



EAC

No. 00_4

TABLE of CONTENTS

ITEM	TITLE
<u>EAC 00-4</u>	<u>Line Oriented Flight Training</u>
<u>1</u>	Purpose
<u>2</u>	Background
<u>3</u>	Definitions
<u>4</u>	Basic Elements Of A Loft
<u>5</u>	Loft Phases
<u>6</u>	Training Hours, Recurrent And Qualification Loft
<u>7</u>	Loft Scenarios
<u>8</u>	Scenario Approvals
<u>9</u>	Loft And Crm
<u>10</u>	Critique Of Crewmember Performance
<u>11</u>	Audiovisual Equipment
<u>12</u>	Additional Training
<u>13</u>	Ecasa Philosophy
<u>14</u>	Types Of Lofts
<u>15</u>	Summary

Line Oriented Flight Training

1. PURPOSE

This Egyptian Advisory Circular (EAC) presents information and guidance for the design and implementation of Line Oriented Flight Training (LOFT).

2. BACKGROUND

The use of flight training devices and flight simulators has become increasingly important in training flight crewmembers. As the level of sophistication in simulators increased, air carriers have come to rely on simulators for part or all of their flight training programs. Since the mid-1970s, many operators have implemented alternative simulator training, which is now known as LOFT, to train their crewmembers. LOFT training occurs in a simulator with a complete crew using representative flight segments, which contain normal, abnormal, and emergency procedures that may be expected in line operations. A LOFT used in recurrent training programs is known as a "Recurrent LOFT." A LOFT used in a training program utilizing the requirements of Appendix H is termed a "Qualification LOFT."

LOFTS are useful training methods because they give crewmembers the opportunity to practice line operations (such as maneuvers, operating skills, systems operations, and the operator's procedures) with a full crew in a realistic environment. Crewmembers learn to handle a variety of scripted real-time scenarios which include routine, abnormal, and emergency situations. They also learn and practice cockpit resource management (CRM) skills, including crew coordination, judgment, decision-making, and communication skills.

The overall objective of a LOFT is to improve total flight crew performance, thereby preventing incidents and accidents during operational flying.

ECAR Part 121, Appendix H, contains guidelines for operators who choose to provide flight crewmember training under an Advanced Simulation Plan. While Appendix H provides a detailed description for implementing training, the specific LOFT components are not clearly described. This EAC presents guidelines for implementing a Qualification LOFT as required under Appendix H or as may be used within any other approved training program.

3. DEFINITIONS

The following terms are used throughout this EAC:

Line Qualified: Describes a flight crewmember or instructor who is current and qualified to conduct actual flight operations in an assigned aircraft and duty position.

Line Familiar: Describes a flight crewmember or instructor who is familiar with a certificate holder's line operations. This person is either line qualified or otherwise qualified by participation in an approved line observation program. (An acceptable line observation program would include observation from the cockpit jump seat of a line crew on at least two operational flight segments. This should be accomplished twice annually, and the line observation program should be included as a part of the approved training program.)

Task Familiar: Describes a flight crewmember who is familiar with and can satisfactorily accomplish the duties of a particular cockpit duty position though not qualified for that duty position. For example, a second in command (SIC) candidate who performs the duties of the pilot in command (PIC) during simulator training.

Qualification LOFT: An approved flight simulator course which facilitates the transition from simulator training to operational flying. A Qualification LOFT must meet the requirements of ECAR Part 121, Appendix H.

Recurrent LOFT: An approved flight simulator course which may be used to meet recurrent flight training requirements

4. BASIC ELEMENTS OF A LOFT

Elements of a LOFT must be understood to ensure that its primary objective, to provide realistic line oriented training, is met. These elements apply to both Recurrent and Qualification LOFTS.

Crew Composition and Participation

A LOFT should be performed in a line operational environment with a complete crew. A complete crew must always be scheduled and every effort will be made to maintain crew integrity. During a LOFT, each crewmember performs both as an individual and as a member of a team, as is expected during line operations.

Realistic Situations

A LOFT should contain scenarios of realistic line situations which progress in real-time. These scenarios should be representative of flight segments where an entire enroute operation is completed. In cases of flights involving repetitive events, the enroute segments may be compressed. However, enough time should be allotted to allow crewmembers to become sufficiently familiar with the scenario to ensure that if the scenario is compressed, crewmembers will be able to resume or restart the scenario without confusion.

No-Jeopardy Training

A LOFT is considered a "no-jeopardy" training event, that is, the instructor does not issue a pass/fail grade to a participating crewmember.

As a LOFT scenario progresses, it is allowed to continue without interruption so crewmembers may learn by experiencing the results of their decisions. Decisions which produce unwanted results do not indicate a training failure, but serve as a learning experience.

If the LOFT instructor identifies crewmember performance deficiencies, additional training or instruction must be provided. This training/instruction may be in any form, including an additional LOFT. Before the crewmember may return to line operations, the performance deficiencies must be corrected and the instructor must document the training as satisfactorily completed. The "no-jeopardy" concept allows crewmembers to use their full resources and creativity without instructor interference. At the completion of a LOFT session and following a thorough debriefing, the instructor certifies that the training has been completed.

Uninterrupted Training

LOFT scenarios run to completion without interruption by the instructor. The effects of crewmember decisions are permitted to accrue and influence the flight. Research indicates that crewmembers will learn more effectively if they are allowed to learn from their experiences rather than being interrupted and corrected by an instructor

5. LOFT PHASES

LOFT scenarios should contain the following phases:

Briefing

Before the flight segment begins, the instructor should brief crewmembers on the LOFT scenario, including the training objectives and the roles of the instructor and crewmember. The instructor is considered "not present," except as an Air Traffic Controller or as another ground base entity. The flight crew is expected to perform their duties just as they would in normal line operations. Information concerning the routing, MEL and other special circumstances related to the flight should also be discussed.

Preflight Planning (Documents and Activities)

Preflight planning documents (such as weather reports and flight plans) should be prepared in accordance with the operator's current policies and procedures. Cockpit preflight activities must also conform to standard operational procedures.

Flight Segment

The flight segment includes a realistic scenario of taxiing, takeoff, enroute, landing and appropriate communications.

Debriefing

The debriefing should include feedback to crewmembers on their performance. Positive comments regarding crew performance should be emphasized, as well as, crew performance-needing improvement. The debriefing involves instructor critiques of individual crewmember performance and of the crew as a team. Also, it is important that crewmembers be given the opportunity to critique and analyze their own performance and review key points of the recorded video record, if used.

6. TRAINING HOURS, RECURRENT AND QUALIFICATION LOFTs

Both Recurrent and Qualification LOFT sessions should be based on 4 hours of total crewmember-training activity in the simulator. Reasonable amounts of time should be allowed for problem solving (such as consulting minimum equipment lists and operations manuals, preparing takeoff data, as well as, other crew actions which are required by the training scenario). For a Qualification LOFT or a Recurrent LOFT, the training should include cockpit preparation, preflight activities, crew briefings, and interactions with flight dispatch and other ground agencies. All crewmembers participating in a LOFT session are credited with 4 hours of training time.

7. LOFT SCENARIOS

LOFT scenarios should adhere to the following guidelines:

Objectives: The operator should assign specific training objectives to each scenario. These training objectives should be based on the particular needs of the operator. For example, if an operator is experiencing an unusual frequency of a specific operational problem, such as, wet or icy runways, the scenarios should be designed to include exposure to that particular operational problem. Training objectives may also be identified by the ECAA based upon documented trends. Other specific objectives may include winter operations training, unusual airport or runway operations, alternate operation of automated systems, and various system malfunctions.

Constructing Scenarios: A variety of scenarios can be constructed by choosing various combinations of elements from the following suggested categories:

- Origin, routing, and destination (short vs. long routes)
- Revised arrival procedures (unexpected runway change)
- Alternate operation of flight management systems
- Abnormal and emergency conditions, including simple and complex malfunctions
- Adverse weather conditions
- Partial or full loss of integrated flight management systems

Scenarios should normally be representative of a flight segment appropriate to current operations.

Timing: Scenarios should run in real-time. This may include periods of inactivity to realistically resemble actual operations.

Realism: Scenarios should contain realistic circumstances; such as, messages from the ATC or cabin crew interruptions.

Note: Scenarios should be updated periodically to ensure they continue to meet training objectives and to prevent crewmembers from learning the entire content of the LOFT.

8. SCENARIO APPROVALS

Scenarios will be approved by the ECAA. Operators may elect to submit specific LOFT or a description of a system, which uses a menu of different flight situations, and environmental conditions, which can be selected randomly to construct a variety of LOFT scenarios.

In any case, scenarios, which comply with the elements provided in this EAC and meet the operator's stated training objectives will be approved.

Note: Detailed scripts of the scenarios need not be submitted during the approval process.

When updated, scenarios should conform to the same guidelines that applied to the original approval and the ECAA must be notified.

9. LOFT AND CRM

LOFT scenarios should contain CRM skills, whereby crewmembers utilize and reinforce various concepts learned during their formalized CRM training.

10. CRITIQUE OF CREWMEMBER PERFORMANCE

Critique of crewmembers should occur during the debriefing by the instructor. A critique should include discussion of individual and flight crew performance by the instructor, as well as, assessment by the crewmembers of their own performance. The

critique should consider the crewmember's judgment and the crew's interaction with all available resources in handling various problems.

11. AUDIOVISUAL EQUIPMENT

Recorded audiovisual feedback is very useful as a debriefing aid because it allows crewmembers to view themselves from a third person perspective. This feedback helps crewmembers better understand their performance, identify their weaknesses, and build upon their strong attributes, thereby encouraging positive changes in attitudes and behavior. Recorded audiovisual feedback should be erased at the completion of the debriefing.

12. ADDITIONAL TRAINING

Decisions, which produce unwanted results, do not indicate a training failure, but serve as a learning experience, which may indicate a need for additional instruction or modified training activities. The additional training could be any form, including an additional LOFT. In any case, required additional training shall be provided and documented as satisfactorily completed prior to the crewmember's return to line operations. Although additional training for a particular individual may be necessary, each LOFT scenario will be recorded as "complete" at the end of the debriefing stage.

13. ECAA PHILOSOPHY

The ECAA believes that the effectiveness of LOFT training is dependent on four important aspects. First, the use of the highest level of simulator available. Second, ensuring that only line qualified crewmembers are scheduled to participate in Recurrent LOFTS, and that only crewmembers who are training for a particular duty position or line qualified crewmembers are scheduled to participate in Qualification LOFTs. Third, those LOFT scenarios run their full, uninterrupted course. Fourth, that a variety of scenarios are available and periodically updated to ensure that the LOFT experience does not become repetitive.

Any interruption of a LOFT scenario is considered a detriment to the learning process. LOFT scenarios should be allowed to continue to their logical completion. Well thought out and properly developed scenarios will prohibit situations requiring an interruption.

Training value is diminished whenever crewmembers become too familiar with the scenarios. Therefore, a variety of LOFT scenarios is required to guard against crewmembers experiencing repetitious situations. In addition, operators are expected to regularly update LOFT scenarios, thereby ensuring that crewmembers are exposed to new technology, procedures, and current operational problems.

14. TYPES OF LOFTS RECURRENT LOFT

Recurrent LOFTS are designed to ensure that each crewmember maintains efficiency in the type of aircraft and crewmember duty position involved. It is intended for flight crewmembers who are presently qualified in a particular make, model and series of aircraft. A Recurrent LOFT is best conducted with a complete line qualified crew and instructor interruption is not permitted.

QUALIFICATION LOFT

Qualification LOFTS are designed to prepare crewmembers, who are not yet fully qualified for line operations and whose training has been provided in accordance with an Advanced Simulation Plan. A Qualification LOFT provides training that facilitates the transition from flight simulator training to operational flying and scenarios are designed to represent typical flight segments. This type of LOFT is instructional in nature; therefore, when it is essential to do so, instructors may momentarily interrupt a scenario for instructional purposes.

15. Summary

Loft training is an invaluable tool that further enhances the learning process and a crewmembers competency and efficiency. Operators should make every effort to integrate LOFT scenarios into their current training programs.