of carriage of dangerous goods in the checked baggage, carry-on articles and on any person is displayed by the operators and the Airport Authority of Nigeria at vantage points in the departure hall of each airport.

				TRAINING PROGRAMMES
			11.	Any person engaged in the transportation of dangerous goods in any manner has under gone proper training in accordance with the Technical Instructions at an LCAA approved institute.
			12.	The training records of the shippers, freight forwarders and operators are properly maintained.
			13.	Check for full compliance with CAR 9.3 by the shippers, freight forwarders, couriers, operators or any other person involved in the offer, acceptance, handling, storage, loading and transportation of dangerous goods by air.

REMARKS & OBSERVATIONS

INSPECTOR SIGNATURE:_____

Submission of Reports and other Follow-Up Action

1. The Dangerous Goods Coordinator Inspector shall send a monthly report to the DOT Administrative ATO of the LCAA in accordance with the attached Pro-Forma, for further necessary action. However, if immediate corrective action is warranted, the same may be taken by the Inspector in accordance with the provisions of the CAR and upon notice by the Inspector to the Director General of the situation and the intended corrective action to be taken.

2. Any observations of other LCAA field personnel relating to any training aspect or any other deficiency in complying with the applicable rules pertaining to the transport of dangerous goods shall be brought to the attention of the Dangerous Goods Coordinator Inspector.

3. In the event that the Technical Instructions are not followed, the LCAA may elect to pursue an enforcement action. The Inspector shall follow the procedures set forth in DOT Handbook relating to the Enforcement and Compliance procedures

INSPECTION REPORT ON THE SAFE TRANSPORT OF DANGEROUS GOODS BY AIR

MONTH OF _____

- **Name of Location** _____
- **Name of Inspector or other LCAA personnel** _____
- **Name and full address of the organization or agency inspected** _____
_____
_____
- **Date of inspection** _____
- **Deficiencies observed** _____
_____
_____
_____
- **Immediate corrective action taken** _____
_____
_____
- **Suggestions on further action to be taken** _____
_____
_____

Dated _____

Signed _____

By the Dangerous Goods Coordinator Inspector

CHAPTER 36: EVALUATION OF AIRCRAFT OPERATING MANUAL (AOM)

37.15 BACKGROUND

(a) An Aircraft Operating Manual (AOM) containing the required information and approved by the Inspector under the provisions of this Chapter is an approved flight manual for the purposes of the regulations. An approved AOM is the only flight manual that needs to be carried aboard an aircraft. Inspectors must evaluate an operator's AOM using the guidance that follows. Air operators shall develop procedures to ensure that the Aircraft Operating Manual is updated by implementing changes made mandatory or approved in the Aircraft Flight Manual (AFM).

(b) Identification as a Flight Manual. Inspectors must ensure that an AOM is clearly marked as an approved flight manual for a specific operator. Sections of an AOM which contain approved information must also be clearly identified.

(c) Approved Sections of an AOM. Inspectors must ensure that the approved sections of an AOM contain all of the information that is required by the flightcrew to operate the aircraft. Inspectors should evaluate the approved sections of an AOM for the following.

(d) The procedures section of an AOM must contain all procedures required by the AFM and for each operation the operator conducts. As a minimum, the operator must include sufficient detail to allow a trained crew to safely and effectively operate the aircraft. The Procedures Section of the manual may be divided into subsections such as normal, non-normal, and emergency procedures.

(e) The operator's performance data in an AOM must contain the data from the AFM and instructions on how to use that data. Operators may assign the responsibility for performing takeoff and landing data computations to flightcrew or ground personnel. The flightcrew must have access to adequate data in the cockpit, (including information for the specific airport and runway to be used) to perform the computations for which they are responsible. When takeoff and landing data is presented in tabular format for specific runways, it is often referred to as an airport analysis. Performance data may be published under separate cover and be given titles such as performance manual or airport analysis. When performance data is published under separate cover, it must be identified as a portion of the AOM. Takeoff and landing performance data may be stored in an onboard or ground based computer.

(f) The Limitations Section of an AOM must be clearly identified as approved. The Limitations Section of an AOM must contain each limitation, which is contained in the AFM.

(g) Accepted Sections of an AOM. Accepted sections of an AOM may contain supplementary information such as aircraft and systems descriptions, an expanded explanation of procedures, special policies and procedures, and other selected topics pertinent to operation of the aircraft type. The accepted sections of a AOM must conform to the regulations and safe operating practices but do not need to conform to corresponding sections of the AFM, either in format or content. Inspectors should ensure that the AOM developed by or for the operator contains sufficient explanation and guidance for flightcrew use in the safe operation of the particular aircraft type. Background information or information that is not specific to the operation of the particular aircraft should be placed in a section of the Operations Manual, rather than in a supplementary section of the AOM.

37.16 AIRCRAFT SYSTEMS DESCRIPTION

Operators must provide crewmembers with a systems description of an aircraft's systems and components that contains sufficient detail to allow flight crewmembers to adequately understand and perform all procedures in the flight manual. AFMs, and AOMs may or may not contain a systems description section. The aircraft systems description section of a manual is "accepted" as opposed to "approved." Operators may choose to place the systems description information in an accepted section of an AOM or in a section of the Ops Manual, such as a training manual.

37.17 PROCEDURES

37.17.1 General

(a) Inspectors should not construe procedures published in an AFM to be the only or best means of accomplishing a specific objective. Because AFM procedures are formulated primarily for aircraft certification purposes, Inspectors should encourage operators to develop procedures appropriate to revenue operations for inclusion in an AOM.

(b) Tailoring operators procedures. Procedures incorporated in an AOM should be tailored by the operator to accommodate the operator's type of operation, fleet standardisation objectives, and cockpit management objectives. As an operator's operations become more complex, it is progressively more important to include detailed guidance in the flight manual, which is specifically tailored to the operator's operations.

(c) Approving Different Procedures. Aircraft which have been modified by Supplemental Type Certificate (STC) may require different procedures than unmodified aircraft. Inspectors must co-ordinate approval of procedures with Maintenance Inspectors to ensure modifications are accounted for in the operator's procedures.

(d) Step-by-Step Format. Procedural information included in an AOM must be presented in a step by step format. A procedural step in an AFM procedure must

be included in the equivalent AOM procedure, unless the inspector approves the deletion through the process described in paragraph 2.3.1.10 below.

(e) Standard Operating Procedures. Operators are responsible for developing effective standard operating procedures. The development process for standard operating procedures consists of the operator or other qualified party (such as the manufacturer) conducting a painstaking task analysis of the man machine environment relationship. Although this analysis is time consuming and expensive, it is necessary to meet the required level of safety in air transport operations. Specific guidelines for developing aircraft operating procedures are almost nonexistent. Inspectors should encourage those operators that do not have extensive experience in developing their own procedures to follow the manufacturer's recommendations.

(f) Inspector's Responsibility. Inspectors should ensure that operators standardise their operating procedures both within and across aircraft types to the greatest extent possible. Inspectors should make operators aware of the following information concerning procedures for standardisation:

(1) Standardised procedures promote understanding and effective communications between crewmembers. Research has shown that standardised procedures and effective communications are significant factors in reducing error in the cockpit and in enhancing safety;

(2) Crewmembers of most large operators operate numerous different aircraft during their career. Standardised procedures enhance a crewmembers transfer of learning and minimise negative transfer when the crewmember transitions from one aircraft to another;

(3) A complete standardisation of procedures is not possible when there are significant differences between "manufacturer's" and "installed" equipment. A high degree of standardisation, however, is possible. For example, the flight procedures for: engine failure after V1, engine fire after V1, and a missed approach with an engine out, can be designed to be identical. Each procedure might include the aircraft climbing at a reference speed to an identical clean up height, then accelerating, then retracting the flaps, and then continuing the climb at specified engine-out climb speed. The reference speeds might change depending on the aircraft weight, but the procedure could otherwise be identical. If the operator designed these procedures carefully, they could be used on all aircraft in the operator's fleet.

(g) Approving Combined Procedural Steps. Inspectors may approve combined procedural steps. For example, an AFM or RFM procedure specifies a two-step procedure such as the following: Step 1 - Smoke Goggles On, and Step 2 - O2 Mask On. The inspector could approve a one-step procedure such as the following: "Step 1. Smoke Goggles and O2 Mask – On". If there is a specific reason, however, for not combining the steps, the inspector must not approve such combinations. For instance, if in the previous example, for some reason the smoke goggle has to be put in place before the O2 mask can be put into place, the two-step procedure should be retained.

(h) Approving a Different Sequence of Steps. Inspectors may approve an arrangement of procedural steps in a different sequence from the sequence in the AFM. The operator must demonstrate to the Inspectors satisfaction that the change in sequence is safe and effective through validation testing. The inspector shall ensure adverse effects are not introduced. For example, with many aircraft the flaps are required to be extended or the trim to be set to specific settings before an adequate control check can be accomplished. If this sequence is reversed, the control check is invalid.

(i) Approving the Combination of Procedures into a Single Procedure. Inspectors may approve the combination of similar procedures into a single procedure. For example, it may be desirable for an operator to combine engine fire, engine failure, and severe engine damage procedures into a single procedure. Inspectors may approve the resulting procedure when validation testing shows the procedure to be clear, easy to use, and if it retains the safeguards of the individual procedures it replaces. If the combined procedure results in a complex and error prone procedure, the inspector shall not approve it.

(j) Evaluating the Effectiveness of Procedures. The inspector shall require the operator to present evidence that newly developed procedures are effective. This may be done by analysis, documentation, or validation tests. Tests may be conducted by the manufacturer, the operator, or another competent party (such as a contractor). The inspector or a designated inspector qualified in the aircraft must evaluate the effectiveness of such tests.

37.17.2 Normal procedures

(a) The normal procedures section of an AOM must contain procedures for each normal operation that flight crewmembers are required to perform. Each normal procedure should be amplified by the operator with sufficient instruction to ensure that the procedure is properly accomplished. Inspectors must ensure that this instruction is thorough enough to provide the least experienced flight crewmember with sufficient information to perform the procedures.

(b) Procedures Section of the AOM. Many operators include normal operating checklists and an explanation of how to accomplish each step of the checklists in the normal Procedures Section of the AOM. This is an acceptable practice; however, it is important to understand that an explanation of how to perform the normal checklist is not the only material required in the normal Procedures Section of a AOM. Guidance for operational procedures for which there are no checklists (such as the takeoff procedure) must also be addressed. Procedures for crew co-ordination and for the use of checklists must be included. The Procedures Section of an AOM must contain clearly specified crew duties. For example, the Procedures Section should contain a specific assignment for the crewmember that is responsible for setting power and maintaining directional control when the SIC is conducting a takeoff.

(c) Additional Procedures. Inspectors may require the operator to develop and publish normal procedures in an AOM which are not in the AFM, when the procedures are necessary to ensure an adequate level of safety. Instrument approach procedures, adverse weather operations, long range navigation, and special procedures for CAT II and CAT III operations are all examples of required normal procedures which may not be in an AFM or RFM.

(d) Procedures for Computer Operations. Operators may need to develop extensive procedures for operating computer-based systems in the cockpit. A description of computer displays and controls does not normally provide a crewmember with adequate information to operate such systems. Procedures for computer operations should be keyed to menus and display prompts. Procedures should be written in an interactive format rather than as a rote listing of keystrokes.

37.17.3 Non-normal and emergency procedures

(a) Non-normal (or abnormal) and emergency procedures in an AFM are usually presented in more detail than are normal procedures. The steps and the order of steps in these procedures are often critical. Inspectors must exercise caution in approving the modification of non-normal and emergency procedures. The effects of most procedural steps on the airworthiness of the aircraft are obvious but the effects of some are not. For example, it may be necessary to depressurize a hydraulic system to successfully perform a manual landing gear extension. Deleting a step or a change in the sequence of steps of such a procedure could make the procedure ineffective. There have been instances in which operators have erroneously proposed modifying an AFM procedure, and Inspectors have unintentionally approved the modification, which invalidated the certification basis of the aircraft. Inspectors should use the guidance that follows when evaluating an operator's non-normal or emergency procedures in AFMs or AOMs.

(b) Proposal to Modify a Non-Normal or Emergency Procedure. When an operator proposes to modify a non-normal or emergency procedure, the operator must show that the modified procedure does not adversely affect the airworthiness of the aircraft. The operator may establish the safety and effectiveness of proposed procedures by analysis, documentation, or validation tests.

(c) Concurrence with the Appropriate Authority. Inspectors shall contact the applicable appropriate authority and obtain concurrence before approving deletion of an item or the rearrangement of items on these checklists. Appropriate authority concurrence may be expressed informally (by telephone). Appropriate authority concurrence is not required if the operator provides evidence that the appropriate authority has already concurred with the identical procedure for another party (such as another operator or manufacturer).

37.17.4 Immediate actions

(a) An immediate action is an action that must be accomplished so expeditiously (in order to avoid or stabilize a hazardous situation) that time is not available for a crewmember to refer to a manual or checklist. Crewmembers must be so familiar with these actions that they can perform them correctly and reliably from

memory. Inspectors must ensure that immediate action situations are included in an operator's AFM or AOM, as appropriate. Situations that require immediate action include, but are not limited to the following:

(1) Imminent threat of crewmember incapacitation;

(2) Imminent threat of loss of aircraft control;

(3) Imminent threat of destruction of a system or component which makes continued safety of the flight and subsequent landing improbable.

(b) Immediate Action Items. Under this criteria, a flightcrew donning oxygen masks in response to a depressurisation or turning off the fuel and ignition in case of a hot start, are situations requiring mandatory immediate action items. The loss of thrust on a jet engine during cruise, however, would not normally require an immediate action item according to this criteria.

(c) Identifying Immediate Action Items. Inspectors must ensure that immediate action items are explicitly identified as such in an operator's AOM. It is not acceptable for immediate action items to be hidden (not specifically identified as an immediate action) in procedures or checklists.

(d) Checklists. Certain situations that either require or appear to require immediate action have proven to be a stimulus for evoking incorrect and inappropriate flightcrew actions. Therefore, immediate action items must be strictly limited to only those actions necessary to stabilise the situation. Inspectors must ensure that all remaining actions are accomplished by "challenge do verify" (CDV) checklists. CDV checklists have checklist items that require confirmation from a second crewmember before the step may be taken.

(e) Inspector Approval. Inspectors may approve an operator's proposal to replace immediate action items in an AFM procedure with challenge do verify (CDV) checklist procedures in a AOM, provided the operator shows compliance with the criteria in this paragraph and also demonstrates an equivalent level of safety through validation tests.

37.17.5 Mandatory confirmation items

(a) There are certain critical procedural steps that shall be confirmed by a second crewmember before the step may be taken. Inspectors must ensure that an operator's procedures, which contain such critical procedural actions, must clearly identify the critical actions and the crewmember who is responsible for giving the confirmation. The types of procedural actions that require this confirmation include the following:

(1) Actions resulting in the shutting down of an engine;

(2) Actions resulting in the deactivation of flight controls;

(3) Actions that if performed incorrectly, in the wrong sequence, or at the wrong time produce a catastrophic result, even if the incorrect action is not highly likely;

(4) Actions where past experience or analysis has shown that there is a high probability for error or incorrect action and which creates a hazardous situation.

37.17.6 Crewmember roles

(a) The AOM must clearly define the various crewmember roles and responsibilities. Inspectors should use the following guidance when ensuring that the operator clearly states policy and guidance for cockpit management in the AFM or AOM, as applicable.

(b) PIC Responsibilities. The operator's policy and guidance should make it clear that the PIC's primary responsibility is to manage the actions of the crew and the conduct of the flight. While the PIC may delegate the management of the flight and manipulation of the controls to the SIC, the AOM must not indicate that the PIC can delegate the responsibility for safe conduct of the flight.

(c) Responsibilities of Flight Crewmembers Not in Command. The operator's flight manual should contain policy and guidance to those flight crewmembers not in command, as to their responsibilities to the PIC and their responsibilities for the safe conduct of the flight.

(d) SIC (Co-Pilot) Responsibilities. The AOM must contain guidance for the PIC concerning the conditions and circumstances in which an SIC may operate the aircraft. The operator's policies must delineate the limits of authority delegated to the SIC when the SIC is the pilot flying (P-F). The operator's policies should address crew management in critical situations. For example, there may be certain situations in which the SIC should be the pilot flying (P-F) so that the PIC can concentrate on managing those situations, particularly ensuring that required actions and appropriate checklists are properly accomplished. Procedures for transfer of control must be clearly addressed in the AOM.

(e) Communications. In general, proper cockpit management requires effective communication and co-operative action between crewmembers which form consecutive closed loops. An example of this interaction is in the illustration that follows.

(f) Co-ordination. Research has shown that effective flightcrew co-ordinate their actions before any action is required. Inspectors shall ensure that AOMs contain

a requirement for briefings and also adequate guidance for the content of those briefings.

37.17.7 Operations not evaluated in aircraft certification

(a) If the operator proposes to conduct operations, which have not been evaluated during aircraft certification, the inspector must ensure that the operator has developed and obtained approval of procedures for the conduct of the proposed operation. Such operations are often indicated by the absence of a procedure for the operation in the AFM. Examples of such operations could include powerback and taxi with engine shutdown. Inspectors should use the following guidance when evaluating those operations not evaluated during aircraft certification.

(b) Specific Procedures for Specific Operations. Inspectors must ensure that each operation conducted must be specifically addressed by a procedure. For example, it should not be assumed that a procedure for shutting down and then restarting an engine during a taxi delay is equivalent to a procedure for delaying an engine start on initial taxi out. The same procedure may not be used for more than one operation unless analysis shows that more than one operation may be safely conducted using the same procedure.

(c) Co-ordinating Operations Procedures. Inspectors must ensure that an operational procedure is thoroughly co-ordinated with airworthiness Inspectors. Since adverse effects that a procedure could cause to the airworthiness of an aircraft or its systems may not be immediately apparent, the inspector must ensure that co-ordination with airworthiness is required. For example, a procedure for taxiing with engine shutdown could have a detrimental effect on the landing gear system if high asymmetrical engine thrust is used during sharp turns. If there is any question concerning the effects a procedure may have on the airworthiness of the aircraft, the inspector must co-ordinate with and obtain concurrence from the appropriate authority before granting approval of the procedures.

37.17.8 Limitations

(a) Inspectors must ensure that when operating limitations are incorporated in an AOM, that each limitation was transferred from the AFM. Inspectors should use the following guidance when evaluating the limitations of an operator's AOM:

(1) AFM Operating Limitations. Inspectors should evaluate the operator's AOM to ensure that all AFM operating limitations are published in the AOM and are clearly identified as AFM limitations. The limitations section of an AOM must contain every limitation from the AFM. Operators may add limitations to AOMs which were not in an AFM. One method of accomplishing this is for the operator to express all operator imposed limitations as policy statements in applicable procedures. When the operator chooses to blend AFM and operator imposed limitations in the limitations section of an AOM, the inspector must ensure that the operator used a method for clearly distinguishing each AFM limitation from the operator imposed limitations;

(2) Responsibilities. The operator is responsible for informing crewmembers of all AFM operating limitations. Crewmembers are responsible for observing all AFM limitations. The inspector must ensure that the AOM contains a statement that crewmembers are responsible for being aware of and for observing all limitations.

37.18 PROCEDURES/ JOB PERFORMANCE SUBTASKS:

37.19 Receive request from operator for approval to use an AOM.

(a) Open work tracking record.

(b) Conduct a detailed review of the AOM.

(c) Document results of the evaluation.

(1) If deficiencies are found. Return the AOM to the Certificate Holder and advise that the deficiencies need to be corrected.

(2) If deficiencies are not found. Notify the Certificate Holder that the AOM is satisfactory.

(d) Close work tracking record.

37.20 TASK OUTCOMES

(a) File an ISATS report.

(b) Task Completion. Successful completion of this task will result in the following:

(1) Approval of operator's AOM;

(2) Entering of operators manual approval data in SRS database.

(c) Document Task. File all supporting paperwork in the operator/applicant's office file.

EVALUATION OF AIRCRAFT OPERATING MANUAL (AOM)

Record ID:	Protocol #	Tracking #	Activity #
Date Accomplished	Action Taken	Inspector	Type of Operation:
Air Operator/Organization	Aircraft Make/Model:	Location #	
Title of Manual reviewed:			

Instructions for Use:

1. Check YES column if you determine the document or individual item conforms.
2. Check NO column if you determine that the document or individual line item does not conform. (Put a marker tab in the manual with a short note opposite the non-conforming item)
3. Use the reverse side of this form for notes.
4. Precede each note with the line item number for later correlation.
5. Check column if it is not applicable *or you do have adequate information to make a valid comment*

YES	NO			**OVERALL MANUAL PRESENTATION**
			1.	Bound in a secure form (not loose)?
			2.	Binder is 3 or 4 ring?
			3.	Exterior of binder clearly indicates manual content?
			4.	Prepared in English language?
				MANUAL CONTROL PROCESS
			5.	Copies numbered for controlled issuance?
			6.	Name or title of each person who holds a copy?
			7.	Amendment issuance tracking process?
			8.	Statement that the operations manual contains operating instructions which are required to be complied with by all personnel?
			9.	Statement of Compliance
				MANUAL REVISION PROCESS
			10.	Revision Instructions adequate?
			11.	Revision page for proper revision entry?
			12.	List of effective pages provided and correct?
			13.	Last revision to individual pages identified?
				MANUAL REFERENCING SYSTEM
			14.	Table of contents easy to find and use?
			15.	Index, if included, easy to find and use?
			16.	Tabbed as necessary for usability without difficulty?
				INDIVIDUAL PAGE PRESENTATION
			17.	Page numbered in chronological sequence (by chapter or single document?
			18.	Last revision number/date appears on each page?
			19.	Company name (and logo) appears on each page (exception–18)?
			20.	If manufacturer's document is submitted in lieu of a company manual, does the manufacturer's name appears on each page?
			21.	For all manufacturers' documents submitted,a manufacturer's letter or reference document is provided to substantiate current revision
				PARAGRAPH NUMBERING

			22.	Paragraphs and sub-paragraphs numbered or alphabetized for ease of reference?
				SUPPLEMENTARY CONTENT REFERENCING
			23.	Tables referenced for ease of use?
			24.	Figures referenced for ease of use?
			25.	Appendices referenced for ease of use?
				MANUAL CONTENTS CONFORMANCE
			26.	Certification limitations and operating limitations
			27.	The normal, abnormal and emergency procedures to be used by the flight crew, related checklists, crew coordination and assignment
			28.	Instructions for aircraft loading
			29.	Data for mass and balance calculations
			30.	Aircraft systems, associated controls and instructions for their use
			31.	Emergency evacuation procedures, including type specific procedures, crew coordination and assignment
			32.	Crew Briefing
			33.	Organization, update and revision system
			34.	CAR Implementing Standards AVIATION SAFETY AOC ADMINISTRATION INSPECTOR GUIDANCE AND SUPERVISION
			35.	Complies with _____ CAA Guidance Reference: AOC Administration:
			36.	Conforms to ICAO Annex 6-I, 6.1.3 Appendix 2 2.2.1, AOM Contents
				MANUAL EXCERPTS PROPERLY REFERENCED?
			37.	Condensed Checklists compared and current?
			38.	Passenger Briefing Cards compared and current?
			39.	Training materials?

RECOMMEND ACCEPTANCE: ☐ YES ☐ NO (Reasons cited below)

REMARKS & OBSERVATIONS

INSPECTOR SIGNATURE:

☐ Additional comments attached ⇨

CHAPTER 37: EVALUATION OF DISPATCH MANUAL

This page reserved for future expansion of the condensed inspecting standards for Operations Manual Initial Review Phase. Consult the appropriate technical source references in Part 4 for this task.

EVALUATION OF DISPATCH MANUAL

Record ID:	Protocol #	Tracking #	Activity #
Date Accomplished	Action Taken	Inspector	Type of Operation:
Air Operator/Organization	Aircraft Make/Model:	Location #	
Title of Manual reviewed:			

Instructions for Use:

1. Check YES column if you determine the document or individual item conforms.
2. Check NO column if you determine that the document or individual line item does not conform. (Put a marker tab in the manual with a short note opposite the non-conforming item)
3. Use the reverse side of this form for notes.
4. Precede each note with the line item number for later correlation.
5. Check column if it is not applicable *or you do have adequate information to make a valid comment*

YES	NO	N/A		**OVERALL MANUAL PRESENTATION**
			1.	Bound in a secure form (not loose)?
			2.	Binder is 3 or 4 ring?
			3.	Exterior of binder clearly indicates manual content?
			4.	Prepared in English language?
				MANUAL CONTROL PROCESS
			5.	Copies numbered for controlled issuance?
			6.	Name or title of each person who holds a copy?
			7.	Amendment issuance tracking process?
			8.	Statement that the operations manual contains operating instructions which are required to be complied with by all personnel?
			9.	Statement of Compliance
				MANUAL REVISION PROCESS
			10.	Revision Instructions adequate?
			11.	Revision page for proper revision entry?
			12.	List of effective pages provided and correct?
			13.	Last revision to individual pages identified?
				MANUAL REFERENCING SYSTEM
			14.	Table of contents easy to find and use?
			15.	Index, if included, easy to find and use?
			16.	Tabbed as necessary for usability without difficulty?
				INDIVIDUAL PAGE PRESENTATION
			17.	Page numbered in chronological sequence (by chapter or single document?
			18.	Last revision number/date appears on each page?
			19.	Company name (and logo) appears on each page (exception – 18)?
				PARAGRAPH NUMBERING
			20.	Paragraphs and sub-paragraphs numbered or alphabetized for ease of reference?
				SUPPLEMENTARY CONTENT REFERENCING
			21.	Tables referenced for ease of use?
			22.	Figures referenced for ease of use?
			23.	Appendices referenced for ease of use?

				MANUAL CONTENTS CONFORMANCE
				Organization And Management

			24.	Organizational Chart
			25.	Director - Flight Operations
			26.	Manager - Flight Dispatch
			27.	Flight Dispatcher
			28.	Flight Dispatcher & Pilot-In-Command
				General Operational Control Policies
			29.	Safety
			30.	Personal Conduct
			31.	Standardization
			32.	Notice of Violations
			33.	Personal Electronic Devices
			34.	Communications
			35.	Disagreement Resolution Policy
			36.	Communication Records
			37.	Dispatcher Records
			38.	Training
				Administration Policies
			39.	Objectives
			40.	Reporting For Duty
			41.	Shift/Workload Change Over
			42.	Briefing
			43.	Operational Control
			44.	Workload Management
			45.	Operational Tasks
			46.	Operating Procedures
				Flight Planning
			47.	General
			48.	Operational Flight Plan
			49.	Filing Flight Plans
			50.	Filing Flight Plans
			51.	Weather Minimum
			52.	Take-off and Landing Minima
			53.	Alternate Airports
			54.	Take-off Alternates
			55.	Auto or Computer Flight Planning
			56.	Manual Flight Planning
			57.	Manual Planning Fuel Calculations (example)
			58.	Manual Flight Plan Release (example)
			59.	Information Bulletins
			60.	Information Circulars
				Emergency Procedures
			61.	Roles and Responsibilities
			62.	Alarm Call List
			63.	Hazardous Material Call List ION
			64.	CAR Implementing Standards? AVIATION SAFETY AOC ADMINISTRAT INSPECTOR GUIDANCE AND SUPERVISION
			65.	Complies with Liberia CAA Guidance Reference: AOC
			66.	Conforms to ICAO Annex 6-I, Appendix 2, Ops Manual Contents
				MANUAL EXCERPTS PROPERLY REFERENCED?
			67.	Condensed Checklists compared and current?
			68.	Passenger Briefing Cards compared and current?
			69.	Training materials?

RECOMMEND ACCEPTANCE: ☐ YES ☐ NO (Reasons cited below)

REMARKS & OBSERVATIONS

INSPECTOR SIGNATURE

Additional comments attached ☐ =>

CHAPTER 38: EVALUATION OF SECURITY MANUAL

EVALUATION OF SECURITY MANUAL

Record ID:	Protocol #	Tracking #	Activity #
Date Accomplished	Action Taken	Inspector	Type of Operation:
Air Operator/Organization		Location #	
Title of Manual reviewed:			

Instructions for Use:

1. Check YES column if you determine the document or individual item conforms.
2. Check NO column if you determine that the document or individual line item does not conform. (Put a marker tab in the manual with a short note opposite the non-conforming item)
3. Use the reverse side of this form for notes.
4. Precede each note with the line item number for later correlation.
5. Check column if it is not applicable *or you do have adequate information to make a valid comment*

YES	NO			**OVERALL MANUAL PRESENTATION**
			1.	COMPLETE CHECKLIST 0-19
				MANUAL CONTENTS
			2.	Policy and adequate procedures to enable cabin crew to discreetly communicate to flight crew in the event of suspicious activity or security breaches in the passenger cabin?
			3.	Policy and adequate procedures in relation to the flight crew compartment access?
			4.	Policy and adequate procedures in relation to a bomb threat or warning, when the aircraft is on the ground or in flight?
			5.	Procedure checklist for searching a bomb and/or inspecting an aircraft for concealed weapons, explosives and other dangerous
			6.	Security training programme has been established and approved by the authority?
				TRAINING PROGRAMME
			7.	Security of the flight crew compartment
			8.	Aircraft search procedure checklist
			9.	Determination of the seriousness of any occurrences
			10.	Crew communication and coordination
			11.	Appropriate self-defense responses
			12.	Use authorized by the State of the Operator of non-lethal protective devices assigned to crew members
			13.	Understanding of behavior of terrorists
			14.	Live situational training exercises regarding various threat conditions
			15.	Post-flight concerns for the crew
			16.	Security of the flight crew compartment
			17.	Aircraft search procedure checklist
			18.	Determination of the seriousness of any occurrences
			19.	Crew communication and coordination
			20.	Appropriate self-defense responses
			21.	Use authorized by the State of the Operator of non-lethal protective devices assigned to crew members
			22.	Understanding of behavior of terrorists
			23.	Live situational training exercises regarding various threat conditions
			24.	Post-flight concerns for the crew

				SUPPLEMENTARY CONTENT REFERENCING
			25.	Tables referenced for ease of use?

			26.	Figures referenced for ease of use?
			27.	Appendices referenced for ease of use?
				MANUAL CONTENTS CONFORMANCE
			28.	Conforms to ICAO Annex 6-I

RECOMMEND ACCEPTANCE: ☐ YES ☐ NO (Reasons cited below)

INSPECTOR SIGNATURE: _____

REMARKS & OBSERVATIONS

☐ Additional comments attached ⇨

CHAPTER 39: PASSENGER HANDLING AND PUBLIC SAFETY INSPECTION

This page reserved for future expansion of the condensed inspecting standards for Passenger Handling and Public Safety Inspections. Consult the appropriate technical source references in Part 4 for this task.

PASSENGER HANDLING AND PUBLIC SAFETY INSPECTION

Record ID:	Inspector	Type of Operation	Activity Number – Checklist 1364
Date Accomplished:	Location	Operator #	Tracking #
Station Manager	Aircraft Types Supported		

Instructions for Use:

1. Check YES column if you reviewed the record, procedure or event and have no comment.
2. Check NO column if you reviewed the record, procedure or event and have a comment.
3. Check☺ column if you did not review the record, procedure or event *or you do have adequate information to make a valid comment*
4. Enter the letter "N" in the☺column, if the line item is not required in this particular situation.
5. Enter any notes on reverse side regarding a NO answer for transfer to the Safety Issues Resolution Report.
6. For later reference, precede any notes with the appropriate question number.

Yes	No			PASSENGER HANDLING IN TERMINAL
			1.	Acceptable procedures for identification and seat allocation for handicapped persons?
			2.	Seat allocation for infants and children?
			3.	Scales for weighing baggage and cargo?
			4.	Appropriate system for control of loose articles in the cabin (carry-on baggage?
				PASSENGER RAMP SAFETY
			5.	DAY – Air bridge/directions to board
			6.	NIGHT – Air bridge/directions to board
			7.	DAY – Proper positioning of steps?
			8.	NIGHT – Proper positioning of steps?
			9.	DAY – Staff in attendance with passengers?
			10.	NIGHT - Staff in attendance with passengers?
			11.	DAY – Protection from jet blast?
			12.	NIGHT – Protection from jet blast?
			13.	DAY – Clearance from propellers?
			14.	NIGHT – Clearance from propellers?
			15.	DAY – Clear of taxiing aircraft?
			16.	NIGHT – Clear of taxiing aircraft?
			17.	DAY – Clear of moving vehicles?
			18.	NIGHT – Clear of moving vehicles
			19.	DAY – Positioning of service vehicles?
			20.	NIGHT – Positioning of service vehicles?
			21.	DAY – Are there safety routes available for emergency evacuation?
			22.	NIGHT – Are there safety routes available for emergency evacuation?
				CREW COORDINATION WITH LOAD CONTROL
			23.	Are passengers occupying their assigned seats?
			24.	Was a head count compared to load manifest for accuracy?

REMARKS & OBSERVATIONS

INSPECTOR SIGNATURE

Additional comments attached ☐ =>

CHAPTER 40: CABIN CREW TRAINING INSPECTION

59.3 CONDUCT FACILITIES AND RECORDS INSPECTIONS

(a) Give a management representative short notice of the inspection. Conduct an entry meeting with the management of the training facility:

(1) Review the scope of the inspection.

(2) Agree on the allocation of company staff or resources that may be needed for the inspection.

(3) Request a discrete and private working area to facilitate the confidential assessment of documents and preparation of reports.

(b) Carry out the inspection, in a way that causes a minimum of disruption to the operator, using the appropriate checklists.

(1) Follow appropriate checklists and procedures when carrying out specific separate inspections for example, flight simulators.

(c) Conduct a short exit meeting with the a management representative. Briefly report the findings of the inspection

(1) Make arrangements for any follow-up action

59.4 OBSERVATIONS OF TRAINING-IN-PROGRESS SITUATIONS

(a) Give the AOC holder notice of your intention to conduct an inspection. Conduct an entry meeting with the management of the training facility:

(1) Review the scope of the inspection.

(2) Agree on the allocation of any company staff or resources that may be needed for the inspection.

(b) Carry out the inspection, in a way that causes a minimum of disruption to the operator, using the appropriate checklist

(c) Remain passive in classrooms and training areas. Do not:

(i) Ask questions of the instructors or students.

(ii) Distract instructors or students in any way

(iii) Displace existing students from their allocated seats or positions.

(d) Conduct a short exit meeting with the training management:

(i) Briefly report the findings of the inspection.

(ii) Make arrangements for any follow-up action.

CHECKLIST

YES	NO	NA		
			1	**ADMINISTRATION**
			1.1	Adequate accommodation and facilities?
			1.2	Adequate supervisory support staff available?
			1.3	Adequate administrative support staff available?
			1.4	Training schedules coordinated with operational needs?
YES	**NO**	**NA**	**2**	**PRODUCTION FACILITIES**
			2.1	Printing capability?
			2.2	Presentation development capability?
			2.3	Video editing capability?
			2.4	Electronic versions of training documents and handouts?
			2.5	Computers available to training and checking personnel?
YES	**NO**	**NA**	**3**	**TRAINING AND CHECKING MANUAL**
			3.1	Current revision (compare to CAA approved copy)?
			3.2	Current list of effective pages (compare to CAA approved
			3.3	Manual properly updated?
			3.4	Pertinent portions of manual provided to instructor, checking and administration staff?
			3.5	Tracking of amendments provided to personnel?
YES	**NO**	**NA**	**4**	**CURRICULUM AND LESSON PLANS**
			4.1	Curriculum(s) in use available?
			4.2	Lesson plan(s) in use available?
			4.3	Curriculum(s) and lesson plan(s) current to relevant regulation and industry practices?
YES	**NO**	**NA**	**5**	**INSTRUCTOR(S)**
			5.1	Adequate staffing/availability for range of training?
			5.2	Knowledge of subjects and procedures?
			5.3	Instruction techniques and delivery?
			5.4	Adherence to lesson plan outline, content and timing?
			5.5	Instructor(s) have proper qualifications?
			5.6	Instructor(s) records up-to-date?
			5.7	Appropriate “O” checklist for evaluation of instructor records completed?
YES	**NO**	**NA**	**6**	**CHECKING PERSONNEL**
			6.1	Adequate staffing/availability for range of checking?
			6.2	Checking personnel records are available?
			6.3	Checking personnel records up-to-date
			6.4	Appropriate “O” checklist for evaluation of checking person performance completed?
			6.5	Appropriate “O” checklist for evaluation of checking person records completed?
YES	**NO**	**NA**	**7**	**EVALUATION AND DEBRIEFINGS**
			7.1	Were the acceptable completion standards available?
			7.2	Did the student receive a debriefing regarding performance?

NO	NA	8	COMPLETION OF RECORDS
		8.1	Instructor or checking person made completion entries in student's record(s)
		8.2	Entries were accurate with respect to the debriefing and the student's performance?
NO	**NA**	**9**	**CLASSROOMS AND TRAINING AREAS**
		9.1	Number and size adequate for the purpose used?
		9.2	Student seating and writing accommodation?
		9.3	Student visibility accommodation?
		9.4	Student hearing accommodation?
		9.5	Minimal visual and aural distractions?
		9.6	Reasonable heating/cooling/ventilation/lighting?
NO	**NA**	**10**	**BRIEFING ROOMS FOR PRE/POST FLIGHT LESSON**
		10.1	Number and size adequate for the task?
		10.2	Adequately furnished and equipped?
NO	**NA**	**11**	**DOCUMENTS AND HANDOUTS [As specified in T&C Manual, curriculum, or lesson plan evaluated]**
		11.1	Appropriate portions of Operations Manual available?
		11.2	Training source materials and examples?
		11.3	Training problems and calculations?
		11.4	Tests and other evaluation tools?
NO	**NA**	**12**	**EQUIPMENT [As specified in T&C Manual, curriculum, or lesson plan evaluated]**
		12.1	Whiteboards, markers and erasers?
		12.2	Flight deck pictorial layout available?
		12.3	Overhead projector?
		12.4	Computer projector?
		12.5	Video player?
		12.6	Computer?
		12.7	Special Equipment – System Mockup available and
		12.8	Special Equipment – Synthetic trainer available and
		12.9	Special Equipment – Simulator available and operational?

REMARKS & OBSERVATIONS

INSPECTOR SIGNATURE

Additional comments attached ☐ =>

CHAPTER 41: EVALUATION OF STANDARDS OPERATING PROCEDURES (SOP)

The SOP shall include the following as applicable to the operation:

YES	NO	NA		
YES	NO	NA	1	MANUAL PRESENTATION
			1.1	Bound in a secure form (not loose)?
			1.2	Binder is 3 or 4 ring?
			1.3	Exterior of binder clearly indicates manual content?
			1.4	Prepared in language of the country?
			1.5	Prepared in English language?
YES	NO	NA	2	MANUAL CONTROL PROCESS
			2.1	Copies numbered for controlled issuance?
			2.2	Amendment issuance tracking process?
			2.3	DCA issued numbered volume?
YES	NO	NA	3	MANUAL REVISION PROCESS
			3.1	Revision Instructions adequate?
			3.2	Revision page for proper revision entry?
			3.3	List of effective pages provided and correct?
			3.4	Last revision to individual pages identified?
YES	NO	NA	4	MANUAL REFERENCING SYSTEMS
			4.1	Table of contents easy to find and use?
			4.2	Index, if included, easy to find and use?
			4.3	Preamble?
YES	NO	NA	5	NORMAL PROCEDURES
			5.1	Communications?
			5.2	Crew Coordination?
			5.3	Use of check lists?
			5.4	Standard briefings
			5.5	Standard calls?
			5.6	Ramp/gate procedures?
			5.7	Battery/APU engine starts?
			5.8	Taxi?
			5.9	Rejected take-off?
			5.10	Take-off and climb?
			5.11	Cruise?
			5.12	Descent?
			5.13	Approaches IMC, visual, VFR, and circling?
			5.14	Landing?
			5.15	Missed approaches and balked landings procedures?

		5.16	Stall recovery
		5.17	Fuelling with passengers onboard?
		5.18	Use of onboard navigation and alerting aids?
		5.19	Weight and balance control procedures?
		5.20	Check lists?
YES	**NO NA**	**6**	**EMERGENCIES PROCEDURES**
		6.1	Planned and Unplanned
		6.2	Pilot incapacitation?
		6.3	Two challenge rule?
		6.4	Bomb threat and hijacking?
		6.5	Engine fire/failure/shutdown?
		6.6	Propeller over speed?
		6.7	Fire, internal/external?
		6.8	Smoke removal?
		6.9	Rapid decompression?
		6.10	Flapless approach and landing?
		6.11	Any inadvertent encounter with moderated to severe in-flight icing?
YES	**NO NA**	**7**	**DIAGRAMS**
		7.1	Normal take-off?
		7.2	Engine out take-off?
		7.3	Precision approach, all engines operating?
		7.4	Precision approach, engine out?
		7.5	Non-precision approach, all engines operating?
		7.6	Non-precision approach, engine out?
		7.7	Go-around, all engines operating?
		7.8	Go-around, engine out?
		7.9	VFR circuits?
		7.10	Partial flaps/slats approach?
		7.11	Flapless approach?

RECOMMEND ACCEPTANCE: ☐ YES ☐ NO (Reasons cited below)
REMARKS & OBSERVATIONS
_____ INSPECTOR SIGNATURE Additional comments attached ☐ =>

CHAPTER 42: INSPECTOR ACTIVITY FORM

61.1 PURPOSE

This is provided for routine reports associated with the accomplishment of Inspector work activities that do not have a checklist.

61.2 GENERAL GUIDANCE

(a) Recording Activities: A report of each activity accomplished must be made by using the Specific Inspection and evaluation checklists. If, however no checklist is available, this Generic Inspector Activity Form will be used.

(b) Nonconformities: These will be recorded in the Inspector Activity Form and will be handled in accordance with the procedures in Volume 3 of this Handbook.

INSPECTOR ACTIVITY FORM

*Record ID:	Protocol Number	*Activity
*Inspector	*Date Accomplished:	Tracking #
	*Organization	*Individual

Instructions for Use:

1. Complete for each job task that does not have a checklist.
2. Enter any notes in observations/remarks field or on reverse side regarding any issue for transfer to the Safety Issues Resolution Report.
3. (*) entries must be made for each report
4. For later reference, precede any notes with the appropriate question number.

*ACTION TAKEN I=in work C=completed D=disapproved/returned S=satisfactory inspection, no issues found F=follow up required A=approved/accepted V=Validation	
*LOCATION/FROM (4 digit airport identifier)	
*NUMBER OF SAFETY ISSUES	
FLIGHT NUMBER	
DESTINATION (4 digit airport identified	
AIRCRAFT MAKE/MODEL/TYPE	
AIRCRAFT REGISTRATION	
PILOT-IN-COMMAND NUMBER	
OTHER CREW NUMBER	
MAINTENANCE REPRESENTATIVE	
MANAGEMENT REPRESENTATIVE	

REMARKS & OBSERVATIONS

Additional comments attached ☐

INSPECTOR SIGNATURE

Additional comments on back ☐=>

INSPECTION REPORT

The inspection report template has been designed to encourage uniformity in report writing after inspector activities. The form can be used for various types of activities that require a more narrative type of reporting. All the fields are quite straight forward to complete except the unique reference number field. The Unique Reference Number is to be determined as follows:

Instructions for generating a unique reference number

Example: LIBERIA CAAREP**/**2007**/**03**/**F015**/**01

The first six characters are constant and are an abbreviation of Liberia CAA report. This is followed by a right slash.

The complete four digits for the current year followed by a right slash.

The two digits for the current month (must be two digits), followed by a right slash.

The lead Inspector's complete ID card Number without spaces or characters followed by a slash.

The serial number sequence of reports LCAAREP) completed by the particular inspector for the current month only.

INSPECTION REPORT

Unique Reference [Add number] {See instructions above}
Checklist(s) used [Add Title And Checklist No.] Inspection dates [add date(s)]
Reporting inspector [Add Name]

This inspection of [Add Name] was carried out under [add section/part of the act or regulations] of 2006.

Type of Facility	[Add Type]	Facility address	[Add Address]
Type of Aircraft/ Simulator Inspected	[Add Type]		
Registration Number of Aircraft	[Add Reg]	Serial Number of Aircraft	[Add Number]
Operating Certificate	[Add Type]	Certificate No.	[Add Number]
Issuing Authority	[Add Name]		
Issue Date	[Add Date]		
Valid Until	[Add Date]		
Date of previous Facility inspection	[Add Date Or N/A]		
Date of previous Aircraft inspection	[Add Date Or N/A]		
Date of previous Simulator inspection	[Add Date Or N/A]		

Introduction

The inspection was carried out by [Add Name] on [Add Date] at [Add Location Address].

[Brief Description Of The Facility].

Findings

[Summarize Main Findings]

Overall assessment and Recommendation

[Overall Statement Of Assessment]

APPENDIXES

PART 1 APPENDIX 'A': PROPOSED CIVIL AVIATION DIRECTIVE, LINE FLYING CURRENCY PROGRAM, CIVIL AVIATION FLIGHT OPERATIONS INSPECTORS

Policy

Civil Aviation Flight Operations Inspectors (FOIs) may participate in an Line Flying Currency Program (LFCP) with an air operator or private operator in keeping with the specific conditions of this directive.

Upon termination of an LFCP agreement, a FOI will be considered as having qualified for Flying Allowance as applicable.

Objective

The LFCP will provide training to FOIs to ensure they become or remain technically competent and have a complete understanding of operating practices, norms, and company (Air Operator) cultures by direct participation in company (Air Operator) operations on a periodic or continuing basis.

Cost Effectiveness of the Program

Since all FOIs are eligible to participate in the LFCP, and in order to make it cost effective, a supervisor must take into consideration the type of aircraft experience the FOI already has (or is about to have) in relation to his/her duties and responsibilities.

The LFCP must be managed to be cost neutral and every effort is to be made to realize its potential for significantly reducing overall training costs.

Cost Effective Program Management

Sound management of the LFCP is critical to its success. It is important to note that savings are dependant not only on proper management, but also on the kind of contractual agreement between the air operator and Liberia, and may vary from one case to another. In order to ensure that cost effective management is maintained throughout the LFCP, this training directive includes the following direction/guidelines to managers:

1. Manager, Flight Safety Standard may only allow FOIs to train on aircraft that they are currently qualified on, or are about to be qualified on as a result of their duties and responsibilities. Deviations from this requirement may be allowed if it has been demonstrated to be cost effective.

2. Manager, Flight Safety Standard may be required to limit the number of FOIs that are participating in the program in order to ensure that there is no disruption of service to LCAA clients.

3. Managing the number of days the FOIs may be allowed to train is paramount in ensuring the effectiveness of this program. The FOI's Supervisor and the air operator are required to work out an arrangement that is suitable to everybody’s needs. These needs may vary from one case to another depending on the type of operation and the supervisor’s ability to release his/her FOI to conduct training duties. Frequency of training must be limited in order to ensure that the benefits of the program are fully realized.

Program Operating Principles

The principles fundamental to the success of the LFCP are:

1. The program must be of benefit to both LCAA and industry;

2. LCAA regulatory programs must operate free from bias, and hence the LFCP must be managed in a manner that withstands public scrutiny;

3. The LFCP must not increase, and should substantially reduce LCAA overall program costs;

4. Supervisors delegated the responsibility to approve a FOI to conduct LFCP training shall be accountable to ensure adherence to the directive in a manner that is consistent with LCAA objectives and in a manner so as not to subject the department to public criticism;

5. Participant operators in this program shall be advised of all conditions under which they must operate, and enter into a written agreement setting out their commitment to those conditions; and

6. Participating FOIs must be fully briefed and acknowledge in writing their duties and responsibilities under this directive.

Conflict of Interest

The potential for a real or perceived conflict of interest is a valid and serious concern with respect to the implementation of this directive.

As in the Air Carrier Designated Check Pilot Program, the risk of real or perceived conflict of interest is addressed by making all aspects of the program and its controls public and open to scrutiny.

The following controls apply:

1. Before being allowed to participate on the LFCP, the FOI will be provided with written guidance and direction on how to avoid and/or deal with perceived conflict of interest issues associated with training.

2. Any FOI suspected to be in a conflict of interest with the operator shall be immediately removed from all training activities pending a review.

3. FOIs are to conduct themselves as company line pilots while at the host operator, and will not act as a training or Air Carrier Designated Check Pilot. FOIs shall adhere to all requirements of the LCAA approved Company Operations Manual and other related documents.

4. Irregularities shall be acted upon and reported to the operator's supervisory personnel through normal company channels in the manner that would be expected of a conscientious company employee.

5. A FOI shall invoke his/her full authority in situations that involve an immediate threat to aviation safety including detaining the aircraft and/or issuing a Notice of Suspension as deemed appropriate. These situations shall be reported immediately to LCAA and the air operator.

6. Any situation that involves an accident/incident and/or has a potential for media attention shall be reported to FOI's supervisor immediately.

7. A FOI shall not participate in any certification, inspection or audit of the host air operator while actively in the program with the host operator.

LFCP Agreement Conditions

Priority and Responsibilities

A participating FOI's primary duty is to LCAA. Training duties shall not interfere with LCAA taskings.

Qualification for Duty

The participating FOI shall meet all air operator hiring requirements, undergo all relevant air operator and aircraft training and in all respects qualify for and exercise their flight deck duties as a normal air operator pilot.

Remuneration and Compensation

A FOI will receive no remuneration from the hosting operator. A FOI is entitled to normal company-provided items such as uniforms and company standard crew rest facilities.

LCAA will remain the Employer for the purposes of remuneration and benefits.

LCAA will fund initial and recurrent aircraft training up to the point of completion of the Pilot Proficiency Check and Type Rating, if required.

Program Assessment

The FOIs Supervisor retains the mandate to ensure his or her staff are fully qualified to perform their intended roles. In support of this mandate, the supervisor may elect to review the FOIs participation in an LFCP and make recommendations or re-assignments as required.

A FOIs performance in connection with training, as in any other regulatory program, is subject to review under the performance review process. The LCAA supervisor may request information in support of program and FOIs performance review from the host operator as required.

Suspension or Termination of the Agreement

An LFCP training agreement may be terminated at any time by LCAA or the hosting operator. Termination will normally occur with sufficient notice to minimize disruption at the hosting operator.

An LFCP training agreement may be temporarily suspended at either party's request in such cases as an audit or pending regulatory action, a complaint regarding the program or other unusual circumstance. A request for suspension should include the reason for suspension and its anticipated duration.

Liability

Although liability to third parties cannot be limited by an agreement between the LCAA and the operator, an agreement between LCAA and the host air operator as to who shall pay the damages assessed in respect of the negligence of the FOI is required. The agreement shall include a waiver and indemnity provision whereby the operator agrees, first not to sue the LCAA for any damages caused by the FOI and, secondly to pay any damages to third parties assessed against the LCAA as a result of an FOIs actions while in the LFCP. The operator would also be required to maintain insurance to cover possible damages.

The fact that the inspector is or is not the pilot-in-command would have no bearing on the LCAA's liability.

Procedure to Establish an LFCP

An operator initiates the process with a letter of invitation naming the assigned FOI. This letter should be directed to the Director General, Liberia Civil Aviation Authority.

1. The DG LCAA and host operator agree on specifics such as company-reimbursed items, training requirements and liability issues;

2. An LFCP Agreement which sets out all associated conditions is signed by the CFS/DFSR, hosting operator and participating FOI.

3. Upon termination of an LFCP, the FOI qualifies automatically for Flying Allowance as appropriate (if applicable).

Review

This directive on training will be reviewed two years after implementation to ensure the objectives of the program are being met, it remains cost-effective and conflict-of-interest is not an issue.

PART 1 APPENDIX 'B': FOI ON-JOB-TRAINING GUIDE

The following guide has been developed to assist Supervisors with the training of Air Carrier Flight Operations Inspectors. It is only a guide and should not be considered limiting. Some of the subject areas are dealt with into in greater detail in other manuals and these manuals should be used to assist with training (ie. FOI Manual, DCP Manual).

Air Carrier Flight Operations Inspector (FOI) activities often interact with Airworthiness, Cabin Safety (CS), Dangerous Goods (DGs). These specialty activities are briefly mentioned within this checklist.

The following Branches will normally deal with issues listed:

Cabin Safety:*

Safety Features Cards
Cabin Attendant Manuals
Cabin Attendant Training Programs

Dangerous Goods:*

Company Operations Manual DGs Chapter Review
Company DGs Permit(s) for Equivalent Level of Safety
DGs Specialty Audits and Inspections
DGs Cargo Facility Inspections
DGs Random Ramp Inspections
DGs Passenger Terminal Inspections
DGs Surveillance Operations
DGs Packaging Inspections
DGs Investigations and Compliance Actions
Company DGs Records and Document Retention programs
ICAO Doc 9284 Technical Instructions for Safe Transport of DG, by Air

Airworthiness:

MELs
Defect Procedures (Operations Manuals)
Type Approvals
Maintenance Programs

This checklist has been written with the intent of capturing most activities encountered by Air Carrier Flight Operations Inspectors. It is not meant to reflect specific tasks, such as certain office routines or methods on how particular situations are dealt with.

Note: * If these Inspectors are not available/catered for in the organization, the qualified FOIs shall be entrusted with these activities as deemed appropriate by the Manager, Flight Safety Standards Department.

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On-Job-Training Activities Checklist

Section 1 - Office Administration Activities

1. Meet the staff and receive a brief outline of their responsibilities.

2. Review the following documents.

2.1 Job Description
2.2 Delegation of Authority
2.3 Access to Information

3. Explain Office Procedures and Policy.

3.1 Approval of Leave
3.2 Working Hours
3.3 Employee In/Out Board
3.4 Vehicle Sign Out
3.4.1 Procedures for accident reporting
3.5 Personal vehicle use
3.6 Inspector Scheduling System

3.6.1 Booking of rides
3.6.2. Use of receipt book

4. Explain Administrative Procedures

4.1 Forms, training, flight pay
4.2 Travel Claims and Advances
4.3 Cheque Pick-up
4.4 File Register - Correspondence
4.5 Work at home

5. Review Documents:

Civil Aviation Rules/Regulations
Flight Operations Inspector Manual
Manual of Regulatory Audits
Designated Check Pilot Manual
MMEL /MEL Policy and Procedures Manual
Policy Letters
Air Safety Circulars
Air Navigation Orders
Enforcement/Compliance Manual
ICAO Annes 1 to 18
ICAO Docs 8335, 9376, 9481 and other related documents
ICAO Doc 7300 Convention on International Civil Aviation

6. Training

6.1 Review Training Policy Letters.

6.2 Training Calendar of Courses

6.2.1 Basic Flight Operations Inspector Course
6.2.2 Advance Flight Operations Inspector Course (To include - ETOPS, CAT II & III, RVSM/MNPS, MMEL)

6.2.3 Audit Policy and Procedures Course
6.2.4 Designated Check Pilot Course
6.2.5 Aircraft Performance Course
6.2.6 Aircraft Type Training (as required)
6.2.7 Crew Resource Management Course
6.2.8 Simulator Evaluation and Approval Course (Depending on Assigned Duties)
6.2.9 Dangerous Goods Course (Depending on Assigned Duties)
6.2.10 Aviation Safety Promotion Course (Depending on Assigned Duties)
6.2.11 Accident Investigation Course (Depending on Assigned Duties)
6.2.12 Personnel Licensing Course (Depending on Assigned Duties)
6.2.13 Aerodrome Certification Course (Depending on Assigned Duties)

6.3 Personal Development

6.3.1 Development Course
6.3.2 Computer and Work Processing Courses

Section 2 - Operational Activities (Admin.)

1. Process Applications for Operating Certificates

1.1 Check and confirm application is complete
Inspector must know:

a) what comprises a complete application package
b) refer to Certification Manual and Air Carrier Flight Operations Inspector Manual and ICAO Doc 8335
c) details required to complete application
d) what form application should take

1.2 Circulate forms to appropriate branches
Inspector must know:

a) which sections share certification responsibilities
b) what forms to circulate

1.3 Verify management personnel qualifications
Inspector must know:

a) what qualifications are required from CARs
b) whether the qualifications submitted are consistent with company operations

1.4 Review manuals ensure they are compatible with requirements
Inspector must understand:

a) the requirements of the CARs
b) that Operations Manual must accurately reflect carrier's operation
c) the Cabin Safety Manual must cover all Safety Emergency Procedures
d) Flight Dispatch Manual
e) the Aircraft Manuals including Training Manual
f) Dangerous Goods Manual

1.5 Recommend required approvals
Inspector must know:

a) how to make an overall assessment of company submission to ensure compliance with terms of license and applicable CARs

b) how to complete all relevant forms
c) the Certification Manual
d) what approvals are required for Dangerous Goods (DGs)
e) approve training program

Program should include:

(i) A/C Type (To Include Initial, Recurrent, upgrade and Line Indoctrination)
(ii) EPT Training
(iii) MEL
(iv) Company Orientation
(v) DGs
(vi) Dispatch Training

f) Confirm Cabin Safety (CS) material has been approved

i) approval of evacuation procedures (CS)
ii) approve carriage of passengers (CS)
iii) accept instructor qualifications (CS)

1.6 Arrange for Base Inspection
Inspector must know:

a) how to plan and conduct an initial inspection as per Manual of Regulatory Audits;
b) who to contact to make arrangements

1.7 Arrange PPC's (if required)
Inspector must know:

a) how to coordinate, conduct and process initial PPC's during certification process
b) how to conduct an initial PPC

1.8 Ensure file is complete and all recommendations received

a) attach pax safety recommendation
b) passenger safety requirements for certification (CS)
c) dangerous goods authorities signed off.

2. Process amendments to Operations Manual and Operations Specifications

2.1 Confirm change is consistent with operation
Inspector must know the:

a) scope of the operation
b) operator's authority

2.2 Advise carrier of necessary changes (if required)
Inspector must know:

a) the standards relative to change requested
b) effective writing techniques

2.3 Verify accuracy of final draft

2.4 Recommend acceptance/approval

a) differentiate between approvals and acceptances
b) recommendation procedure

3. Minimum Equipment List Approvals

3.1 Compare proposed MEL to MMEL

a) research standards, legislation, requirements and procedures
b) aircraft systems
c) purpose of proposed MEL
d) location of master MEL

3.2 Ensure proposed MEL does not conflict with any legislation

a) review pertinent legislation

3.3 Ensure proposed MEL is appropriate to operation
a) review particular type of operation

3.4 Recommend changes to MEL/MMEL
Inspector must be familiar with:

a) minimum equipment required to proposed type of operation
b) the approving authority for MEL's

3.5 Issue approval

a) the approval procedure

4. Regulatory Compliance Investigations

4.1 Conduct preliminary investigation

a) how to collect information
b) how to complete Preliminary Investigation Report

Section 3 - Flying Activities

1. In-Flight Inspections

1.1 Planning an in-flight inspection

a) Determine the objectives of the inspection

1. types of inspections
2. routine
3. special
4. what is scope of inspection
5. where authority is found
6. what type of a/c is to be used.

b) Review all company files and pertinent documentation

1. operating certificates
2. operations specifications

3. what is scope of inspection
4. where authority is found
5. what type of a/c is to be used

c) Review Company Operating Procedures

1. what operating procedures to review
2. company Operations Manual
3. cabin Safety Manual

d) Review Route

1. where to find route information
2. operations manual
3. published schedule
4. approved route inventory

e) Develop itinerary

1. where to record itinerary information
2. form

f) Coordinate scheduling

1. who to call to coordinate schedule
2. company contacts
3. regional contacts

g) Make travel and accommodation arrangements

1. domestic
2. international
3. how to book using local travel procedures
4. advance
5. authorization
6. what is needed for travelling
7. passport
8. currencies
9. inoculations
10. visas

2. Evaluate Pre-Flight Activities

2.1 Check airport and air carrier security

a) purpose of security
b) what to check
c) limits of current local system
d) what to do about breaches of security
e) appropriate credentials

2.2 Determine crew qualifications

a) what crew qualifications are required Personnel Licensing Regulations and Standards

2.3 Monitor weather briefing

a) whether briefing is adequate
b) what should be in complete weather briefing

2.4 Evaluate dispatch system

a) what is in Company Operations Manual concerning dispatch system
b) duties of a dispatcher as per standards

2.5 Evaluate flight planning

a) company authorized forms
b) specific a/c performance
c) company SOPs
d) canned weight and balance forms

2.6 Inspect load control

a) a/c basic weight and balance data
b) system that is used by company to establish weight and balance
c) classification of cargo
d) cargo manifest
e) weight and balance Report
f) cargo security system
g) pertinent regulations
ICAO DGs Instructions

2.7 Evaluate passenger handling facilities

a) special passenger handling requirements:

1. stretchers
2. prisoners
3. disabled pax
4. deportees
5. animals
6. passenger transfer vehicles
7. vehicles
8. standard pax handling facilities
9. pax assembly
10. pax loading equipment
11. baggage handling
12. check-in counter

2.8 Inspect aircraft servicing and ramp safety

a) refuelling procedures
b) with pax
c) without pax
d) crowd control
e) fire regulations
f) loading pax while engines/rotors are running
g) a/c evacuation procedures
h) vehicle control
i) airport lighting

2.9 Monitor cabin safety briefing

a) what should be in a complete cabin attendant briefing
b) emergency position
c) emergency equipment
d) special pax
e) first aid
f) minimum crew

2.10 Inspect cabin

a) what emergency equipment should be carried
b) its location
c) how to operate it
d) demonstration equipment
e) a/c galley systems
f) intercommunication system
g) unauthorized objects

2.11 Inspect aircraft/crew documentation

a) a/c journey log
b) crew certificates
c) Certificate of Airworthiness
d) Certificate of Registration
e) radio license
f) weight and balance report
g) flight manual
h) company operations manual
i) pilots licenses, medical certificate, PPC cards, radio operators certificate

2.12 Monitor pre-flight check

a) a/c check list
b) assigned company duties

3. Evaluate the Flight

3.1 Check company manuals and aircraft equipment required for the flight

a) what manuals and equipment are required for the flight
b) company operating procedures (Passenger Safety)
c) ensure required equipment is operated or properly deferred

3.2 Monitor crew coordination and procedures

a) check cabin crew boarding positions
b) how to use the checks lists, company SOPs
c) how to evaluate coordination between cockpit and cabin crews
d) role of cabin crew
e) Liberia minimum cabin crew requirement
f) monitor cabin service on the ground

3.3 Monitor carrier's operating procedures and flight watch

a) what pre-flight paper work and computations are needed to initiate the flight

b) aircraft performance and handling characteristics
c) company radio procedures (domestic and international)
d) company flight watch system
e) regulations governing airspace usage and international flight requirements, customs and immigration procedures

3.4 Check carry on baggage stowage

a) observe pre-take-off passenger briefing
b) observe Cabin Crew seating position for T/O
c) monitor in-flight service procedures
d) monitor pre-landing announcements and cabin checks

3.5 Monitor Cabin Crew seating position for landing

3.6 Check after landing procedures

a) observe taxi procedures
b) observe deplaning procedures
c) observe ramp safety

4. Evaluate Misc Items Within The Flight Environment

4.1 Evaluate Airport and enroute facilities

a) enroute ATS procedures (dom. & int.)
b) enroute weather facilities

4.2 Assess Air Traffic Services

a) approach aids
b) airport lighting and marking
c) condition of taxiways, runways and ramp areas
d) ramp control
e) standards for ATC clearances, flow control procedures (techniques)
f) standard terminal arrival (STARS)
g) standard instrument departures (SIDS)

5. Evaluate Post-Flight Activities

5.1 Unloading of aircraft

a) how to clear customs and immigration
b) how to complete a journey log
c) how to complete a crew duty flight sheet
d) how to complete all associated paper work generated by flight and methods of filing
e) how to arrange for off-loading of passengers and/or cargo
f) snag reporting
g) refuelling
h) securing aircraft

5.2 Observe special passenger handling

5.3 Verify cabin log book unserviceable items

6. Follow-Up Action

6.1 Complete In-Flight Inspection Form

a) which form to use
b) form numbering and forwarding instructions
c) ICAO technical instructions for transportation of Dangerous Goods

6.2 Debrief Crew and Supervisors (as required)

a) discuss safety related discrepancies with the Captain (in the presence of the incharge cabin crew)
b) the discrepancies - when and how to brief the crew
c) how to deal effectively with people
d) system/versus personal fault

6.3 Prepare formal report if required

a) how to write effective reports and letters
b) who to contact in event of an incident

6.4 Submit expense claim

a) expense allowances
b) expense form
c) expense claim procedure
d) local administrative procedures

7. Conduct Check Rides

7.1 Check candidates licences and training file

a) licensing and qualification requirements
b) records required

7.2 Brief the candidate or company training pilot

a) flight check requirements
b) briefing techniques

7.3 Fees

a) methods of payment
b) schedule of fees

8. Conduct the In-Flight Check

a) flight check procedures
b) safe training practices
c) aircraft performance and limitations
d) local ATS procedures
e) pass/fail parameters
f) aircraft handling techniques
g) testing techniques

8.1 Complete appropriate “flight check” form

a) content of the flight check form - rotary and fixed wing

b) form completion procedure

8.2 Debrief candidate

a) pilot grading and evaluation
b) candidate's strengths and weaknesses
c) flight check parameters
d) debriefing techniques

8.3 Take licensing action as necessary

8.4 Process documentation

a) which forms and file processing procedure

9. Monitor Designated Check Pilots

9.1 Verify Designated Check Pilot's qualifications

a) how to locate information in Designated Check Pilot Manual
b) qualifications of candidate
c) the DCP authority requested

9.2 Brief Designated Check Pilot

a) the check pilot duties
b) pertinent CARs and standards
c) how to complete a PPC and line check form
d) instructional and assessment techniques
e) manual of all weather operations
f) personnel licensing regulations and standards
g) Designated check pilot manual
h) techniques for pre-flight and post-flight briefings
i) techniques for organizing and conducting a flight check

9.3 Evaluate Designated Check Pilot's flight test

a) limits and performance standards required by pertinent publications

9.4 Complete "Pilot Monitor Form"

a) how to complete "Pilot Monitor Form"

9.5 Debrief Designated Check Pilot

a) how to assess candidates strengths and weaknesses debriefing techniques

9.6 Process documents

a) branch procedure for processing retaining form

9.7 Update file

Section 4 - Field Activities

1. Aircraft Inspections

1.1 Inspect aircraft documents

a) documents that are required
b) C of A requirements
c) registration and leasing requirements
d) weight and balance report, amendments and validity
e) aircraft flight manual
f) supplements and amendments
g) journey log requirements

1.2 Inspect instrumentation and associated navigation equipment

a) instruments and navigation equipment required for particular type of operation
b) instrument markings
c) compass card validity
d) auto-pilot/Stabilization Augmentation Systems
e) De-ice/Anti-ice Systems

1.3 Inspect emergency equipment and emergency exits

a) safety equipment
b) proper exit marking and lighting
c) exit accessibility
d) ELT requirements
e) what emergency equipment required when transporting DGs
f) fire extinguishers

1.4 Check safety information is available and adequate

a) requirements
b) acceptable format
c) where located
d) Passenger, Safety Information Card

1.5 Inspect cargo restraint system and other auxiliary equipment

a) operate load release systems
b) restraining loads
c) various methods of restraint
d) external load release
e) external load methods
f) segregation (DGs)

2. Ramp Checks

2.1 Use of scales
2.2 Delaying of flights

PART 2 APPENDIX A: INFORMATION FOR PROSPECTIVE AOC APPLICANTS

(a) BACKGROUND. Annex 6 Part 1 to the Convention on International Civil Aviation requires member States to Issue an Air Operator Certificate (AOC) or equivalent document to commercial air transport operators which shall be dependent upon the operator demonstrating an adequate organization, method of control and supervision of flight operations, training program, and maintenance arrangements consistent with the nature and extent of the operation specified.

In order to carry out its responsibilities in accordance with Annex 6, the Liberia CAA has developed a formal process for the certification of Air Operators. That process is described in the following paragraphs.

(b) THE CERTIFICATION PROCESS. The certification process which results in the initial Issuance of an Air Operator's Certificate (AOC) is divided into the following steps:

(1) Pre-application
(2) Formal application
(3) Preliminary financial, economic, and legal assessment of the application
(4) Preliminary technical assessment of the application including document review
(5) Operational inspections
(6) Decision on application and award of AOC and ops specs.

(i) Pre-Application. This phase includes all of the preliminary contact between the prospective operator and the Liberia CAA prior to the submission of a formal application. During this time and in response to the operator's initial queries, the Liberia CAA will make the potential operator fully aware of the regulatory requirements which must be met in order to obtain an AOC and of the exact steps in the certification process which must be accomplished before the AOC may be issued. It is essential that the applicant has a clear understanding of the form, content, and documents required for the formal application.

(ii) Formal Application. If, after preliminary discussions with the Liberia CAA, the operator intends to proceed with the certification process, he must submit a formal application to the CAA'S DG. This formal application will be in a letter form and must contain the following detailed information:

A. The name and address of the applicant and the main base of the proposed Operations;

B. description of the applicant's business organization, corporate structure, and names and addresses of those entities and individuals having a major financial interest;

C. information on management organization and key staff members, including their title, name, background, qualifications and experience;

D. detailed information on flight operations under the following headings:

- type of aircraft, communication and navigation equipment, instruments, equipment and flight documents to be used;
- arrangements for maintenance and inspection of aircraft and associated equipment;
- State of Registry of the aircraft - if foreign registered a copy of the lease agreement should be provided;
- data concerning each flight crew member including types of certificates or license number, ratings, medical certificate and evidence of currency in assigned aircraft;
- arrangements for crew and ground personnel training and qualification;
- installations and equipment available;
- proposed routes, including geographical tracks, minimum flight altitudes, destination and alternate aerodromes to be used including data on instrument approach procedures, proposed aerodrome operating minima, navigation and communications facilities;
- details of operational control and supervision methods to be used; and
- nature of operations - passenger/cargo/mail, day, night, VFR or IFR, etc.;

E. detailed description of how the applicant intends to show compliance with each provision of the applicable code of air navigation regulations;

F. specified financial data; and

G. desired date for operation to commence.

(iii) Preliminary Financial, Economic, and Legal Assessment of the Application. After receipt of the formal application, it will be necessary for the HHHH to make a preliminary investigation to determine that the applicant has:

A. sufficient financial resources;

B. a route structure for the proposed operation;

C. an intended level of service that meets a need or demand and is in the public interest;

D. proposed a type and level of operation that is in accord with bilateral or multi-lateral air transport agreements relating to traffic rights, frequencies, capacity, routes, etc., to which the State is a party;

E. presented traffic studies or other data indicating that the proposed operation should be economically successful; and

F. management structure and suitable personnel, equipment, facilities, manuals, buildings, service agreements, etc., or will be able to obtain them.

G. The above process normally requires two to four weeks. If the CAA'S DG is satisfied as to the viability and legality of the operation, the certification process may proceed to the next step.

(iv) Preliminary Technical Assessment of the Application. Before this phase can commence, the applicant must submit to the IIII of the Liberia CAA the following documents or their equivalents:

A. A revised or updated Basic Operations Manual (BOM) 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) or Airplane Flight Manual (AFM), 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 Maintenance Manual which describes the maintenance organization and procedures which will be employed by the operator.

D. A Minimum Equipment List (MEL) which reflects the Master Minimum Equipment List approved by the state of manufacture, and is tailored to the specific airplane model and operating environment of the airline.

E. Configuration Deviation List or equivalent document which contains information regarding flight with missing aircraft components

F. All normal, abnormal, and emergency checklists, including abbreviated checklists for use in the cockpit.

G. Passenger briefing cards in English and Language for passenger briefing card.

H. A Flight Attendant Manual or other suitable reference for flight attendants concerning the configuration of the new aircraft type, location and operation of installed cabin equipment, and duties and responsibilities during normal and abnormal operations.

I. A Weight and Balance Manual containing information and procedures on aircraft loading and weight distribution

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

K. A Route Manual containing takeoff, enroute, terminal, and approach charts and information for the routes and airports which the applicant intends to use.

L. A Training Manual containing detailed training programs for cockpit and cabin crewmembers and flight dispatchers/flight operations officers.

M. A Dangerous Goods Manual which contains information on the identification, packaging, and handling of hazardous materials.

N. Detailed information on the structure and content of the above manuals or their equivalents may be obtained from the IIII.

O. The LCAA will require approximately 30 days to evaluate the adequacy of the above documents and provide specific approval for training programs, checklists, and minimum equipment lists.

(v) Operational Inspections and Demonstrations. Prior to the commencement of this phase, all crewmembers, dispatchers (operations officers), and other appropriate ground support personnel must have completed their required training as outlined in the training program which will have been submitted and approved in accordance with paragraph IV above.

A. This phase will consist of the following demonstrations and inspections:

- Emergency evacuation and ditching drills will be conducted by the applicant in order to demonstrate the ability of the cabin crew to safely evacuate passengers and utilize aircraft emergency equipment.
- A least 10 hours of proving flights will be conducted by the applicant in order to demonstrate his ability to safely operate the airplane on a day to day basis. The airline will required to submit a proving flight plan which contains the number of flights, dates, crew composition, and destinations.
- The LCAA will inspect each transit or line station to ensure that ground personnel are adequately trained to support the 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.
- The Dispatch/Operational Control center will be inspected to ensure adequacy of flight planning, briefing, dissemination of weather data and NOTAMS, and record-keeping.
- The applicant's Maintenance Organization will be inspected for adequacy of facilities, equipment, procedures, staffing, and training.
- The applicants organization and procedures for keeping required records (crew flight and duty time, trip records, training and qualification, etc.) will be inspected to ensure its adequacy

B. An additional eight weeks will be required to perform the above inspections.

(vi) Decision on application - Issuance of AOC and Operations Specifications. After all of the requirements of the above paragraphs are satisfactorily met, the LCAA will issue and Air Operator Certificate to the applicant. Additionally, Operations Specifications will be issued which contain specific operating authorizations and limitations such as approved aircraft and capacities, route and terminal authorizations, weather minimums, description of the approved maintenance organization, and other provisions unique to the operator. Thereafter, the operator will be required to adhere to all provisions of its AOC and Operations Specifications in addition to applicable Civil Aviation Regulations and ICAO annexes.

After the AOC is granted, the operator will be subject to continuing inspection by the LCAA in order to ensure that he continues to operate to the same standards upon which the issuance of the AOC was based.

PART 4 APPENDIX A: EXPLANATION OF GRADING CODES USED ON REPORT FORMS

(a) GRADING CODES USED ON CHECKLISTS AND REPORTS ("U","P","I","E").

The inspector grading codes which appear on the checklist/report forms in Volume 3 of this manual designed to provide inspectors with flexibility to express their opinions about evaluations or observations. It is often difficult to classify an observation or evaluation as simply "satisfactory" or "unsatisfactory." Grading codes provide inspectors with the latitude to express an opinion that an evaluation or observation indicates a potential problem, that a recorded comment is simply informational in nature, or that an operator exceeds required standards. A detailed explanation regarding the intended meanings of these codes follows:

1. ***Unsatisfactory***. "U" (unsatisfactory)

means that, in the inspector's opinion, a person, item, or subject area was not in compliance with either regulations or safe operating practices, or was either inadequate or unacceptable. Items graded "U" should be commented upon in detail in the 'comments' section of the report. If an inspector is able to correct a situation or deficiency which was unacceptable during the work activity, he may still record an "unacceptable" opinion code. In this case, however, the inspector's comment should include that corrective action was taken. The "unacceptable" opinion code provides information for future analysis and trend identification.

2. ***Potential***. "P" (potential)

means that, in the inspector's opinion, there was potential for a person, item, or subject area to be in noncompliance with either the regulations or safe operating practices, or to be at least partially inadequate. The "potential" opinion code indicates the possibility that a problem exists or may exist. This code is useful for the identification of trends that could lead to more serious problems. The code also provides inspectors with a way to classify comments traditionally known as "grey areas." This code may be used for situations or procedures which are technically in compliance with regulations or approved procedures, but which from a practical viewpoint are poorly planned and/or executed, and therefore could have caused noncompliance with a regulation or safe operating practice. In these situations the "potential" opinion code along with an appropriate narrative comment can be used to indicate that noncompliance could have occurred, had the inspector not intervened. For example, an inspector had to remind a crewmember to fasten the shoulder harness before takeoff. Without this reminder the potential for noncompliance with a regulation existed. Crewmembers and other company personnel, in the presence of an operations inspector, sometimes react or perform differently than they would during routine operations when an inspector is not present. This different reaction or performance becomes quite apparent to inspectors for various reasons. In such a case, the "potential" opinion code can be used to indicate that (in the opinion of the inspector) crewmembers or other personnel may be using different standards when an inspector is not present. Another example of the definition of "potential" opinion code can be found in the distinction between "potential" opinion code and "unacceptable" opinion code. The "unacceptable" opinion code would be used when the inspector wants to convey the belief that an actual problem exists. The "potential" opinion code, however, would be used to classify a comment when an inspector wants to convey the belief that a potential problem exists or that a situation could develop into a problem if remedial action is not taken.

3. ***Information***. "I" (information)

means that the inspector does not have an explicit opinion about the information being conveyed in the accompanying comment. There are many reasons why an inspector may not be able to form an opinion about the information being conveyed in a recorded

comment. An inspector may not have access to the necessary manuals or documents to determine whether a person, item, or subject area observed was in compliance with a regulation, a published procedure, or a safe operating practice. The "information" code provides a way to convey different kinds of information and comments to persons who review the comments so that they may form their own opinions about the information and take action if appropriate. A typical example of the use of the "I" code is for an inspector to record the last revision date of a manual. The inspector may not be aware of what the last revision date should be but when the information is reviewed by a knowledgeable official, the official can determine the status of the operator's manual revision and dissemination system. Another example of the use of the "I" code would be for the inspector to record the type of instrument approach conducted and the minimums used by the PIC. In this example, the supervising inspector, upon receiving the information can determine whether or not the crew was properly trained for the type of approach and if the PIC used the proper minimums. The primary purpose of this code is to effectively convey information to be evaluated for identifying deficiencies as well as both positive and negative trends.

4. ***Exceeds. "E" (exceeds)***

means that, in the inspector's opinion, a person, item, or subject area which was observed or evaluated, exceeded recognized standards and clearly complied with regulations and/or safe operating practices. One of the primary uses of this grade is to identify trends. Information about a positive trend is useful in determining the overall capability and compliance status of an operator. The "E" opinion code is especially useful and should be used to identify positive responses to a previously-taken corrective action. Inspectors should comment on the positive results of an observation or evaluation as this type of information is valuable feedback on a person's or an operator's performance. An example of the use of the "E" opinion code is the recording of positive comments about the proficiency of crewmembers who have just completed a training curriculum. Such information indicates that the training provided by the operator is highly effective.

(b) INSPECTOR'S NARRATIVE COMMENT

An inspector's narrative comment of observations and evaluations is the most important part of the overall work activity report. The narrative comments are the only means of accurately recording what the inspector has actually observed. The recording of these comments is the final phase of a work activity. For inspection activities, it is a critical phase in the overall scheme of data collection and processing. An inspection report must include factual and meaningful comments or it has little value other than to be a record that an inspection was accomplished. Particular attention should be given to the identification of who or what was observed or evaluated, what specific function was being accomplished, when and where it occurred, and how and why it happened, as appropriate. Recorded comments should be as brief and concise as possible. Inspectors should use abbreviations and contractions when it is known that the contractions will be understood by aviation-oriented personnel. Essential information (such as dates, names of personnel, aircraft make/model/series, registrations numbers, part numbers, and flight numbers) that is recorded in first block of the checklist/report form should not be repeated in the comments. Inspectors should not, however, exclude essential information to make a comment brief, since there is no limit to the number of words that can be used to record a comment. Comments should fully describe and support the inspector's observations, evaluations, and opinions.

MULTI-PILOT/CREW PROFICIENCY CHECK

Record ID:	Inspector	Type of Operation	Activity Number – Checklist
Date Accomplished:	# Issues	Operator	Tracking #
Flight #:	To:	From	AC Registration:	AC or Simulator	Type:
PIC #:	Other Crew #	Check Pilot #:	

Instructions for Use:

1. An "S" entered in the S column indicates that the maneuver or procedure is not to be checked in an aircraft.
2. Prior to proficiency check, enter a "X" in the NA column for any line item maneuver not applicable to this particular check or not permitted, if an actual aircraft check.
3. An 'M" in the W column indicates that the performance of this event must not be waived
4. Prior to proficiency check, enter a "W" in the W column for any line item maneuver or procedure that will not be performed during the proficiency check scenario.
5. If the waiver decision is made during the course of the check, the "W" will be entered at that time.
6. Check YES column if the observed performance met the testing standards.
7. Check NO column if the observed performance did not meet testing standards.
8. Enter any notes regarding a NO answer as a MEMO.
9. For later reference, precede any notes with the appropriate question number.

A/C	SIM	FLIGHT PREPARATION	Y	N	N	W
		Performance calculation?				
		Airplane exterior visual inspection?				
		Use of checklists prior to starting engines?				
		Taxiing				
		Preflight checks and checklists				
		TAKEOFFS				
		Normal takeoffs, including expedited takeoff?				
		Instrument takeoff (transition during rotation or immediately after becoming airborne				
		Crosswind Takeoff (a/c if practical)				
		Takeoff at maximum takeoff mass (actual or simulated)				
		Takeoff with simulated engine failure (at 500 AGL)				
		Takeoff with simulated engine failure shortly after reaching V2				
		Takeoff with simulated engine failure between V1 and V2				
		Takeoff with simulated engine failure as close as possible after V2				
		Rejected takeoff at a REASONABLE speed before reaching V1				
		FLIGHT MANUEVERS				
		Turns with and without spoilers				
		Tuck under and Mach buffets after reaching critical Mach number				
		Normal operations of systems and controls engineer's panel **NORMAL AND ABNORMAL SYSTEMS OPERATIONS** (MINIMUM MANDATORY = 3 PROCEDURES SELECTED FROM LIST)				
		Engine (if necessary propeller)				
		Pressurization and air conditioning				
		Pitot/static system				
		Fuel system				
		Electrical system				
		Hydraulic system				

		Flight control and trim system				
		Anti- and de-icing system, glare shield heating				
		Autopilot and flight director				
		Stall warning, stall avoidance and stability augmentation devices				
		Ground proximity warning system, weather radar, radio altimeter, transponder				
		Radios, navigation equipment, instruments, flight management system				
		Landing gear and brake-system				
		Slat and flap system				
		Auxiliary power unit				
		ABNORMAL AND EMERGENCY PROCEDURES (MINIMUM MANDATORY = 3 PROCEDURES SELECTED FROM LIST)				
		Fire Drills (e.g. Engine, APU, cabin, cargo compartment, flight deck, win and electrical fires including evacuation) Smoke control and removal				
		Smoke control and removal				
		Engine failures, shutdown and restart (at safe altitude)				
		Fuel dumping (simulated)				
		Wind shear at takeoff or landing				
		Simulated cabin pressure failure and emergency descent				
		Incapacitation of flight crew member				
		Special emergency procedure required by AFM				
		Steep Turns (45 degree bank-180 to 360 degrees left and right)				
		Takeoff configuration stall (early recognition and counter measures)				
		Cruising flight configuration stall (recognition and counter measures)				
		Landing configuration stall (recognition and counter measures)				
		Recovery from full stall or activation of stall warning				
		INSTRUMENT FLIGHT PROCEDURES				
		Adherence to departure and arrival routes and ATC instructions				
		Holding Procedures				
		ILS approach (200 DH) manually without flight director				
		ILS approach (200 DH) manually with flight director				
		ILS approach (200 DH) automatically with autopilot				
		ILS approach (200 DH) manually with one engine inop (JAR/FAR 25 a/c)				
		NDB or VOC/LOC to MDA				
		Circling Approach to another runway at least 90degrees off centerline from final approach at circling approach altitude (or low visibility pattern)				
		MISSED APPROACH PROCEDURES				
		Go-around with all engines operating after ILS approach from DH?				
		Other missed approach procedures?				
		Go-around with one engine simulated inoperative at ILS-DH				
		Rejected landing at 15m (50 feet) above runway threshold and go-around				
		LANDINGS				
		Normal landings				
		Normal landings after ILS approach with transition to visual flight on reaching DH				

		Landing with simulated jammed horizontal stabilizer in any out of trim system Crosswind landing (a/c, if practical)				
		Traffic pattern and landing without extended or with partly extended flaps and slats				
		Landing with critical engine simulated inoperative				
		Landing with two engines inoperative (3 and 4 engine a/c)				
		SPECIAL REQUIREMENTS FOR CATEGORY II/III APPROACHES (Cat II/III operations shall be accomplished in accordance with Operational Rules)				
		Aborted takeoff at minimum authorized RVR				
		ILS to applicable DH using flight guidance system				
		Go-around on reaching DH				
		Landing with visual reference established at DH (auto landing if authorized)				

REMARKS & OBSERVATIONS

INSPECTOR SIGNATURE

_____

Additional comments ☐=>

CHECK PILOT/ENGINEER
(Authorization or Inspection)

Conduct a Check Pilot Observation

Give the check pilot/check flight engineer notice of your intention to conduct an inspection.

Brief the check pilot/check flight engineer not to advise the pilot/crew of the result of the check until after discussion with you.

Arrive at the facility in time to observe the pre-exercise briefing.

Carry out the inspection on a non-interference basis, using the appropriate checklist(s).

Observe the check pilot/check flight engineer as he or she briefs and debriefs the person undergoing the check and completes relevant documentation, while occupying a crew seat relevant to the check.

Ensure that the check pilot/check flight engineer makes a correct assessment of the person undergoing the check, or conducts appropriate remedial teaching, if carrying out a training exercise.

If the check is conducted in a simulator, ensure that the check pilot/check flight engineer demonstrates proficiency in operating the simulator, including:

- Setting to a specified locality and runway
- Setting to a specified in flight position
- Inserting specific operation parameters — for example, weight, fuel, environment, etc.

If the check is conducted in an aircraft, and if appropriate, ensure that the check pilot records indicates that he has demonstrated critical maneuvers from the right-hand seat, including:

- Simulated engine failure at VI
- A landing with one engine simulated inoperative.
- During this demonstration, the left-hand seat must be occupied by a suitably qualified check pilot or the Inspector. At the completion of the exercise, observe the check pilot/check flight engineer as he or she discusses the results of the check with the pilot/crew

This page reserved for future expansion of the condensed inspecting standards for Check Pilot/Flight Engineer Inspections. Consult the appropriate technical source references in Part 4 for this task.

CHECK PILOT/ENGINEER
(Authorization or Inspection)

Record ID:	Inspector	Type of Operation	Activity Number – Checklist
Date Accomplished:	# Issues	Operator	Tracking #

Flight #:	To:	From	AC Registration:	AC or Simulator	Type:

PIC #:	Other Crew #	Check Pilot #:
	Supervisory Check Pilot #	Check Approval

Instructions for Use:

1. Check YES column if you reviewed the record, procedure or event and have no comment.
2. Check NO column if you reviewed the record, procedure or event and have a comment.
3. Check column if you did not review the record, procedure or event *or you do have adequate information to make a valid comment*
4. Enter the letter 'N' in the column, if the line item is not required in this particular situation.
5. Enter any notes on reverse side regarding a NO answer for transfer to the Safety Issues Resolution Report.
6. For later reference, precede any notes with the appropriate question number.

Yes	No			
				Liberia CAA FILES
			1.	Is the air operator‘s nomination of check person in the file?
			2.	Is an updated copy of the check person‘s resume in the file?
			3.	Is a copy of the last designation in the file?
				AIR OPERATOR FILES
			4.	Does the check person meet the minimum experience
			5.	Has the check person completed all required company training?
			6.	Is the check person current and qualified for the aircraft?
			7.	Is the check person current and qualified for the routes or navigation required?
				Liberia CAA BRIEFINGS
			8.	Has the designee attended a Liberia CAA Examiner Seminar?
			9.	Has the designee attended an annual Liberia CAA briefing?
				ACCEPTABLE CONDUCT OF CHECK SESSION
			10.	Pre-briefing?
			11.	Pre-flight planning?
				AIRCRAFT KNOWLEDGE EXAMINATION
			12.	Examination of aircraft limitations knowledge?
			13.	Examination of aircraft systems knowledge?
			14.	Examination of aircraft checklist immediate action items?
			15.	Examination of aircraft exterior inspection knowledge?
				FLIGHT PROFICIENCY EXAMINATION
			16.	Examination of flight deck preparation procedures?
			17.	Examination of flight maneuvers proficiency?
			18.	Examination of normal procedures proficiency?
			19.	Examination of abnormal procedures proficiency?
			20.	Examination of emergency procedures proficiency?
				ADMINSTRATION OF FLIGHT SCENARIO
			21.	Operation of simulator console acceptable?
			22.	'Realistic, real-time' events as much as practical?
			23.	Handling of marginal performance acceptable?
			24.	Handling of unacceptable performance a?
			25.	Handling unexpected simulator or scenario glitches?

				DEBRIEFING AND EVALUATION OF PERSON CHECKED?
			26.	Debriefing covered all significant items?
			27.	Accurate assessment of performance of person being checked?
				COMPLETION OF REQUIRED DOCUMENTATION
			28.	Appropriate company documentation completed?
			29.	Appropriate 'O' check form completed by ASI?

REMARKS & OBSERVATIONS

INSPECTOR SIGNATURE

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Additional comments ☐=>