# EAC
# No. 142

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## Certification and surveillance of aviation training centers

## APPENDIX A

## GROUND INSTRUCTORS

### A.1 Applicability.
This appendix prescribes the requirements for issuing ground instructor Letter of Authorization (LOA) and associated ratings and the general operating rules for the holder of this LOA and ratings.

### A.3 Ground instructor definition.
A ground instructor is a person selected by a training center or an AOC certificate holder operator who has appropriate knowledge, skills, experience, training, and demonstrated ability to instruct crewmembers, dispatchers, airmen other than crewmembers, material handlers, ground servicing personnel, traffic handling staff, and/or security personnel, and others approved by the ECAA in curriculum segments other than flight curriculum segments. A ground instructor may certify the satisfactory completion of ground training curriculum segments. A ground instructor who is specifically selected and qualified by the operator, may conduct competency checks for cabin crews or for aircraft dispatchers, as applicable. A ground instructor must hold a Letter Of Authorization (LOA) or certificate when conducting ECAR parts 91, 121 and 175 training.

### A.5 Application and issue.
(a) An applicant for an LOA or certificate, or for additional rating, under this appendix, is made on a form and in a manner prescribed by the ECAA. However a person whose ground instructor LOA or certificate has been revoked may not apply for a new LOA for a period of one year after the effective date of revocation unless the order of revocation provides otherwise.

(b) An applicant who meets the requirements of this appendix is entitled to an appropriate LOA or certificate with ratings naming the subjects that he is authorized to teach.

(c) Unless authorized by the ECAA, a person whose ground instructor LOA or certificate is suspended may not apply for any rating to be added to that LOA during the period of suspension.

(d) Unless the order of revocation provides otherwise, a person whose ground instructor LOA or certificate is revoked may not apply for any ground instructor LOA for one year after the date of revocation.

### A.7 Temporary LOA.
A temporary LOA or rating effective for a period of not more than 90 days may be issued for a qualified applicant.

### A.9 Duration of LOA or certificate
(a) An LOA, certificate or rating issued under this appendix is effective until it is surrendered, suspended, or revoked.

(b) The holder of any LOA or certificate issued under this appendix that is suspended or revoked shall upon the ECAA's request, return it to the ECAA.

### A.11 Cockpit Crew Ground Instructor eligibility requirements.
A. To be eligible for an LOA under this appendix, a person:

(a) Must be at least 24 years of age.

(b) Must be able to read, write, speak, and understand the English language.

(c) Except as provided in paragraph B. of this section, must attend and pass a course on the fundamentals of instructing that includes at least the following:

(1)The learning process;

(2)Elements of effective learning;

(3)Student evaluation and testing;

(4) Course development;

(5) Lesson planning; and

(6) Classroom training techniques.

(d) Must show his practical and theoretical knowledge of the subject for which he seeks a rating.

B. The course and test specified in paragraph A. c) of this section is not required if the applicant holds an LOA issued under ECAR Part 61.

**A.11.1 Recent experience requirements.**

The holder of a cockpit crew ground instructor LOA may not perform the duties of a ground instructor unless, within the preceding 12 months:

(a) has instructed at least 120 hours as a cockpit crew ground instructor; or

(b) the ECAA has determined that he meets the standards prescribed in this appendix for the LOA and rating.

**A.13 Cabin Crew Ground Instructor eligibility requirements.**

A. To be eligible for an LOA under this appendix, a person:

(a) Must be at least 26 years of age.

(b) Must be able to read, write, speak, and understand the English language.

(c) Must have accumulated at least 500 flight hours.

(d) Must attend and pass an IATA or any other internationally approved course on the Professional Skills for Cabin Crew instructors acceptable to the ECAA that includes at least the following:

(1)The learning process;

(2)Elements of effective learning;

(3)Student evaluation and testing;

(4) Course development;

(5) Lesson planning; and

(6) Classroom training techniques.

(e) Must show his practical and theoretical knowledge of the subject for which he seeks a rating.

(f) Must instruct at least one initial equipment ground training course under the supervision of an ECAA approved cabin crew ground instructor.

**A.13.1 Recent experience requirements.**

The holder of a cabin crew ground instructor LOA may not perform the duties of a ground instructor unless, within the preceding 12 months:

(a) Has instructed at least 200 hours as a cabin crew ground instructor; or

(b) The ECAA has determined that he meets the standards prescribed in this appendix for the LOA and rating.

**A.15 Dangerous Goods Instructor eligibility requirements.**

No certificate holder may use any person nor may any person serve as a dangerous goods regulations instructor, unless that person has satisfactory completed the following requirements and abide by their sequence:

1- Successfully completes a Basic Indoctrination course that as part of its contents introduces him to international civil aviation laws and international organizations such as ICAO, IATA, FIATA, ECARs, FARs, and JARs. This is in addition to his company's organization, policies and procedures.

2- Successfully completes an IATA Basic Cargo course that must include one week of on site familiarization and the study of IATA Dangerous Goods Regulations –training program 4.

3- Spends at least three months doing cargo handling On the Job Training (OJT).

4- Supervises and attends an IATA Dangerous Goods Regulations course program 4 at least one time.

5- Successfully completes an IATA Advanced Cargo course (Optional).

6- Successfully completes an IATA Dangerous Goods Regulations training program.1.

7- Spends three months doing cargo acceptance on the job training (OJT).

8- Supervises and attends an IATA Dangerous Goods Regulations course program 1 for at least one time and under the supervision of an ECAA approved instructor who may allocate to him sections to instruct under his supervision.

9- Successfully completes IATA/FIATA or any other internationally approved course acceptable to the ECAA on the Professional Skills for Dangerous Goods Instructor.

10- Instructs at least one dangerous goods course under the supervision of an ECAA approved dangerous goods instructor.

**A.15.1 Recent experience requirements.**

The holder of a dangerous goods regulations instructor certificate may not perform the duties of a dangerous goods regulations instructor unless, within the preceding 12 months:

(a) The person has served at least 3 months as a dangerous goods regulations instructor; and

(b) Has completed a minimum of 3 months per year on the job training in general cargo handling (acceptance, loading, storage, inspection, and provision of information).

**A.17 First Aid Instructor eligibility requirements.**

A. To be eligible for an LOA under this appendix, a person:

(a) Must be at least 26 years of age.

(b) Must be able to read, write, speak, and understand the English language.

(c) Must attend and pass a course on the fundamentals of instructing that includes at least the following:

(1)The learning process;
(2)Elements of effective learning;
(3)Student evaluation and testing;
(4) Course development;
(5) Lesson planning; and
(6) Classroom training techniques.

(d) Must be a graduate of:

(1) The faculty of medicine; or

(2) The faculty of pharmacology, science, or dentistry. In this case (2) the person must have attended and successfully passed an internationally approved first aid course acceptable to the ECAA.

**A.17.1 Recent experience requirements.**

The holder of a first aid instructor LOA may not perform the duties of a first aid instructor unless, within the preceding 12 months:

(a) Has instructed at least 60 hours as a first instructor; or

(b) The ECAA has determined that he meets the standards prescribed in this appendix for the LOA and rating.

# APPENDIX B
# RECORD KEEPING

# RECORD KEEPING

## SECTION 1. GENERAL

### B.1 GENERAL.

This chapter contains information and guidance to be used by ECAA when evaluating an operator's (ECAR Part 121 operators, ECAR Part 141 training schools, or ECAR Part 142 aviation training centers) record keeping system for acceptance or approval. If the system is found satisfactory, it will be approved or accepted. Approval will be indicated by a letter. Acceptance will be indicated by a letter or by the lack of any ECAA objections.

•**This Section**. Contains a general overview of proprietary information, the regulatory requirements for record keeping under ECAR Part 121, ECAR Part 141 and ECAR Part 142, and definitions of terms as they relate to operator record keeping.

•**Section Two**. Contains information and guidance about the acceptance or approval of an operator's record keeping system.

•**Section Three.** Contains information and guidance about currency periods for records.

•**Section Four.** Contains information about computer based record keeping.

### B.2 CHARACTERISTICS OF INFORMATION AND RECORDS.

Operators collect and use both information and records in the conduct of operations.

**a. Information Versus Record.** Inspectors should be aware of the difference between a record keeping system and a management information system. A record is defined as an account which preserves evidence of the occurrence of an event. In general, a record must show what event occurred, to whom, by whom, when, and proof of the event's occurrence, such as a certification by signature or by electronic means. A system that collects related information for making operational decisions but does not preserve evidence of the event's occurrence is not a record keeping system.

**b. Proprietary Information.** Proprietary information is that information which is the sole property of the operator. Inspectors do not have a right to compel an operator to divulge proprietary information.

### B.3 REGULATORY REQUIREMENTS.

ECAR Part 142 Aviation Training Centers require that the certificate holder must maintain records for trainees enrolled in a course, and instructors and evaluators designated to instruct a course. ECAR Part 121Air Carrier and Air Taxi require that operators maintain certain records on crewmembers and dispatchers participating in-flight operations. ECAR Part 142 Subpart E and ECAR Part 121 specify certain regulatory requirements for record keeping.

**a. Part 121 Air Carrier and Air Taxi.** ECAR Part 121.683 requires that operators maintain current records to show that each crewmember and dispatcher, as applicable, complies with proficiency and qualification as stated in this chapter. ECAR 121.683 also requires that operators record each action taken concerning the release from employment or physical or professional disqualification of any cockpit crewmember or dispatcher and retain that record for six months. ECAR 121.683 does not specify time periods that qualification records must be kept other than those in ECAR 121.683(a)(2). This ECAR also provides for approval by the ECAA of computer record systems to comply with the record keeping requirements of that section. ECAR 121.695 specify retention periods for load manifests, flight or dispatch releases, and flight plans. ECAR 121.711 specifies the retention period of en-route radio contact between the operator and the operator's pilots.

**b. Part 121 Air Taxi** requires that operators keep certain records at either the principal business office or another place approved by the ECAA, and establish retention periods for certain required records.

**c. Other.** In order for an operator to show regulatory compliance and to allow the ECAA to conduct surveillance to determine this compliance, the operator may elect to maintain other types of records, such as ETOPS and LORAN navigation records, even though they are not specifically mentioned in Part 121. Other examples are company flight instructor / check airman training records, and designated examiners.

**B.4 DEFINITIONS.**
The following definitions are used throughout this chapter:

**a. Calendar Month.** The first day through the last day of a particular month.

**b. Computer Based Record Keeping System.** A system of record processing in which records are entered, stored, and retrieved electronically by a computer system rather than in traditional hard copy form.

**b. Computer Hardware.** A computer and the associated physical equipment directly involved in the performance of communications or data processing functions.

**d. Computer Software.** Written or printed data, such as programs, routines, and symbolic languages, essential to the operation of computers.

**e. Data Backup.** Use of one of several recognized methods of providing a secondary means for storing records. This backup can be used to reconstruct the format and content of electronically stored records in case of loss of, failure of, or damage to the primary record keeping system.

**f. Data Base Management System (DBMS).** A computer software program capable of maintaining stored information in an ordered format, manipulating that data by mathematical methods, and data processing functions such as retrieval of data.

**g. Data Entry.** The process by which data or information is entered into a computer memory or storage medium. Sources include manually written records, real time information, and computer generated data.

**h. Data Verification.** A process of assuring accuracy of data records by systematically or randomly comparing electronic records with manual data entry documents.

**i. Electronic Mail.** The transmittal of messages, documents, or other communications between computer systems or other telecommunication channels.

**j. Electronic Signature.** Any of several generally recognized techniques for electronically identifying individuals entering, verifying, or auditing computer based records, and checking for authenticity.

**k. Eligibility (Grace) 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 (base month). For example, if a crewmember or aircraft dispatcher whose training/checking month is August receives the required recurrent training in September, August remains as the training/checking month. Also, if a crewmember or aircraft dispatcher fails to complete the required training during the grace period and acquires flight time or functions as a dispatcher during the month following the training/checking month, the crewmember or aircraft dispatcher is not in violation of the ECARs since the month following the training/checking month is still considered part of the grace period.

***l. Modem.*** A device that can use existing telephone transmission circuits to transfer information between either two or more computer systems, or computers and remote terminals.

***m. Password.*** An identification code required to access stored material. A device intended to prevent information from being viewed, edited, or printed by unauthorized persons.

***n. Proprietary Information.*** Information which is the private property of the operator.

***o. Real Time Record.*** Information that is entered into a computer based record keeping system immediately following the completion of an event or fulfillment of a condition, without first relying on the manual recording of the information on a data entry form.

***p. Records.*** Information in a predetermined format that shows that the operator or its personnel have accomplished a particular event, have met certain criteria, or have fulfilled specific conditions required by the ECARs.

***q. System Security.*** Policies, procedures, and system structures designed to prevent users from gaining access to sections of a data base to which they are not authorized access.

***r. Telephone Dial In Access.*** A means of gaining access to a computer system from a remote location through a telephone modem and existing telephone circuits.

***s. Training/Checking Month (Base Month).*** The calendar month during which a crewmember or aircraft dispatcher is due to receive required recurrent training, a required check, or a required familiarization flight.

***t. User Identification.*** A series of alphabetic and/or numeric characters assigned to one or more individuals or organizations for the purpose of gaining access to a computer system and accounting for time usage.

**B.5 MERGERS AND ACQUISITIONS.**
When two or more computer based record keeping systems are being consolidated because of a merger or acquisition, the consolidation of the training programs and the record keeping systems which correlate to those programs is of particular importance. Accurate consolidation of those systems must be given priority by the ECAA. Training records of the acquired company's flight operations personnel must comply with the basic ECAR requirements before being accepted. Once the surviving system has been approved, the operator should transfer data from the existing system into the surviving system.

**a. Unavailable Records.** Due to variances in record keeping methods of individual operators, some records may not be available or useable for inclusion in the surviving computer based record keeping system. In this case, the operator must reconstruct records from available resources. If there are no resources from which to reconstruct records, assumptions that experienced personnel have accomplished required training may be required. In these cases, the ECAA and operator should agree on a method of identifying portions of a record that are based on these assumptions. The method used to identify this information should be discussed in the operator's user manual.

***b. Changes to Existing Record Keeping System.*** The ECAA is responsible for evaluating any request for change to an operator's existing record keeping system. Minor changes such as modifications to display formats may not require a formal evaluation and approval; major changes affecting system operation or capability may require an in depth evaluation and approval process.

***c. Transition from Existing System to Surviving System.*** The transition procedures from the operator's existing system to the surviving system must be approved by the ECAA. During this transition, the ECAA shall determine the time period required for maintaining the two systems in parallel operation. The surviving system should have at least the same backup capability as the existing system. The integration of the existing and surviving

systems may be accomplished by electronically combining the data bases of the two systems or by other methods, as long as the accuracy of the data is maintained.

**NOTE:** A change in computer hardware which does not affect functions or capabilities of the system does not constitute a system transition and does not require approval.

## SECTION 2. ACCEPTANCE OR APPROVAL PROCESS

**B.6 GENERAL.**
This section contains information and guidance to be used by the Flight Safety Standards Sector (FSSS) inspectors when accepting or approving operator (ECAR Part 121 operators, ECAR Part 141 training schools, or ECAR Part 142 aviation training centers) record keeping systems. The record keeping acceptance or approval process follows the general acceptance or approval process of the ECAA.

**B.7 REGULATORY REQUIREMENTS.**
ECAR 121.68 (b) requires that the ECAA approve a Part 121 operator's computer based record keeping system. All other record keeping systems must be acceptable to the ECAA requirements. FSSS inspectors shall determine that an operator's record keeping system is in compliance with applicable ECARs.

**B.8 GUIDELINES FOR APPROVAL OR ACCEPTANCE.**
During initial certification, the operator should ensure that the initial compliance statement clearly describes the procedures to be used by the operator for the generation and maintenance of required records. After certification, FSSS inspectors shall conduct surveillance of an operator's records on a routine basis to ensure that the records are being maintained. FSSS inspectors shall also ensure that the records continue to contain the required information to show compliance with the ECARs. The operator shall develop a section in its general operations manual (GOM) that provides detailed instruction on the use of the record keeping system and as part of the GOM, must be provided to the ECAA.

## SECTION 3. CURRENCY PERIODS FOR RECORDS

**B.9 GENERAL**. ECAA inspectors shall determine if an operator's (ECAR Part 121 operators, ECAR Part 141 training schools, or ECAR Part 142 aviation training centers) record keeping system provides the necessary documentation to demonstrate compliance with the ECARs. Adequate historical data must be maintained by the operator to enable the ECAA inspectors to determine compliance at any time. This section contains information and guidance to be used by ECAA inspectors when determining the necessary currency periods for records.

**B.10 CATEGORIES OF RECORDS.** In order to demonstrate regulatory compliance, training and qualification records must be retained to document currency and prerequisite qualification.

**A. Permanent Records.** Permanent records are the documentation of the successful completion of training or qualification events which are prerequisites for subsequent assignments. These records must be retained for the duration of the individual's employment with that operator to substantiate the individual's qualifications. Examples of permanent records include the following:

(a) Basic indoctrination records.
(b) Initial qualification records.
(c) Transition and upgrade aircraft training records.
(d) Required operating experience (OE) observation of by ECAA inspector records.

**B. Currency Records.** Currency records are the documentation of training or qualification events which qualify individuals for their present assignments and are required to be re-accomplished at scheduled intervals. In order to show continuity of qualification, this type of record must be retained until superseded by a record of similar training or qualification.

**NOTE:** Many operators revise LOFT scenarios annually in order to preclude any crewmember from receiving the same scenario more than once. An operator that revises LOFT scenarios less frequently should be required to maintain additional records to ensure that the crewmember does not receive the same in two consecutive training cycles.

***C. Records of Action.*** Regulations require that an operator records each action taken concerning the release from employment or physical or professional disqualification of any cockpit crewmember or aircraft dispatcher and keep the record for at least 6 calendar months.

**NOTE:** For Part 121 operators, permanent records, including records of action, may be discarded 6 months after release, termination, or disqualification from employment.

***D. Additional Records.*** The operator may need to keep additional records as a condition of special operational authorizations. For example, a record of successful operation is required before the ECAA can grant approval to increase the extended range operations with two engine airplanes (ETOPS) en-route alternate time requirements from 90 to 120 minutes. Operators may be required to keep additional training and qualification data in order to justify changes in the authorization of such areas as ETOPS, training hour reductions and OpSpecs. ECAA inspectors should encourage operators to establish additional record keeping for analysis purposes. Operators may depersonalize those records not required by the ECARs.

NOTE: Operators that have been granted exemption to the ECARs may be required by the terms of those exemptions to retain additional records for a specified period.

**B.11 CURRENCY PERIODS FOR RECORD KEEPING SYSTEMS.** When evaluating any record keeping system, ECAA inspectors shall ensure that the system has the capability for entry, storage, retrieval, and archiving of all required records in the categories of records for which the operator is seeking acceptance or approval (job aids for currency periods and regulatory references - to be developed).

## SECTION 4. COMPUTER BASED RECORD KEEPING

**B.12 GENERAL.** Many operators are developing computer based record keeping systems, allowing more flexible and efficient maintenance of records. Some computer based systems offer electronic communications capabilities which benefit both the operator and the ECAA. This section contains information and guidance to be used by ECAA inspectors when evaluating and approving an operator's (ECAR Part 121 operators, ECAR Part 141 training schools, or ECAR Part 142 aviation training centers) computer based record keeping system.

**B.13 REGULATORY REQUIREMENTS.** Parts 121 require that operators maintain certain records on crewmembers and aircraft dispatchers. ECAR 121.683(b) requires that computer based record keeping systems be approved by the ECAA.

**B.14 GUIDELINES FOR SYSTEM APPROVAL.** ECAA inspectors shall ensure that operators follow certain guidelines and submit certain information when applying for approval of a computer based record keeping system.

***A. Approval and Evaluation Process.*** An operator may apply for approval of a computer based record keeping system that is designed to satisfy either all regulatory requirements or specific regulatory requirements, such as training records. When evaluating a computer based record keeping system, ECAA inspectors shall ensure that the proposed system provides a means of maintaining accurate, timely, and reliable records required by the ECARs. When approving the system, ECAA inspectors shall follow the general 5 step approval process.

**(1) Application by Letter.** Operators must apply for approval of computer based record keeping systems by letter.

a) Content of Letter.

The letter of application must contain the following information:

i) A general description of the proposed computer based record keeping system (including the facilities, hardware and software to be utilized).

ii) The data backup system to be used.

iii) Access and security procedures for both the operator and ECAA personnel.

iv) Basic procedures for data entry personnel.

v) A general description of any special procedures and capabilities.

b) Categories of Records.

The letter of application must include one or more of the following categories of records which will be maintained by the computer based record keeping system:

i) Airman training records (including pilot, flight engineer, flight navigator, cabin crew, ground instructor, flight instructor, check airman, and aircraft dispatcher training records).

ii) Aircraft qualification records (including aircraft type ratings, proficiency checks, competency checks, and line checks).

iii) Flight time limitation and rest requirement records.

iv) Medical qualification records (when applicable).

v) Route, "special airport," and area qualification records.

vi) Operating experience (OE) and/or operating familiarization records.

vii) Pilot recency of experience records.

viii) Check airman, aircrew program designee (APD), and school designated examiner (SDE) designations or authorizations.

ix) Special training or testing requirements.

x) Aircraft listings.

xi) Load manifests, dispatch/flight releases.

xii) Communication records.

**(2) Parallel Record Keeping System.** The ECAA inspectors shall ensure that any operator that requests approval of a computer based record keeping system retains data entry forms or other pertinent non-electronic records in a parallel record system. The ECAA inspectors shall ensure that all required records continue to be maintained while the computer based record keeping system is being installed, tested, and evaluated, and data entry personnel are being trained to recognize regulatory terminology and requirements.

***B. System Evaluation.*** ECAA inspectors shall evaluate the computer based record keeping system capabilities and level of security.

**(1) System Capabilities.** Prior to approval, the ECAA inspectors should carefully evaluate the proposed computer based record keeping system to ensure that the system is capable of providing accurate, timely, and reliable records, as required by the ECARs. The ECAA inspectors shall review the operator's proposed transition plan and user manual, and observe operation of the operator's existing record keeping system in parallel operation with the proposed computer based system. The extent of this evaluation depends on the complexity of the proposed system and its intended use. The evaluation of a system designed to comply with all regulatory requirements will be much more complex than that of a system designed to maintain records in one specific category. The ECAA inspectors shall ensure that system security, record retention periods, and data backups are adequate. Potential problem areas should be identified and corrected prior to approval.

**(2) Level of Security.** ECAA inspectors shall evaluate the proposed system's level of security to ensure that the data base is adequately protected.

(a) Authorized Access.

To maintain integrity of the data base and associated records, the ECAA inspectors should coordinate with the operator during the approval process concerning which ECAA personnel will have access to the operator's record keeping system. One frequently used approach is to rely on controlled user access codes and passwords.

(b) Monitoring User Access.

A representative designated by the operator should actively monitor user access and periodically review access control requirements. This representative shall be specifically identified and authorized in the operator's proposal and user manual.

(c) Electronic Signature.

The operator should establish a procedure for allowing designated personnel such as flight instructors/check airmen, ground instructors, aircraft dispatcher supervisors, and cabin crew supervisors to electronically certify all record entries for which they are responsible. This certification may take one of many forms such as full name, initials, or unique identification number. Each designated person with authorization to make such entries shall be issued a unique individual access code and password in order to validate the entry. The operator may devise a system that requires the validating official to either enter a real time record into the system or complete a written transmittal document to be given to data entry personnel. If a written transmittal document is used, the identification of the validating official must become part of the record.

(d) Unrestricted Data Retrieval.

Appropriate ECAA inspectors assigned to the operator should be provided with an access level which allows unrestricted data retrieval of all records required by the ECARs. If the operator elects to use the computer record keeping system's capability for electronic designation of examiners and check airmen, an appropriate level of access should be provided to the ECAA inspectors to allow necessary data entries.

**(3) Data Backup Capability and Storage.** The ECAA inspectors shall verify that the operator has established a backup capability to generate a complete set of duplicate records, either electronic or non-electronic. These records should be stored in a location separate from the main information storage facility. These records may be stored in any form acceptable to the ECAA inspectors, including magnetic tape, magnetic or optical disk, microfiche, or printed records. The operator shall backup data as frequently as appropriate to the operator's level of operations and system complexity. For example, a major operator may perform a simultaneous on-line data backup, while a smaller operator may perform backups at less frequent intervals.

**(4) User Manual.** The operator shall develop a working procedures manual for day today guidance and training for the operator's employees. This manual should also be provided as a reference document for ECAA users. This manual will not require ECAA approval but must include guidance in the automated record keeping system structure and instructions for using computer commands for such operations as data entry, data processing, data retrieval, and report generation. This manual should address system security procedures and responsibilities, including identification of personnel charged with various levels of data entry, data verification and correction, data audits, and quality control. It should also identify individuals with the authority to issue user access codes and passwords.

**(5) Audit Procedures.** The ECAA inspectors shall ensure that operators' programs contain audit procedures that are adequate to assure the accuracy of the data base. The frequency and scope of these procedures should reflect the complexity of the computer based record keeping system and the size of the data base.

**B.15 GRANTING APPROVAL.** When all requirements of paragraphs ***B.*** **(1)** through ***B.*****(5)** have been met, the ECAA inspectors may either grant approval for the entire computer based record keeping system or any part of the system. This approval shall be a nonstandard paragraph in the operations specifications (OpSpecs) for Part 121 operators or

in the training specifications (TrngSpecs) for Part 141 and 142 operators and shall directly reference the manual where the information in the record keeping system is maintained.

**B.16 SYSTEM SURVEILLANCE.** ECAA inspectors are responsible for conducting system surveillance which includes periodic inspections and audits, inspection intervals, and data entry accuracy.

***A. Inspections and Audits.*** After the computer based record keeping system is approved and fully operational, the ECAA inspectors shall ensure compliance through periodic inspections and audits. These inspections and audits shall be conducted using the same criteria as those used during the initial approval process. The ECAA inspectors should plan inspection intervals at least once every 12 months. The annual inspection should normally be conducted in conjunction with national program guidelines.

***B. Inspection Intervals.*** When determining inspection intervals, the ECAA inspectors shall consider the following:

a) The size of the data base.
b) The system's overall sophistication level.
c) The extent of the system's security measures.
d) The capability and frequency of the system's self-audit function.

***C. Scope of the Inspection.*** The ECAA inspectors shall determine the scope of the inspection. It may be appropriate to sample a small number of records in each category that the system is approved to maintain, or to conduct an in depth inspection of a specific category of records, such as aircraft dispatcher training.

***D. Data Entry Accuracy.*** The ECAA inspectors shall ensure data entry accuracy during all inspections and audits. A useful evaluation tool might be to compare the operator's required records with ECAA surveillance, inspection, and certification records.

**B.17 ADDITIONAL SYSTEM CAPABILITIES**. In addition to record retention and retrieval, the operator may request approval of a system with additional capabilities such as electronic communications and surveillance.

***A. Electronic Communications.*** The operator may provide the ECAA inspectors with electronic mail capability which would allow the operator to request designation of certain airmen, such as check airmen, APDs, and SDEs. This capability would also allow the ECAA inspectors to respond electronically to these requests, thereby increasing both operator and ECAA efficiency and convenience. To implement this electronic mail capability, the operator should provide the ECAA inspectors with system access from the ECAA inspectors facility by providing necessary hardware to be installed at the ECAA inspectors facility.

***B. Electronic Surveillance.*** The operator may also provide direct access to the operator's computer based record keeping system to allow the ECAA inspectors to carry out required surveillance activities such as random record retrieval for spot inspections, data audits, selective data retrievals, and reports or summaries. The operator should limit system access to those portions of the record keeping system that are used for data retrieval of records required by the ECARs. Normally, the ECAA inspectors should not be given access to data entry areas; however, the operator may authorize the ECAA inspectors access to data entry areas which pertain to ECAA-specific data, such as observations of the pilot in command (PIC) OE and observation events related to the designation of check airmen or examiner candidates.

# APPENDIX C
# PHYSICAL FACILITIES



## C.1 Applicability.
This appendix prescribes the training center facilities requirements for issuing a training center certificate under ECAR Part 142.

## C.2 General.
The following facilities are required to accommodate the ground training of crewmembers, dispatchers, airmen other than cockpit crewmembers and dispatchers, material handlers, ground servicing personnel, and security personnel, and others approved by the ECAA. The facilities must be built in accordance with a reputable code, this includes electrical and mechanical installations.

## C.3 Classrooms.
The size of the classrooms must be adequate for the number of students in class (3.25 square meter per student). The number of student in a class should not exceed 18. Larger groups of students are acceptable for special types of training – films, visiting lecturers, etc. For Computer Based Training instruction, one station must be provided for each student.

The classrooms must be adequately air-conditioned, ventilated, lighted and are not routinely subject to significant distractions.

A reasonably sized flat top desk (1.2m x 0.8m) must be provided for each student together with a comfortable upright chair. The instructor needs a similar desk and chair.

All classrooms must be fitted with a white board, overhead projector and screen (the white board may be used instead of the screen). Student response systems which enable each student to visually signal an answer to a question posed by the instructor are recommended. Wiring (even empty wiring conduits) for possible future equipment installations should be provided.

## C.4 Assembly Hall And Cinema.
A large hall must be provided to fulfill the occasional requirement for bringing a large audience together for special purposes such as examinations, special lectures and addresses, prize-giving ceremonies and film shows.

The seats must be in rows without desks and must be of the stackable type which will enable some of them to be moved out of the way, allowing desks, also stackable, to be brought in. The hall must be provided with a raised platform, a microphone system, video projection system and cinema.

## C.5 Management And Instructor Accommodation.
Each instructor must have a place where he can work in reasonable privacy and quiet for such purposes as preparing lectures and setting and marking examinations. He must have a desk for his books and other working material, and a locker for personal possessions. Individual private offices are not necessary, and double or even multi-occupation is

acceptable provided there is a minimum floor space of about 5 or 6 square meters per instructor.
Management instructors and the chief instructor must be provided with reasonably sized private rooms for private interviews with staff and students. Secretarial accommodation and facilities should be adjacent to the management rooms. A meeting room must also be provided.

**C.6 Technical Library.**
Must be adequately air-conditioned, ventilated, lighted and not routinely subject to significant distractions.

It must be comprehensive enough to provide those reference manuals, textbooks (training manuals) and lecture notes which are absolutely necessary to cover the curriculum. All students should be supplied with individual copies of the textbooks and lecture notes for their personal use and retention – at least one additional master set should be held in the library.

The library should also contain works which supplement, explain and expand on the course material. It is desirable that it contains other works on related aspects of aviation.

There must be some tables and chairs for instructors and students to use in the library. In a small training center, a room of about 30 square meters with book shelves on the wall and five or six tables will be adequate.

There must be a stocking, supervision, and control system.

In addition to the normal daytime hours, the library should be open for evening training activities.

**C.7 Printing And Copying Room.**
The room must be adequately air-conditioned, ventilated, lighted, and maintained in a tidy and clean condition.

There must be a supervision and control system.

In addition to the normal daytime hours, the printing and copying room should be open for evening training activities.

**C.8 Facilities Emergency and Fire Fighting Equipment.**
A reputable international life safety code must be adopted according to which the facilities should be equipped with safety and fire fighting devices, appropriate emergency equipment, advisory marks in clear places of the buildings, along with appropriate emergency exits suitable for all abnormal conditions. A first aid kit must be readily available at all times. All employees must be trained for the use of the life saving and fire fighting equipment.

**C.9 Rest Rooms.**
A reputable international sanitary code must be adopted according to which the number of rest rooms should be suitable and must be adequately ventilated, and lighted. Rest rooms must be maintained in a clean condition.

**C.10 Catering Facilities.**
The size, service hours, and type (e. g. take away canteen, cafeteria-type canteen, or restaurant) of the catering facilities must be appropriate with respect to the training hours, the number of trainees and the number of employees. Vending machines must be provided to offer snacks, hot and cold drinks when training activities are expected to be held outside the normal working hours (e.g. night shift simulator training.)
Whether the catering services are managed by the training center or a separate catering specialist contractor, high standards and quality of food and cleanliness must be maintained.
The catering facilities must be adequately lighted and ventilated.

# APPENDIX D

# QUALITY SYSTEM

## D.1 Applicability.

This appendix prescribes ECAA quality system requirements for air carriers and air taxi operators Training Programs or Training Organizations responsible for the implementation of the operators' training programs; as well as quality system requirements for independent Training Organizations (Training Centers). In accordance with ICAO Annex 6 and ECAR Part 142 section 142.11 (b) (9) a Training Organization shall establish and maintain a quality system approved by the ECAA.

## D.2 General.

D.2.1 The rationale for the requirements of quality systems is the need to establish a distinct assignment of roles between the ECAA and Training Organizations by creating an evident division between the regulatory and surveillance responsibility on the one hand, and responsibility of the training activities in itself on the other. Therefore the Training Organizations must establish a system whereby they can monitor their activities, be able to detect deviations from set rules and standards, take the necessary corrective actions and thus ensure compliance with ECAA rules regulations (ECARs) and their own requirements. A well established 'and functioning quality system will make it possible for the ECAA to perform inspections and surveillance efficiently and with a reasonable amount of resources.

D.2.2 It is obvious and well recognized that the scope and complexity of a quality system should reflect the size and complexity of the Training Organization and its training activities. The objectives and the same principles apply, however, to any Training Organization, irrespective of size and complexity. Thus, in small and relatively small Training Organizations, the quality system may be quite simple and integrated in the basic organization, whereas larger organizations with more complex training activities will need to establish separate and independent quality organizations within the overall organizational set-up.

In determining size in this context the following guidelines apply:

- -Training Organizations with 5 or less full time instructors employed are considered very small;
- -Training Organizations employing between 6 and 20 full time instructors are considered small.

In determining complexity, factors such as number of aircraft types used for training, range of training courses offered, geographical spread of training activities (e.g. the use of satellites), range of training arrangements with other Training Organizations, etc. will be considered.

D.2.3 In a quality system of any Training Organization or Training Program the following **five** elements should be clearly identifiable:

(a) Determination of the training policy, training and flight safety standards;
(b) Determination and establishment of assignment of responsibility, resources, organization and operational processes, which will make allowance for policy and training and flight safety standards;
(c) Follow up system to ensure that policy, training and flight safety standards are complied with;
(d) Registration and documentation of deviations from policy, training and flight safety standards together with necessary analysis, evaluations and correction of such deviations;
(e) evaluation of experiences and trends concerning policy, training and flight safety standards.

D.2.4 A basis for quality should be established by every Training Organization and problem-solving techniques to run processes should be applied. Knowledge in how to measure, establish and ultimately achieve quality in training and education is considered to be essential.

D.2.5 The purpose of this appendix is to provide information and guidance to the Training Organizations on how to establish a Quality System.

**D.3 Definitions.**

D.3.1 ***Accountable Manager***. (May be the Head of Training.)

D.3.2 ***Quality.*** The totality of features and characteristics of a product or service that bear on its ability to satisfy stated or implied needs.

D.3.3 ***Quality Assurance.*** All those planned and systematic actions necessary to provide adequate confidence that all training activities satisfy given requirements, including the ones specified by the Training Organization in relevant manuals.

D.3.4 ***Quality Manager.*** The manager, acceptable to the ECAA, responsible for the management of the Quality System, monitoring function and requesting corrective ' actions.

D.3.5 ***Quality Manual.*** The document containing the relevant information pertaining to the operator's quality system and quality assurance program.

D.3.6 ***Quality Audit.*** A systematic and independent examination to determine whether quality activities and related results comply with planned arrangements and whether these arrangements are implemented effectively and are suitable to achieve objectives.

D.3.7 ***Training Organization.*** May be an independent organization (a training center or a training school) or may be the administration within an air carrier or air taxi operator responsible for the implementation of its Training Program.

D.3.8 ***Training Program***: A system of instruction which includes curriculums, facilities, instructors, check airmen, courseware, instructional delivery methods, training equipment, quality control and testing and checking procedures. This system must satisfy the training program requirements of ECAR Part 121 and ensure that each crewmember and dispatcher remains adequately trained for each aircraft, duty position, and kind of operation in which the person serves.

**D.4 Quality Policy and Strategy.**
It is of vital importance that the Training Organization describes how the organization formulates, deploys, reviews its policy and strategy and turns it into plans and actions. A formal written Quality Policy Statement should be established that is a commitment by the Head of Training as to what the Quality System is intended to achieve. The Quality Policy should reflect the achievement and continued compliance with relevant parts of the ECARs together with any additional standards specified by the Training Organization.

The Head of Training (Accountable Manager) will have overall responsibility for the Quality System including the frequency, format and structure of the internal management evaluation activities.

**D.5 Purpose Of A Quality System**
The implementation and employment of a Quality System will enable the Training Organization to monitor compliance with relevant parts of ECAR, the Operations Manual, Training Manual (the Training Exposition Manual), and any other standards and procedures as established by that Training Organization, or the ECAA, to ensure safe and efficient training.

**D.6 Quality Manager**
The primary role of the Quality Manager is to verify, by monitoring activities in the field of training, that the standards required by the ECAR, and any additional requirements as established by the Training Organization, are being carried out properly under the supervision of the Head of Training, the Chief Flight Instructor and the Chief Ground Instructor.

The Quality Manager should be responsible for ensuring that the Quality Assurance Program is properly implemented, maintained and continuously reviewed and improved.
The Quality Manager should:
- have direct access to the Head of Training;
- have access to all parts of Training Organization.

In the case of small or very small Training Organizations, the posts of the Head of Training and the Quality Manager may be combined. However, in this event, quality audits should be conducted by independent personnel. In the case of a Training Organization offering integrated training it will not be acceptable for the Quality Manager to hold the position of chief instructor.

## D.7 Quality System

D.7.1 The Quality System of the Training Organization should ensure compliance with and adequacy of training activities requirements, standards and procedures.

D.7.2 The Training Organization should specify the basic structure of the Quality System applicable to all training activities conducted.

D.7.3 The Quality System should be structured according to the size of the Training Organization and the complexity of the training to be monitored.

## D.8 Scope

A Quality System should address the following:

(a) Leadership;
(b) Policy and Strategy;
(c) Processes;
(d) The provisions of relevant parts of the ECARs;
(f) Additional standards and training procedures as stated by the Training Organization;
(f) The organizational structure of the Training Organization;
(g) Responsibility for the development, establishment and management of the Quality System;
(h) Documentation, including manuals, reports and records;
(i) Quality Assurance Program;
(j) The required financial, material, and human resources;
(k) Training requirements;
(l) Customer satisfaction.

## D.9 Feedback System

The quality system should include a feedback system to the Accountable Manager who will ensure that corrective actions are both identified and promptly addressed. The feedback system should also specify who is required to rectify discrepancies and non-compliance in each particular case, and the procedure to be followed if corrective action is not completed within an appropriate time scale.

## D.10 Documentation

Relevant documentation includes the relevant part(s) of the Training (Training Exposition) and Operations Manuals, which may be included in a separate Quality Manual.

D.10.1 In addition relevant documentation should also include the following:
(a) Quality Policy;
(b) Terminology;
(c) Specified training standards;
(d) A description of the Organization;
(e) The allocation of duties and responsibilities;
(f) Training procedures to ensure regulatory compliance.

D.10.2 The Quality Assurance Program, reflecting:
(a) Schedule of the monitoring process;
(b) Audit procedures;
(c) Reporting procedures;
(d) Follow-up and corrective action procedures; Recording system;
(e) The training syllabus; and
(f) Document control.

**D.11 Quality Assurance Program**
The Quality Assurance Program should include all planned and systematic actions necessary to provide confidence that all training is conducted in accordance with all applicable requirements, standards and procedures.

**D.12 Quality Inspection**
The primary purpose of a quality inspection is to observe a particular event/action/document etc., in order to verify whether established training procedures and requirements are followed during the accomplishment of that event and whether the required standard is achieved.

Typical subject areas for quality inspections are:
(a) Actual flight and ground training;
(b) Maintenance;
**(c) Technical Standards; and**
(d) Training Standards.

*D.13 Audit*
An audit is a systematic, and independent comparison of the way in which training is being conducted against the way in which the published training procedures say it should be conducted.

D.13.1 Audits should include at least the following quality procedures and processes:
(a) An explanation of the scope of the audit;
(b) Planning and preparation;
(c) Gathering and recording evidence; and
(d) Analysis of the evidence.

D.13.2 The various techniques that make up an effective audit are:
(a) Interviews or discussions with personnel;
(b) A review of published documents;
(c) The examination of an adequate sample of records;
(d) The witnessing of the activities which make up the training; and
(e) The preservation of documents and the recording of observations.

**D.14 Auditors**
The Training Organization should decide, depending on the complexity of the training, whether to make use of a dedicated audit team or a single auditor. In any event, the auditor or audit team should have relevant training and/or operational experience.

The responsibilities of the auditors should be clearly defined in the relevant documentation.

**D.15 Auditor's Independence**
D.15.1 Auditors should not have any day-to-day involvement in the area of the operation or training activity which is to be audited. A Training Organization may, in addition to using the services of full-time dedicated personnel belonging to a separate quality department, undertake the monitoring of specific areas or activities by the use of part-time auditors.

D.15.2 A Training Organization whose structure and size does not justify the establishment of full-time auditors, may undertake the audit function by the use of part-time personnel

from within its own Organization or from an external source under the terms of an agreement acceptable to the ECAA.

D.15.3 In all cases the Training Organization should develop suitable procedures to ensure that persons directly responsible for the activities to be audited are not selected as part of the auditing team. Where external auditors are used, it is essential that any external specialist is familiar with the type of training conducted by the Training Organization.

D.15.4 The Quality Assurance Program of the Training Organization should identify the persons within the company who have the experience, responsibility and authority to:
(a) Perform **quality** inspections and audits as part of ongoing Quality Assurance;
(b) Identify and record any concerns or findings, and the evidence necessary to substantiate such concerns or findings;
(c) Initiate or recommend solutions to concerns or findings through designated reporting channels;
(d) Verify the implementation of solutions within specific times scales;
(e) Report directly to the Quality Manager.

## D.16 Audit Scope

Training Organizations are required to monitor compliance with the Training and Operations Manuals they have designed to ensure safe and efficient training. In doing so they should as a minimum, and where appropriate, monitor:
(a) Organization;
(b) Plans and objectives;
(c) Training Procedures;
(d) Flight Safety;
(e) Manuals, Logs, and Records;
(f) Flight and Duty Time Limitations;
(g) Rest Requirements and Scheduling;
(h) Aircraft Maintenance/Operations interface;
(i)Maintenance Program and Continued Airworthiness;
(j) Airworthiness Directives management;
(k) Maintenance accomplishment;
(l) Simulators.

## D.17 Audit Scheduling

D.17.1 A Quality Assurance Program should include a defined audit schedule and a periodic review cycle. The schedule should be flexible and allow unscheduled audits when trends are identified. Follow-up audits should be scheduled when necessary to verify that corrective action was carried out and that it was effective.

D.17.2 A Training Organization should establish a schedule of audits to be completed during a specific calendar period. All aspects of the training should be reviewed within a period of 12 months in accordance with the Quality Assurance Program unless an extension to the audit period is accepted as explained below.

D.17.3 A Training Organization may increase the frequency of audits at its discretion but should not decrease the frequency without the acceptance of the ECAA. It is considered unlikely that a period of greater than 24 months would be acceptable for any audit topic.

D.17.4 When a Training Organization defines the audit schedule, significant changes to the management, organization, training, or technologies should be considered, as well **as** changes to the regulatory requirements.

## D.18 Monitoring And Corrective Action

The aim of monitoring within the Quality System is primarily to investigate and judge its effectiveness and thereby to ensure that defined policy, and training standards are continuously complied with. Monitoring activity is based upon quality inspections, audits, corrective action and follow-up.

D.18.1 The Training Organization should establish and publish a quality procedure to monitor regulatory compliance on a continuing basis. This monitoring activity should be aimed at eliminating the causes of unsatisfactory performance.

D.18.2 Any non-compliance identified should be communicated to the Accountable Manager and the manager responsible for taking corrective action. Such non-compliance should be recorded, for the purpose of further investigation, in order to determine the cause and to enable the recommendation of appropriate corrective action.

D.18.3 The Quality Assurance Program should include procedures to ensure that corrective actions are developed in response to findings. These quality procedures should monitor such actions to verify their effectiveness and that they have been completed. Organizational responsibility and accountability for the implementation of corrective action resides with the department cited in the report identifying the finding. The Accountable Manager will have the ultimate responsibility for ensuring, through the Quality Manager(s), that corrective action has re-established compliance with the standard required by the ECAA and any additional requirements established by the Training Organization.

## D.19 Corrective Action

D.19.1 Subsequent to the quality inspection/audit, the Training Organization should establish:
(a) The seriousness of any findings and any need for immediate corrective action;
(b) The origin of the finding;
(c)What corrective actions are required to ensure that the non-compliance does not recur;
(d) A schedule for corrective action;
(e)The identification of individuals or departments responsible for implementing corrective action;
(f) Allocation of resources by the Accountable Manager where appropriate.

D.19.2 The Quality Manager should:
(a) Verify that corrective action is taken by the manager responsible in response to any finding of non-compliance;
(b) Verify that corrective action includes the elements outlined in paragraph D.19.1 above;
(c) Monitor the implementation and completion of corrective action;
(d) Provide management with an independent assessment of corrective action, implementation and completion;
(e) Evaluate the effectiveness of corrective action through the follow-up process.

## D.20 Management Evaluation

D.20.1 A management evaluation is a comprehensive, systematic documented review by the management of the quality system, training policies, and procedures, and should consider:
(a) The results of quality inspections, audits and any other indicators; as well as
(b) The overall effectiveness of the management organization in achieving stated objectives.

D.20.2 A management evaluation should identify and correct trends, and prevent, where possible, future non-conformities. Conclusions and recommendations made as a result of an evaluation should be submitted in writing to the responsible manager for action. The responsible manager should be an individual who has the authority to resolve issues and take action.

D.20.3 The Accountable Manager should decide upon the frequency, format, and structure of internal management evaluation activities.

## D.21 Recording

Accurate, complete, and readily accessible records documenting the results of the Quality Assurance Program should be maintained by the Training Organization. Records are essential data to enable a Training Organization to analyze and determine the root causes of non-conformity, so that areas of non-compliance can be identified and' subsequently addressed.
The following records should be retained for a period of 5 years:
(a)Audit Schedules;
(b)Quality inspection and Audit reports;
(c)Responses to findings;
(d)Corrective action reports;
(e)Follow-up and closure reports;
(f)Management Evaluation reports.

## D.22 Quality Assurance Responsibility For Sub-Contractors

D.22.1 A Training Organization may decide to sub-contract out certain activities to external organizations subject to the approval of the authority.

D.22.2 The ultimate responsibility for the training provided by the sub-contractor always remains with the Training Organization. A written agreement should exist between the Training Organization and the sub-contractor clearly defining the safety related services and quality to be provided. The sub-contractor's safety related activities relevant to the agreement should be included in the Training Organization's Quality Assurance Program.

D.22.3 The Training Organization should ensure that the sub-contractor has the necessary authorization/approval when required, and commands the resources and competence to undertake the task. If the Training Organization requires the sub-contractor to conduct activity which exceeds the sub-contractor's authorization/approval, the Training Organization is responsible for ensuring that the sub-contractor's quality assurance takes account of such additional requirements.

## D.23 Quality System Training

Correct and thorough training is essential to optimize quality in every organization. In order to achieve significant outcomes of such training the Training Organization should ensure that all staff understand the objectives as laid down in the Quality Manual.

Those responsible for managing the Quality System should receive training covering:
(a) An introduction to the concept of Quality System;
(b) Quality management;
(c) Concept of Quality Assurance;
(d) Quality manuals;
(e) Audit techniques;
(f) Reporting and recording, and
(g) The way in which the Quality System will function in the Training Organization.

Time should be provided to train every individual involved in quality management and for briefing the remainder of the employees. The allocation of time and resources should be governed by the size and complexity of the operation concerned.

## D.24 Sources Of Training

Quality management courses are available from the various National or International Standards Institutions, and a Training Organization should consider whether to offer such courses to those likely to be involved in the management of Quality Systems. Organizations with sufficient appropriately qualified staff should consider whether to carry out in-house training.

D.25 Quality Systems For Small/Very Small Organizations
The requirement to establish and document a Quality System, and to employ a Quality Manager applies to all Training Organizations.

D.25.1 Complex quality systems could be inappropriate for small or very small Training Organizations and the clerical effort required to draw up manuals and quality procedures for a complex system may stretch their resources. It is therefore accepted that such Training Organizations should tailor their quality systems to suit the size and complexity of their training and allocate resources accordingly.

D.25.2 For small and very small Training Organizations it may be appropriate to develop a Quality Assurance Program that employs a checklist. The checklist should have a supporting schedule that requires completion of all checklist items within a specified time scale, together with a statement acknowledging completion of a periodic review by top management. An occasional independent overview of the checklist content and achievement of the Quality Assurance should be undertaken.

D.25.3 The small Training Organization may decide to use internal or external auditors or a combination of the two. In these circumstances it would be acceptable for external specialists and or qualified organizations to perform the quality audits on behalf of the Quality Manager.

D.25.4 If the independent quality audit function is being conducted by external auditors, the audit schedule should be shown in the relevant documentation.

D.25.5 Whatever arrangements are made, the Training Organization retains the ultimate responsibility for the quality system and especially the completion and follow-up of corrective actions.

# APPENDIX E
# SIMULATORS, FLIGHT TRAINING DEVICES, MOCK-UPS, DOOR TRAINERS, AND OTHER TRAINING DEVICES



## E.1 Flight Simulators and Flight Training Devices (FTDs)

Flight training equipment consists of seven levels of flight training devices, four levels of flight simulators, and the aircraft. The approved use of each item of flight training equipment is listed in the maneuvers and procedures tables. These devices and simulators are the only types of flight training equipment (other than aircraft) which may be approved for use in an ECAA approved flight training program. Before any level 1 through level 5 flight training device can be used, it must be evaluated by the FSSS inspectors to determine that it meets the prescribed requirements for the appropriate level of flight training device. Before a specific level 6 and 7 training device or any level flight simulator can be used, it must be evaluated, qualified and approved by the FSSS inspectors in accordance with ECAA Advisory Circular EAC 121-1. The following paragraphs describe the flight training devices and flight simulators applicable to Part 121 flight training. EAC 121-1 and FAA Advisory Circulars 120-40 and 120-45 (as amended) provide the qualification policy, and criteria, as well as more detailed technical descriptions of flight simulators and flight training devices. The functional descriptions in the following paragraphs provide only a brief overview. Therefore, the appropriate advisory circulars are the only authorized source documents and must be used for evaluation and approval of flight training devices and flight simulators.

**E.1.1 Simulators.** *(Refer to EAC142-ATC-1 19 C. (1))*

Qualification and approval of each flight simulator used for training, testing, checking, or currency under part 142 should be in accordance with the procedures and criteria contained in EAC 121-1 or FAA AC 120-40 (as amended). Flight simulators shall be qualified in accordance with the procedures and criteria contained in EAC 121-1 or AC 120-40 (as amended). Rotorcraft simulators shall be qualified in accordance with FAA AC 120-63 (as amended).

### E.1.1.1 Simulators Purpose

***Level A Simulator Purpose:***

To permit development and practice of the necessary skills for accomplishing flight operational tasks, to a prescribed standard of airman competency, in a specific aircraft and duty position. Level A flight simulators may be used for specified pilot recency of experience requirements and specified flight operational task training requirements in transition, upgrade, recurrent, and re-qualification training under ECAR Part 121. It may also be used for initial new hire and initial equipment training on specified events.

NOTE: Level A flight simulators comply with the technical standards specified for basic (visual) simulators in AC 120-40, as amended.

***Level B Simulators Purpose:***
To permit development and practice of the skills for accomplishing flight operational tasks, to a prescribed standard of airman competency, in a specific aircraft and duty position. Level B flight simulators may be used for pilot recency of experience requirements and for specified flight operational task training requirements in transition, upgrade, recurrent, and re-qualification training under Part 121. It may also be used for initial new hire and initial equipment training on specified events. Level B simulators may also be used to accomplish night takeoffs and landings and for landings in a proficiency check.

NOTE: Level B flight simulators comply with the technical standards specified for Phase I simulators in ECAR Part 121, Appendix H and AC 120-40, as amended.

***Level C Simulators Purpose:***
To permit development and practice of the necessary skills for accomplishing flight operational tasks, to a prescribed standard of airman competency, in a specific aircraft and duty position. Level C flight simulators may be used for pilot recency of experience requirements and for specified flight operational task training in transition, upgrade, recurrent, and re-qualification training under Part 121. It may also be used for initial new hire and initial equipment training on certain specified events. All training events may be conducted in a Level C flight simulator for persons who have previously qualified as PIC or SIC with that operator.

NOTE: Level C flight simulators comply with the technical standards specified for "Phase II simulators" in ECAR Part 121, Appendix H and AC 120-40 (as amended).

***Level D Simulators Purpose:***
To permit development and practice of the necessary skills for accomplishing flight operational tasks, to a prescribed standard of airman competency, in a specific aircraft and duty position. Level D flight simulators may be used for Parts 121 pilot currency and for all flight operational tasks training except for static aircraft training.

NOTE: Level D flight simulators comply with the technical standards specified for "Phase III simulators" in ECAR Part 121, Appendix H and AC 120-40 (as amended).

### E.1.1.2 Functional Description and Characteristics

Refer to figure E.1

FIGURE E.1
**SIMULATORS FUNCTIONAL DESCRIPTION AND CHARACTERISTICS**

| **FLIGHT SIMULATORS** | | | | |
|---|---|---|---|---|
| Functional Description And Characteristics | LEVEL | | | |
| | A | B | C | D |
| Systems representations, switches, and controls, which are required by the type design of the aircraft and by the user's approved training program. | • | • | • | • |
| *Systems which respond appropriately and accurately to the switches and controls of the aircraft being simulated.* | • | • | • | • |
| Full-scale replica of the cockpit of the aircraft being simulated. | • | • | • | • |
| Correct simulation of the aerodynamic characteristics of the aircraft being simulated. | • | | | |
| Correct simulation of the aerodynamic (including ground effect) and ground dynamic characteristics of the being simulated. | | • | • | • |
| Correct simulation of the effects of selected environmental conditions, which the simulated aircraft might encounter. | • | • | • | |
| Correct and realistic simulation of the effects of environmental conditions which the aircraft might encounter. | | | | • |

| | | | | |
|---|---|---|---|---|
| Correct simulation of selected environmentally affected aerodynamic and ground dynamic characteristics of the aircraft being simulated considering the full range of its flight envelope in all approved configurations. | | | | • |
| Control forces and travel, which correspond to the aircraft. | • | • | | |
| Control forces, dynamics, and travel, which correspond to the aircraft. | | | • | • |
| Instructor controls and seat. | • | • | • | • |
| At least a night visual system with the minimum of a 45° horizontal by 30° vertical field of view for each pilot station. | • | • | | |
| At least a night and dusk visual system with a minimum of a 75°horizontal by 30° vertical field of view for each pilot station. | | | • | |
| A daylight, dusk, and night visual system with the minimum of a 75 ° horizontal by 30 ° vertical field of view for each pilot station. | | | | • |
| A motion system with at least 3 degrees of freedom. | • | • | | |
| A motion system with at least 6 degrees of freedom. | | | • | • |

**E.1.2 Flight Training Devices (FTD's).** *(Refer to EAC142-ATC-1 19 C. (1))*
Qualification and approval of each FTD used for training, testing, checking, or currency under part 142 should be obtained as follows:
Level 6 and 7 FTD's must be qualified by the FSSS inspectors. Level 6 and 7 FTD'S shall be qualified in accordance with the procedures and criteria contained in EAC 121-1 or FAA AC 120-45 (as amended). Rotorcraft FTD'S shall be qualified in accordance with FAA AC 120-63 (as amended).
Levels 1 through 5 FTD'S shall be qualified and approved for their intended use by the FSSS inspectors in accordance with the procedures and criteria contained in EAC 121-1 or FAA AC 120-45 (as amended).

NOTE: The functional and technical descriptions for the first three levels of flight training devices are presently under development and are not applicable to Part 121 flight training.

**E.1.2.1 FTD Purpose**

***Level 4 FTD Purpose:***
To permit learning, development, and the practice of skills and cockpit procedures necessary for understanding and operating the integrated systems of a specific aircraft.

***Level 5 FTD Purpose:***
To permit learning, development, and the practice of skills, cockpit procedures, and instrument flight procedures necessary for understanding and operating the integrated systems of a specific aircraft in typical flight operations in real time.

***Level 6 FTD Purpose:***
(1) To permit learning, development, and the practice of skills in cockpit procedures, instrument flight procedures, certain symmetrical maneuvers and flight characteristics necessary for operating the integrated systems of a specific aircraft in typical flight operations.

(2) To permit the use of previously approved non-visual simulators and the continued use of Level 6 and 7 flight training devices (formerly known as advanced training devices (ATD)).

*NOTE: Non-visual simulators are categorized with level 6 training devices.*

***Level 7 FTD Purpose:***

To permit learning, development, and the practice of skills in cockpit procedures, instrument flight procedures and maneuvers, and flight characteristics necessary for operating the integrated systems of a specific aircraft in typical flight operations.

### E.1.2.2 Functional Description, Characteristics and Components:

Refer to figure E.2

FIGURE E.2
**FTD'S FUNCTIONAL DESCRIPTION, CHARACTERISTICS AND COMPONENTS**

| **FLIGHT TRAINING DEVICES (FTDs)** | | | | |
|---|---|---|---|---|
| Functional Description, Characteristics and Components | LEVEL | | | |
| | 4 | 5 | 6 | 7 |
| A replica of the flight deck panels, switches, controls, and instruments, in proper relationship, to represent the aircraft for which training is to be accomplished. | • | • | • | |
| Full-scale replica of the cockpit of the aircraft being simulated. | | | | • |
| Systems indications which respond appropriately to switches and controls which are required to be installed for the training or checking to be accomplished. | • | • | • | |
| Systems representations, switches, and controls which are required by the type design of the aircraft and by the approved training program. | | | | • |
| Systems which respond appropriately and accurately to the switches and controls of the aircraft being simulated. | | | | • |
| Air/ground logic (however, simulated aerodynamic capabilities are not required) | • | | | |
| Air/ground logic | | • | • | • |
| Simulated aerodynamic capabilities representative of the aircraft group or class. | | • | | |
| Simulated aerodynamic capabilities which closely represent the specific aircraft in ground and flight operations | | | • | |
| Correct simulation of the aerodynamic and ground dynamic characteristics of the aircraft being simulated. | | | | • |
| Correct simulation of the effects of selected environmental conditions which the simulated aircraft might encounter. | | | | • |
| Functional flight and navigational controls, displays, and instrumentation. | | • | • | • |
| Control forces and control travel of sufficient precision for manually flying an instrument approach. | | • | | |
| Control forces and control travel which correspond to the aircraft. | | | • | |
| Control forces, dynamics, and travel which correspond to the aircraft. | | | | • |
| Instructor controls | | | • | |
| Instructor seat and controls | | | | • |
| | | | | |

NOTE: The functional and technical descriptions for the first three levels of flight training devices are presently under development and are not applicable to Part 121 flight training.

### E.2 Mock-Ups, Door Trainers, and Other Training devices.

**E.2.1** ECAR Part 121 requires that cabin crew (CABIN CREW)s acquire operating experience (OE). This OE must be gained after satisfactory completion of the appropriate training and must be acquired during operations conducted under part 121. Operating

experience is required in order for CABIN CREWs to become fully qualified to serve in operations conducted under part 121. Operating experience gives the operator the opportunity to familiarize qualifying CABIN CREWs with aircraft sounds and maneuvers associated with routine flight operations, emphasizing the normal time sequences available during flight, and provide the qualifying CABIN CREW trainee with practical experience in the performance of routine duties and procedures. Operating experience also provides the operator with the chance to ensure that the CABIN CREW is able to properly apply the lessons learned during **basic indoctrination and initial training.** Operating experience also gives the operator the opportunity to ensure that the trainee has the capabilities to qualify for CABIN CREW assignment of duties during a flight.

A. Operating experience must be gained after satisfactory completion of the appropriate training which includes **basic indoctrination and initial training** on the aircraft.

B. Cabin crew who have completed OE on any passenger-carrying airplane operated under part 121 are exempt from completing OE at another part 121 operator, only if the CABIN CREW is to serve in the same group of airplanes, and the certificate holder shows that the CABIN CREW has received sufficient training for the airplane in which the CABIN CREW is to serve. In order for the CABIN CREW to receive credit for OE, the certificate holder seeking this credit should have complete training records which clearly show the correct amount of OE time, the airplane type, and the number of hours or OE on each airplane type. If there is a reduction of OE time on the actual aircraft, then the reason for the reduction should also be part of the record. The ECAA inspector shall ensure that the training records are correct.

C. When an operator uses Group I and Group II airplanes, qualifying CABIN CREWs shall receive OE on one type of airplane from each group. However, the combine OE time for both airplane groups would be 5 hours. Operators should ensure that OE time is divided equally between the two groups. The two groups of airplanes are: (1) Group I-Propeller driven, including reciprocating powered and turbo propeller powered; and
(2) Group II-Turbojet powered aircraft.

D. Operators should give OE during operations conducted under part 121 on passenger-carrying, revenue flights; these flights must be representative of the operator's typical route and schedule structure. When possible these flights should consist of at least two takeoffs and landings.

E. Following completion of OE, the CABIN CREW trainees should participate in a debriefing, including a discussion of the safety duties they observed. As a minimum, the debriefing should include discussion of any check or use of emergency equipment, the passenger information briefings, passenger seat belt discipline, application of the carry-on baggage rule, crew coordination, and any unusual passenger handling situations.

F. Qualifying CABIN CREWs obtaining OE shall be assigned to the flight as a member of the cabin crew, but must be in excess of the minimum number of fully qualified CABIN CREWs (as listed in the operator's operations manual). Qualifying CABIN CREWs obtaining OE should not occupy a required CABIN CREW seat. A required CABIN CREW seat is established when the operator conducts its partial evacuation demonstration to obtain its operating certificate for that airplane. Section 121.291 stipulates that an operator must perform a partial emergency evacuation demonstration in order to change the location of a CABIN CREW's duty station.

G. Qualifying CABIN CREWs receiving OE may not be assigned as a required crew member. However, qualifying CABIN CREWs obtaining OE should have the opportunity to practice all CABIN CREW duties while being supervised by an OE supervisor. Air carriers which operate aircraft having a requirement for one CABIN CREW, and are equipped with one CABIN CREW seat should consider having programs which provide (under supervision) the opportunity for newly qualified CABIN CREWs who have completed OE, to perform the duties of an CABIN CREW from the required CABIN CREW jump seat.

H. Some operators schedule large numbers of CABIN CREW trainees on flights to satisfy OE requirements. The number of trainees on a single flight often exceeds the number of fully qualified CABIN CREWs required by section 121.391. Operators that schedule an excessive number of qualifying CABIN CREWs for OE create an unrealistic environment. The number of qualifying CABIN CREWs receiving OE should not

exceed the number of CABIN CREWs required by section 121.391, plus any additional, fully qualified CABIN CREWs that may be scheduled for that particular flight. These additional positions should be those that are listed in the operator's CABIN CREW handbook as additional CABIN CREW positions with assigned duties. For example, the aircraft may have a requirement for three CABIN CREWs and the operator has provisions to assign a fourth CABIN CREW. The safety duties of this CABIN CREW must be listed in the CABIN CREW manual. In this example four qualifying CABIN CREWs obtaining OE should be scheduled.

I. The regulations pertinent to OE require that qualifying CABIN CREWs obtain OE to perform the assigned duties of an CABIN CREW under the supervision of a supervisor qualified as an CABIN CREW under part 121. The operator should designate the people permitted to perform this supervisory function. The supervising individuals must be experienced in the duties and responsibilities of the CABIN CREW and qualified to instruct and evaluate CABIN CREW trainees. These supervising individuals should be provided with additional training and/or guidance regarding conduct of OE flights. The supervisors must be qualified on the airplane type. Information about qualified supervisors who can give OE should be included in the Egyptian Civil Aviation Authorities (ECAA) approved training program for each operator. The program should also include a description of the additional training and/or guidance which was given to these individuals.

J. New operators or operators which introduce new airplanes are unique in that there are no fully qualified CABIN CREWs. Such carriers should staff an initial cadre of CABIN CREWs to act as supervisors while giving each other OE. Such operators should conduct initial cadre CABIN CREW OE during the airplane proving flights or ferry flights. The number of qualifying CABIN CREWs who receive OE on proving runs or ferry flights should not exceed the number of CABIN CREW who are assigned duties as listed in that air carrier's CABIN CREW manual for that airplane; in accordance with the information provided in this appendix. Qualifying CABIN CREWs who receive OE during the proving tests or ferry flights should be used to supervise other qualifying CABIN CREWs obtaining OE during scheduled operations.

K. A full 5 hours of OE must be given. **However, the amount of OE given on an aircraft may be reduced.** When a reduction of aircraft OE time is granted, the time on the aircraft plus time spent practicing operations in an approved cabin mock-up should equal at least 5 hours. The OE time in the cabin mock-up could be spent performing duties such as; use of the Public Address system, pre-flight briefings, safety announcements, and exit row seating and carry on baggage procedures. Operating experience on the aircraft may be reduced from 5 hours to 2.5 hours if the ECAA inspector determines that the operator has cabin mock-ups and door training devices which provide the quality of experience that is needed to simulate an actual flight. A full reduction to 2.5 hours of OE on the airplane should be granted when the operator is equipped with a Level 5 cabin mock-up (Figure E.3) and the ECAA inspector determines the rest of the training program is of sufficient quality. Reductions should be based on the quality of the cabin mock-ups (Figure E.3).

(1) The full scale cabin mock-ups and door training devices are evaluated and approved by the ECAA inspector as part of the operator's CABIN CREW training program. Approval of cabin mock-ups and door training devices is concurrent with approval of the entire training program for CABIN CREWs. The cabin mock-ups and door training devices must be listed in the operator's training program. If the operator chooses to use a static aircraft as a training device, it must also be listed in the operators training program. If an operator uses an actual airplane for training, the ECAA inspector should evaluate the training that is given in the airplane before allowing credit. The students should actually use the equipment and practice procedures normally expected of a required CABIN CREW during a flight. This is also the type of practice which should be performed in cabin mock-ups and door training devices.

(2) The principle purpose of cabin mock-ups and door training devices is to provide realism during training for emergency situations. The ECAA inspector must evaluate the operator's training program to determine that the procedures (i.e., amount of time, realistic in-flight scenarios, and practice) are accomplished in the cabin mock-ups and through the use of other training devices, in order to approve a

reduction in OE time. The ECAA inspector shall provide documentation of the reasons for reducing the OE hours on the airplane.

(3) Cabin mock-ups and door training devices have been assigned levels in accordance with their approximation to realism. Level 1 is the most basic and operators receive less credit for a Level 1 mock-up than they would for a Level 5 device. In order to get credit for a Level 5 mock-up, all of the characteristics listed in Figure E.3 must be present. Figures E.4 and E.5 provide information to the ECAA inspector, to be used when establishing the amount of credit which can be given based on the characteristics of training devices.

L. Substitution of times listed under additional training devices for requirements within a level may be subject to individual equipment evaluation by the ECAA inspector. The ECAA inspector may determine that an operator receives the full credit of 2.5 hours based on the cabin mock-up alone, only if an operator has a cabin training device which meets all the criteria for Level 5 listed in the mock-up chart. However, if the operator does not have all the characteristics listed in figure E.1, the ECAA inspector should look at the other characteristics which are listed in figures E.2 and E.3 to decide what level of reduction is appropriate for the type of experience which may be gained in the operator's cabin mock-up and door training device.

**E.2.2** ECAA inspectors shall ensure that their assigned certificate holders are aware of the information in this appendix, adopt the procedures outlined, and include this information in the appropriate manuals.

**FIGURE E.3**
**GUIDANCE FOR EVALUATION OF A FULL SCALE (EXCEPT FOR LENGTH) CABIN MOCK-UP**

| Levels | 1 | 2 | 3 | 4 | 5 | | Comments |
|---|---|---|---|---|---|---|---|
| Cabin Mock-up | | | | | X | X | Level 5 requires 4 way axis |
| Motion | X | X | X | X | X | In cross section | |
| Operable Exits | X | X | X | X | X | Must meet requirements for door (exit) trainer | |
| Exit Failure/Blocked | | | | | X | X | |
| Emergency Equipment brackets Placement | | | | X | X | X | Closely approximates and Equipment Placement |
| Smoke/Fire Simulation | | | | | X | X | Level 5 requires smoke |
| Communication System | | | | | | | detector alarms |
| (Inter-phone/PA) stations, call lights | | X | X | X | X | X | Interactive between Levels 4 and 5 have |
| Aircraft Sound Simulation | | | | | X | X | |
| CABIN CREW Jump seats belt/shoulder | | | X | X | X | X | X Operable seat harness |
| Decompression Simulation | | | X | X | X | Oxygen masks deploy from PSU. Level 5 requires crew O2 | |
| Emergency Lights | | | | | X | Level 5 requires escape path lighting and emergency light | |
| | | | | | | switch | |
| Operable Galley Equipment | | | X | X | X | Levels 3-5 require actual galley components | |
| Evacuation Alarm/Signal | | | | | | X | |

**FIGURE E.4**
**EVALUATION OF (EXIT) DOOR TRAINERS**

| Door (Exit) Trainer | Comments |
|---|---|
| Door/Exit Scale | Size/weight, modeled after the actual door handles |
| Exit Motion | Duplicates full aircraft range to include opening, closing, and emergency operation |
| Exit Failure | Method of showing failure |
| CABIN CREW Seat/Restraint | Actual location on aircraft |
| CABIN CREW Panel | Correct proximity to exit and CABIN CREW seat |
| Simulated Slide or emergency Slide/Raft Pack | Forces which approximate forces needed to open in an situation |
| Manual Inflation Means | Can be moved around to simulate differing locations caused by an accident |
| Window Exit | Actual weight and size |

**FIGURE E.5**
**EVALUATION OF OTHER TRAINING DEVICES**

| Other Trainers/Simulators | Comments |
|---|---|
| Fire Fighting Simulator | Equipment must have a way to show that the fire is extinguished |
| Inter-phone/PA System | Approximation to the actual working equipment on the airplane |
| Computer Evacuation Simulator | Accuracy and complexity of computer models |
| Actual Function Brackets and Portable Emergency Equipment | Forces necessary to remove and replace equipment accurately represented |
| CABIN CREW Seats Equipped with use system (for example Actual Restraints jump seat or when the jump seat is | Actual restraint system, actual room to two people on a double located in a confined area) |
| Equipment to Simulate and/or Decompression | Ability to automatically and manually deploy masks simulate signs of decompression (i.e., noise and vapor) |
| Additional Computer Based Training Safety Programs | Adequacy of Program |

# APPENDIX F

# CERTIFICATION FORMS AND JOB AIDS

# CERTIFICATION SCHEDULE OF EVENTS FORM

**EGYPTIAN CIVIL AVIATION AUTHORITY FLIGHT OPERATIONS CENTRAL**
**Flight Safety Standards Sector (FSSS) ADMINSTRATION (FOCA)**

## SCHEDULE OF EVENTS

| **PART 142 TRAINING CENTER SCHEDULE OF EVENTS - CERTIFICATION** | | | | |
|---|---|---|---|---|
| **OFFICIAL NAME OF CENTER:** EgyptAir Specific Technical Training Center | | **LOCATION ADDRESS: Training Complex Cairo International Airport** | | |
| **MAILING ADDRESS** (if different from location) | | **PRECERTIFICATION NO.** | | |
| **Scheduled date of Submission, Demonstration, or inspection** | | **Date Received/ Accomplished** | **Date Returned for Changes** | **Date Approved / Accepted** |
| **FORMAL APPLICATION PHASE** | | | | |
| | Formal Application Letter. | | | |
| | Schedule of Events. | | | |
| | Initial Statement Of Compliance (ISOC). | | | |
| | Organization Structure. | | | |
| | Management Qualifications Resumes. | | | |
| | Copy of purchase or lease contracts of flight training equipment (simulators and FTD's). | | | |
| | Proposed training courses (courses list) | | | |
| | Instructors and evaluators list. | | | |
| | Proposed authorization for evaluators. | | | |
| | Actual flight training (if any). | | | |
| | A description of the training facilities, equipment, and qualifications of personnel to be used. | | | |
| | Curriculums , including syllabuses, outlines, courseware, procedures, and documentation to support the proposed course. | | | |
| | Proposed evaluation plans. | | | |
| | Description of the recordkeeping system. | | | |
| | Description of the quality control measures. | | | |
| | Training Agreements (if any). | | | |

**EGYPTIAN CIVIL AVIATION AUTHORITY** **FLIGHT OPERATIONS CENTRAL**
**Flight Safety Standards Sector (FSSS)** **ADMINSTRATION (FOCA)**

**SCHEDULE OF EVENTS (CONTINUED)**

| **PART 142 TRAINING CENTER SCHEDULE OF EVENTS - CERTIFICATION** | | | | |
|---|---|---|---|---|
| **Scheduled date of Submission, Demonstration, or inspection** | | **Date Received/ Accomplished** | **Date Returned for Changes** | **Date Approved/ Accepted** |
| **FORMAL APPLICATION PHASE (CONTINUED)** | | | | |
| | Policy & Procedure Manual (Training Exposition Manual) | | | |
| | MEL's / CIG's | | | |
| | Quality Manual. | | | |
| | | | | |
| | | | | |

**EGYPTIAN CIVIL AVIATION AUTHORITY** **FLIGHT OPERATIONS CENTRAL**
**Flight Safety Standards Sector (FSSS)** **ADMINSTRATION (FOCA)**

**SCHEDULE OF EVENTS (CONTINUED)**

| **PART 142 TRAINING CENTER SCHEDULE OF EVENTS - CERTIFICATION** | | | | |
|---|---|---|---|---|
| **Scheduled date of Submission, Demonstration, or inspection** | | **Date Received/ Accomplished** | **Date Returned for Changes** | **Date Approved/ Accepted** |
| **DOCUMENT COMPLIANCE PHASE** | | | | |
| | Management qualifications Resumes. | | | |
| | Policy & Procedure Manual (Training Exposition Manual) | | | |
| | Initial Statement of Compliance (ISOC) | | | |

| | | | | |
|---|---|---|---|---|
| | Training Curriculums (core or specialty or both)<br>-Basic Indoctrination<br>-Initial<br>-Transition/Upgrade<br>-Recurrent<br>-Differences<br>-Ground Instructors<br>-Flight Instructors<br>-Hazardous Materials<br>-Security<br>-Ground Handling/Servicing | | | |
| | Training Programs<br>-Curriculums (as above) and courses list.<br>-Courseware ( syllabuses, computer programs, audio-visual programs, flight event descriptions, aircraft operating manuals, workbooks, checklists, and handouts.)<br>-Facilities<br>-Flight Training Equipment (simulators, FTDs….etc.)<br>-Training Aids (projectors, computers for CBT,….etc)<br>-Instructors and evaluators (list and qualifications) | | | |
| | Evaluation Plan | | | |
| | Quality Manual | | | |
| | MEL's/CIG's | | | |
| | Lease/Contract Agreements | | | |
| | Training Agreements | | | |

CERTIFICATION JOB AIDS

**EGYPTIAN CIVIL AVIATION AUTHORITY FLIGHT OPERATIONS CENTRAL**
**Flight Safety Standards Sector (FSSS) ADMINSTRATION (FOCA)**

**TRAINING CENTER CERTIFICATION JOB AID**
**ECAR PART 142**

| FSSS 1000 | ACA 1100 | FOCA 1200 | I. PRE-APPLICATION PHASE | INSP. INITIAL | DATE RCVD. | REF. |
|---|---|---|---|---|---|---|
| | NAME OF APPLICANT: | | | | | |
| | **INITIAL ORIENTATION : INSPECTOR** _____<br>PRESENTATION.<br>CERTIFICATION ADVISORY CIRCULAR PROVIDED.<br>PREAPPLICATION LETTER OF INTENT (PLI): _____<br>Forwarded to FSSS office<br>b. Pre-certification number | | | | | |
| | **B. CERTIFICATION TEAM DESIGNATED** ( one<br>operations and one flight inspector, should be available).<br>**Name** **Specialty**<br>_____ _____<br>**CPM** _____ | | | | | |
| | **CONDUCT PREAPPLICATION MEETING**<br>VERIFY **PLI** INFORMATION<br>ADVISE ELEMENTS OF FORMAL APPLICATION<br>OVERVIEW OF CERTIFICATION PROCESS<br>PROVIDE CERTIFICATION PACKAGE<br>Certification Job Aid<br>Schedule of Events<br>Advisory Circular Checklist<br>Operations Specifications data sheet<br>Other applicable publications and documents<br>EXPLAIN FORMAL APPLICATION SUBMISSION<br>ADVISE APPLICANT TO SUBMIT FORMAL APPLICATION AS FAR IN ADVANCE AS POSSIBLE. | | | | | |
| **REMARKS:** | | | | | | |

**EGYPTIAN CIVIL AVIATION AUTHORITY FLIGHT OPERATIONS CENTRAL**
**Flight Safety Standards Sector (FSSS) ADMINSTRATION (FOCA)**

**TRAINING CENTER CERTIFICATION JOB AID**
**ECAR PART 142**

| FSSS 1000 | II. FORMAL APPLICATION PHASE | INSP. INITIAL | DATE RCVD. | REF. |
|---|---|---|---|---|
| | REVIEW APPLICANT'S SUBMISSIONS | | | |
| | **1. FORMAL APPLICATION LETTER** | | | |
| | a. Full official name (legal). | | | |
| | b. Mailing address and telephone/fax. | | | |
| | c. Locations where training shall be conducted. | | | |
| | d. Starting date. | | | |
| | e. Key management personnel names and a statement acknowledging that the applicant shall notify the FSSS within 10 working days of any change made in the assignment of persons in the required management positions. | | | |
| | **2. FORMAL APPLICATION ATTACHMENTS** | | | |
| | a. ECASA FORM FSSS-1000-ATC-142 (completed) | | | |
| | b. Schedule of events | | | |
| | c. Initial Statement Of Compliance (ISOC) | | | |
| | d. Organization Structure | | | |
| | e. A management qualifications resumes. | | | |
| | f. Copy of purchase or lease contracts of flight training equipment (simulators and FTDs). | | | |
| | g. Proposed training courses (courses list) | | | |
| | h. Instructors and evaluators list. | | | |
| | i. Proposed authorization for evaluators. | | | |
| | j. Actual flight training (if any) | | | |
| | k. A description of the applicant's training facilities, equipment, and qualifications of personnel to be used. | | | |
| | l. Curriculums , including syllabuses, outlines, courseware, procedures, and documentation to support the proposed course. | | | |
| | m. Proposed evaluation plans. | | | |
| | n. Description of the recordkeeping system. | | | |
| | o. Description of the quality control measures. | | | |
| | p. Training Agreements (if any). | | | |
| | EVALUATE ECASA RESOURCE CAPABILITY BASED ON SCHEDULE OF EVENTS. | | | |
| **REMARKS:** | | | | |

**EGYPTIAN CIVIL AVIATION AUTHORITY** **FLIGHT OPERATIONS CENTRAL**
**Flight Safety Standards Sector (FSSS)** **ADMINSTRATION (FOCA)**

**TRAINING CENTER CERTIFICATION JOB AID**
**ECAR PART 142**

| FSSS 1000 | II. FORMAL APPLICATION PHASE (CONT.) | INSP. INITIAL | DATE | REF. |
|---|---|---|---|---|
| | C. FORMAL APPLICATION MEETING<br><br>1. SCHEDULE MEETING Date: Time:<br>2. DISCUSS EACH SUBMISSION.<br>3. RESOLVE DISCRIPANCIES/OPEN ITEMS.<br>4. REVIEW CERTIFICATION PROCESS.<br>5. REVIEW IMPACT IF SCHEDULE OF EVENTS IS NOT MET. | | | |
| | D. ISSUE LETTER ACCCEPTING/REJECTING APPLICATION. | | | |
| **REMARKS:**<br>*Formal application meeting conducted by head of FSSS(ECASA)*<br>Meeting attended by:<br>*Conclusion: Submitted documents reviewed and letter of acceptance / rejection shall follow.* | | | | |

**EGYPTIAN CIVIL AVIATION AUTHORITY** **FLIGHT OPERATIONS CENTRAL**
**Flight Safety Standards Sector (FSSS)** **ADMINSTRATION (FOCA)**

**TRAINING CENTER CERTIFICATION JOB AID**
**ECAR PART 142**

| FSSS 1000 | III. DOCUMENT COMPLIANCE PHASE | INSP. INITIAL | DATE RET'D | DATE RESUB | DATE ACCEP | REF. |
|---|---|---|---|---|---|---|
| | A. EVALUATE MANAGEMENT PERSONNEL RESUMES. | | | | | |
| | B. EVALUATE TRAINING PROGRAMS. | | | | | |
| | C. EAVLUATE APPLICABLE MANUALS OR PROCEDURES: | | | | | |
| | 1. Policy and Procedures Manual. | | | | | |
| | 2. MEL's / GIC's. | | | | | |
| | 3. Quality Manual. | | | | | |
| | D. EVALUATE LEASE/CONTRACT AGREEMENTS. | | | | | |
| | E. EVALUATE TRAINING AGEEMENTS. | | | | | |
| **REMARKS:** | | | | | | |

**EGYPTIAN CIVIL AVIATION AUTHORITY** **FLIGHT OPERATIONS CENTRAL**
**Flight Safety Standards Sector (FSSS)** **ADMINSTRATION (FOCA)**

**TRAINING CENTER CERTIFICATION JOB AID**
**ECAR PART 142**

| FSSS 1000 | IV. DEMONSTRATION & INSPECTION PHASE | INSP. INITIAL | DATE RET'D | DATE RESUB | DATE ACCEP | REF. |
|---|---|---|---|---|---|---|
| | A. AIRMEN TESTING. | | | | | |
| | B. TRAINING CENTER FACILITIES. | | | | | |
| | C. FLIGHT SIMULATORS & FTDs CONFORMITY INSPECTION. | | | | | |
| | D. AIRCRAFT, FLIGHT SIMULATORS, AND FTDs MAINTENANCE PROGRAMS. | | | | | |
| | E. RECORD KEEPING SYSTEM: | | | | | |
| | 1. Crewmembers. | | | | | |
| | 2. Instructors and Evaluators. | | | | | |
| | 3. Others. | | | | | |
| | F. TRAINING (Initial Cadre of Instructors). | | | | | |
| | G. EVALUATORS PROFICIENCY CHECKS AND TRAINING. | | | | | |
| **REMARKS:** | | | | | | |

## TRAINING CENTER CERTIFICATION JOB AID
## ECAR PART 142

| FSSS 1000 | V. CERTIFICATION PHASE | INSP. INITIAL | DATE COMPLETED |
|---|---|---|---|
| | A. OBTAIN FINAL CERTIFICATE NUMBER. | | |
| | B. PREPARE AND APPROVE TRAINING SPECIFICATIONS. | | |
| | C. PRESENT CERTIFICATE AND TRAINING SPECIFICATIONS TO CERTIFICATE HOLDER. | | |
| | D. PREPARE CERTIFICATION REPORT: | | |
| | **1. ASSEMBLE REPORT** | | |
| | a. Reapplication Letter of Intent. | | |
| | b. Certification Job Aid. | | |
| | c. Formal Application Letter. | | |
| | d. Schedule of Events. | | |
| | e. Final Compliance Statement. | | |
| | f. Copy of Training Specifications. | | |
| | g. Copy of the Certificate. | | |
| | h. Copies of all ECASA-approved materials used in the training programs such as curriculums, SCIG's, MEL's, and pilot operating manual (POM). | | |
| | i. Summary of Difficulties. | | |
| | j. Suggestions to Improve Certification Process. | | |
| | **2. DISTRIBUTE REPORT** | | |
| **REMARKS:** | | | |
| | E. DEVELOP POST CERTIFICATION SURVEILLANCE PROGRAM: | | |
| | 1. Within the FSSS, ACA, and FOCA area. | | |
| | 2. Outside the FSSS, ACA, and FOCA area. | | |
| **REMARKS:** | | | |

CERTIFICATION REPORT CONTENTS

*Arab Republic Of Egypt*
*Ministry of Transportation*
*Egyptian Civil Aviation Supervisory Authority*

جمهورية مصر العربية
وزارة النقل
الهيئة المصرية للرقابة على الطيران المدني

**XYZ AIRLINES**
**AVIATION TRAINING CENTER**

## AVIATION TRAINING CENTER CERTIFICATION REPORT UNDER ECAR PART 142

### CERTIFICATION REPORT CONTENTS

1- Preapplication Letter of Intent (PLI).
2- Certification Job Aid (JA).
3- Formal Application Letter.
4- Schedule of Events.
5- Final Compliance Statement.
6- Copy of Training Specifications (TrnSpecs) – on electronic storage media.
7- Copy of the Certificate.
8- Copies of all ECASA-approved materials used in the training programs such as curriculums, SCIG's, MEL's, and pilot operating manuals (POM).
9- Summary of Difficulties.

A summary of major difficulties experienced during the certification process and/or any recommendations that may enhance the process must be noted by phase. Summaries of major difficulties and/or recommendations should be arranged as follows:

(1) Pre-application Phase.
Include summaries of difficulties or recommendations.
(2) Formal Application Phase.
Include summaries of difficulties or recommendations.
(3) Document Compliance Phase.
Include summaries of difficulties or recommendations.
(4) Demonstration and Inspection Phase.
Include summaries of difficulties or recommendations.

10- Suggestions to Improve Certification Process.

### CERTIFICATION REPORT DISTRIBUTION

The report will be maintained in the permanent file relating to the new certificate holder during the business life of the certificate holder.

# APPENDIX G

## DIFFERENCES TRAINING
## ALL TRAINING CATEGORIES



### G.1 General
This section contains information, direction, and guidance to be used by inspectors when evaluating an operator's differences training program in all categories of training.

### G.2 Background
Due to differences in instrumentation and installed equipment, the skills and knowledge required to operate two aircraft of the same make and model can differ. The range of differences between variations of a basic aircraft model has become extremely wide in recent years with the introduction of computerized guidance systems, electronic instrument displays, and two crewmember cockpit crews. Crewmembers trained on one variant of an aircraft may require additional training to safely and efficiently operate other variants of that aircraft. Parts 121 require that operators conduct "differences" training in all categories of training when the crewmember is authorized to serve on more than one variant of an aircraft.

### G.3 Terminology
The following terminology is defined as it applies to differences training:

**** Base Aircraft:***
The aircraft or group of aircraft designated by the operator for use as a reference to compare differences with other aircraft within the operator's fleet. This comparison of differences between aircraft is for items that affect, or could affect, flight crew knowledge, skills, or abilities pertinent to flight safety. Operators designate base aircraft by the airline tail number (such as "aircraft 801 - 820"), the make/model/series (such as "A320-200"), and/or other classifications which can uniquely distinguish between the operator's different aircraft pertaining to the different configurations, handling characteristics, performance procedures, limitations, controls, instruments, indicators, systems, equipment, options or modifications. A base aircraft may either be a single aircraft or a group of aircraft with the same features and may be re-designated at the discretion of the operator. Base aircraft are typically those aircraft within a fleet which the flight crews are first trained in, which the airline has the most number of, or which represent a target configuration for the operator to eventually use as a standard.

* ***Variant Aircraft:***
An aircraft or a group of aircraft with the same features, that have pertinent differences from a base aircraft. Pertinent differences are those which could affect flight safety. Typical pertinent differences are those relating to configuration, handling qualities, performance, procedures, limitations, controls, instruments, indicators, systems, equipment, options, or modifications. Variants exist within a model or series, due to differences in installed equipment. For example, a B737-200 ADV with a performance data computer system, Omega, SP-177 auto-pilot, dual cue flight director, and auto-land is a different variant than another B737-200 ADV with a single cue flight director, SP-77 auto-pilot, and basic

VOR/DME navigation equipment. An operator may have a number of variants, in addition to a base aircraft within a fleet.

**G.4 Methods For Accounting For Differences**

There are several acceptable methods operators may use to account for differences. Inspectors should be knowledgeable of the following acceptable methods.

***A. Standardized Configurations.*** The simplest and most traditional method for operators to use when dealing with differences is to avoid them by installing common instruments and equipment in each aircraft in the fleet.

***B. Separate Fleets.*** Some operators treat variants of an aircraft as if they were different aircraft by developing separate curriculums for each variant and by scheduling crewmembers to operate only that variant of aircraft on which they have been trained.

***C. Integrated Training.*** An operator can conduct differences training as an integral part of each of the six defined categories of training. When the operator chooses to use this method, ECASA inspectors must ensure that an analysis of the differences between the variants of aircraft in the operator's fleet has been made and that instructional elements have been provided in each curriculum segment to account for the identified differences. ECASA inspectors may approve this method when systems differences between the aircraft are minor, procedural differences are minor, and flight training is not required. Approval of integrated differences training is accomplished in conjunction with the approval of the curriculum of which it is a part. When the operator chooses this method, a differences evaluation should be submitted as supporting documentation for the initial curriculum outline.

***D. Separate Differences Curriculum Segments.*** The operator may choose to limit instruction throughout a curriculum to one specific "base" aircraft and then conduct training as to the differences present in variations of the aircraft as a separate and distinct curriculum segment. For example, an operator might designate the 100 series aircraft as the base aircraft in a B-737 transition course. Ground, integration, flight, and qualification curriculum segments would be based on this aircraft. At an appropriate point in the instruction, a distinct segment of training would be presented to cover differences in the 200, 300, or 400 series aircraft. This method is advantageous when the operator operates numerous variants of an aircraft.

**G.5 Specific Situations Requiring Differences Training**

Inspectors should be knowledgeable in the several situations in which differences training may be required, as follows:

***A.*** When an operator contracts for training from another party or conducts training in a leased simulator or aircraft having instrumentation or equipment different from the aircraft operated by the operator

***B.*** When an operator generates a need for differences training by introducing a variation of an aircraft into an existing fleet or by creating a variant aircraft by modifying one or more aircraft in the fleet

***C.*** When airline mergers and acquisitions generate the need for fleets to be merged in operations

**G.6 Differences Evaluation**

Differences training must be based on an accurate analysis of the differences in systems, equipment, and operating procedures of the aircraft involved. An operator preparing a training program must submit a difference analysis conducted by the operator or other qualified party (such as a manufacturer or another operator). The analysis may take any form as long as it accurately identifies all differences, which are significant to the operator's crewmembers. One acceptable way of constructing a differences analysis, but not the only means, is to construct a curriculum outline for the base aircraft and to identify each curriculum item in which there is a difference.

**DIFFERENCES EVALUATION WORKSHEET**

| BASE AIRCRAFT | VARIANT AIRCRAFT |
|---|---|
| **Aircraft Systems Subject Areas** | |
| Hydraulic Systems | |
| * Pumps | Pneumatic pump deleted |
| | Electric pump added |
| * Supply | Same |
| * System A components | Same |
| * System B components | Yaw damper added |
| * RAT | Deleted |
| * Limitations | Electrical pump time |
| | Yaw damper off below 100' |
| Electrical System Module | Same |
| Air Conditioning Module | Same |
| Etc. | |
| **Systems Integration Subject Areas** | |
| Normal Procedures Module | |
| * Loran Receiver | Deleted |
| * INS Operation | New procedures |
| Non-normal Procedures Module: | |
| Hydraulic systems | Contain differences |
| * Fluid Loss Procedure | Same |
| * Pump Failure | Different |
| * Fluid Overheat | Same |
| * Electrical System | Same |
| Etc. | |
| **Flight Training Subject Areas** | |
| Normal Procedures | Contain Differences |
| Preflight | Contains Differences |
| No-Flap Approach | Contains Differences |
| Emergency Procedures | Contain Differences |
| Pressurization Loss | Same |
| Engine-Out Approach | Contain Differences |
| Etc. | |

Figure 1
EXAMPLE OF DIFFERENCES WORKSHEET

**G.7 Degrees Of Differences**

ECASA inspectors must ensure that the methods and devices used to conduct differences training are appropriate to the degree of difference between the base aircraft and the variant aircraft. For purposes of describing degrees of difference and for defining acceptable training methods, five levels of differences have been defined (Levels A - E).

***A. Level A Differences.*** Level A differences are those differences which the crewmember needs to be aware of, but which have little effect on systems operations. For example, an engine starter on one variant aircraft has different time limits but does not have differences in controls, indicators, function, or procedures. Self instruction methods such as highlighted pages of operating manuals or training bulletins are acceptable for these differences. At the Level A of differences, testing may not be required or may be delayed until the next period of recurrent training. Among the several appropriate means of conducting such testing are

open book tests, verbal quizzes, and computer based instruction (CBI). Once such differences are incorporated into the operator's aircraft operating manual, there is usually not a requirement for currency events.

***B. Level B Differences.*** Level B differences are those differences in systems, controls, and indicators that have only minor procedural differences. Level B differences are of great enough degree to require formal training in either general operating subjects, aircraft systems, or both, but are not of great enough degree to require systems integration training. An example of a Level B difference might be a fuel system with additional fuel tanks, pumps, and gauges. Procedural differences are limited to the operation of transfer valves and pumps while an aircraft is in cruise flight. Appropriate instructional methods for Level B differences include, but are not limited to, tape slide/presentations, lectures, and CBI. The testing that is appropriate to Level A differences is also appropriate to Level B differences, however, testing must be conducted immediately after training.

***C. Level C Differences.*** Level C differences are those differences of great enough degree to require a systems integration training module but that are not of great enough degree to require actual flight training). An example of a Level C difference is the installation of a flight management system (FMS) computer. Appropriate training and testing methods in the general operating and systems training modules are the same as those used for Level B differences. Appropriate training devices in the integration module are dedicated systems trainers or training devices of level 4 or greater. Testing methods appropriate to Level C differences are demonstrations of skill in the procedures affected by the difference. In the case of the installation of an FMS computer, testing might consist of preflight programming of the computer and a demonstration of its use in navigation, climbs, and descents. In this case, the qualification curriculum segment should also contain supervised operating experience.

***D. Level D Differences.*** Level D differences are those differences for which there is a requirement for flight training modules but not for high fidelity simulation for landings. When Level D differences exist between two aircraft, general operating training modules, systems training modules, and integration training modules may be required. An example of a Level D difference might be the installation of an electronically integrated flight instrumentation display. Aircraft operations using such a display are required to contain flight training in most phases of flight, except landings. Level 6 or greater flight training devices are appropriate for conducting Level D differences training and qualification modules. The testing required consists of applicable events of a Part 121 proficiency check.

***E. Level E Differences.*** Level E differences are those differences for which there is a requirement for flight training, including landing events. An example of a Level E difference is the installation of a STOL (short takeoff and landing) kit on an aircraft resulting in a very different flare and landing attitude. A Level C or higher (Phase II) simulator, or an airplane is required for flight training in Level E differences. The testing required in Level E differences consists of the applicable events of a Part 121 proficiency check.

**G.8 Recurrent Differences Training And Currency Events**

When operators schedule crewmembers on multiple variants of an aircraft, some form of differences training must be included in the recurrent training curriculum. The amount and type of required training depends on the degree of difference involved and the operator's circumstances. Levels A and B differences should be reviewed within recurrent ground training curriculum segments. Levels C, D, and E differences require some degree of proficiency testing in a flight training device, simulator, or aircraft. Recurrent differences training and testing can be reduced when the operator adopts a system to ensure that crewmembers remain current in all variations of the aircraft operated. For example, when a crewmember is operating aircraft equipped with servo mechanical and CRT cockpit displays, currency could be expressed by the operator in terms of the number of flight legs in each variant of the aircraft each quarter.

**G.9 Approval Process**

The approval process for differences training follows the five step process. The operator must submit an outline of the differences training program. This outline should contain

appropriate modules and elements. Before the ECASA inspector may grant initial approval of the training program, the operator must also submit documentation supporting the differences analysis. The documentation may also be a differences analysis prepared by the operator or other qualified party. When the operator chooses to use the integrated method of training, differences training appears in the outline as differences modules in the appropriate curriculum segment. When the operator conducts differences training as a separate and distinct curriculum segment, all differences modules are grouped in that segment. In either case, the ECASA inspector's approval should be predicated on the operator meeting the following required criteria:

* Differences analysis is complete and accurate (but not necessarily in great detail)
* Outline contains the appropriate instructional elements to account for the differences identified in the analysis
* The appropriate modes of instruction and devices to conduct the training.

## G.10 Seat Dependent Training

Pilots operating aircraft from the left and right pilot seats are frequently confronted with special skill and training requirements. The differences in crew duties and skill requirements vary from insignificant to highly significant in various makes and models of aircraft. For this reason, ECASA inspectors must evaluate an operator's seat dependent training requirements on a case by case basis. ECASA inspectors may require that operators use a differences evaluation (as described in this section) for making this determination.