CAAS
Civil Aviation Authority of Singapore

Advisory Circular

GUIDELINES FOR THE DESIGN AND IMPLEMENTATION OF LINE ORIENTED FLIGHT TRAINING (LOFT)

GENERAL

Advisory Circulars (ACs) are issued by the Director-General of Civil Aviation (DGCA) from time to time to provide practical guidance or certainty in respect of the statutory requirements for aviation safety. ACs contain information about standards, practices and procedures acceptable to CAAS. An AC may be used, in accordance with section 3C of the Air Navigation Act (Cap. 6) (ANA), to demonstrate compliance with a statutory requirement. The revision number of the AC is indicated in parenthesis in the suffix of the AC number.

PURPOSE

This AC provides guidance to demonstrate compliance with, and information related to, requirements regarding the design and implementation of Line Operational Simulations, including Line-Oriented Flight Training (LOFT) and Special Purpose Operational Training (SPOT).

APPLICABILITY

This AC is applicable to an AOC holder operating an aeroplane with a MCTOM of greater than 5,700 kg in accordance with either ANR-121 or ANR-135.

RELATED REGULATIONS

This Advisory Circular relates specifically to Regulations 143, 148, 151 and 160 of ANR-121.

RELATED ADVISORY CIRCULARS

- AC 121-9-8 Training on Crew Resource Management

CANCELLATION

This AC supersedes AC AOC-3.

EFFECTIVE DATE

This AC is effective from 1 October 2018.

OTHER REFERENCES
Nil.

1 LINE OPERATIONAL SIMULATIONS

1.1 BACKGROUND

1.1.1 The use of flight training devices and flight simulators has become increasingly important in training flight crew members. As the level of sophistication in simulators increase, air operators have come to rely on simulators for part or all of their flight training programs. Since the mid-1970's, some operators have implemented Line-Oriented Flight Training (LOFT) for their crew members. LOFT is the training 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. This AC provides guidance for the use of LOFT in "qualification" and "recurrent" training programmes and sets forth guidelines for its design and implementation.

1.1.2 LOFT is a useful training method because it gives crew members the opportunity to practice line operations (e.g., manoeuvres, operating skills, systems operations, and the operator's procedures) with a full crew in a realistic environment. Crew members 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 skills, including crew coordination, judgment, decision-making, and communication skills. The overall objective of LOFT is to improve total flight crew performance, thereby preventing incidents and accidents during operational flying.

1.1.3 New training concepts and training media have identified a need for other types of training in operational simulations called Special Purpose Operational Training (SPOT).

1.1.4 The International Civil Aviation Organization (ICAO), CAAS and industry have recognised the importance of Crew Resource Management (CRM) in crew member training. CRM training addresses human factors (e.g., leadership, communication skills, time management, situational awareness, and attitudes in flight operations). Training to improve performance in these areas has been identified as a factor in reducing the number of airline accidents and incidents. CRM training is designed for a complete crew environment. Application of CRM skills appears to be an integral part of safe and successful line operations. This AC addresses the relationship of CRM to Special Purpose Operational Training, as well as to LOFT.

1.1.5 This AC also presents guidelines in conducting SPOT for differences training.

1.2 Types of Line Operational Simulations

1.2.1 This AC identifies three types of Line Operational Simulations:
   (a)   Recurrent LOFT,
   (b)   Qualification LOFT, and
   (c)   Special Purpose Operational Training, which is training that may be used for various unique purposes such as aircraft differences or CRM training.

2 DEFINITIONS

The following terms are used throughout this AC and they are defined as follows:

Line Qualified describes a flight crew member or instructor who is current and qualified to conduct actual flight operations in an assigned aircraft and duty position.

Line Familiar describes a flight crew member or instructor who is familiar with the line operations of the AOC holder. This person is either line qualified or otherwise qualified by participation in an accepted 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 crew member 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 refers to an approved flight simulator course of LOFT to facilitate transition from training using flight simulation to operational flying.

Recurrent LOFT refers to an approved flight simulator course of LOFT which may be used to meet recurrent flight training requirements and to substitute for alternate proficiency checks.

Special Purpose Operational Training (SPOT) refers to an approved course of operationally oriented flight training, conducted in a flight simulator or flight training device, which may be used to learn, practice, and accomplish specific training objectives; e.g., training in variant aircraft or special aircraft equipment.

3   BASIC ELEMENTS OF LOFT

3.1   GENERAL

Certain elements about 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 LOFT and are described in this section.

Note: Some or all of these elements may also apply to SPOT. See section 5 for more information on how these concepts apply to SPOT.

3.2   CREW COMPOSITION AND PARTICIPATION

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

3.3   REAL-WORLD SITUATIONS

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

3.4   NO-JEOPARDY TRAINING

LOFT is a "no-jeopardy" training, i.e. the instructor does not issue a passing or failing grade to a participating crew member. As the LOFT scenario progresses, it should continue without interruption so that crew members 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 crew member performance deficiencies, additional training or instruction should be provided. This training or instruction may be in any form, including additional LOFT. Before the crew member return to line operations, the performance deficiencies should be corrected and the instructor will document the training as satisfactorily completed. The "no-jeopardy" concept allows crew members to use their full resources and creativity without instructor interference. At the end of a LOFT session and after debriefing, the instructor certifies that the training has been completed.

3.5   UNINTERRUPTED TRAINING

LOFT scenarios run full-length, with no interruption by the instructor permitted. The effects of crew member decisions are allowed to accrue and influence the rest of the flight. The concept is that crew members will learn more effectively if they are allowed to learn from their experiences, rather than being interrupted and corrected by an instructor. In rare cases an instructor may choose to intervene if he determines negative learning is taking place.

3.6   FEEDBACK

LOFT includes feedback to crew members on their performance in the scenario. This takes place during the debriefing phase. (See paragraph 3.7 for further detail on feedback and debriefing.)

3.7   PHASES OF LOFT

LOFT scenarios should contain the following phases: briefing, pre-flight planning documents and activities, flight time, and debriefing. These are described in the following paragraphs.

(a)   <u>Briefing</u>. Before the flight segment begins, the instructor should brief crew members on the LOFT scenario, including the training objectives, and the role of the instructor (i.e., the instructor is considered "not present," except as an Air Traffic Controller (ATC), cabin crew or as another ground base entity). The role of the flight crew should be discussed in the briefing (i.e., flight crew members should perform their duties just as they would in line operations). Information about "the environmental setting of the scenario" should also be discussed.

(b)   <u>Pre-flight Planning Documents and Activities</u>. Preflight planning documents (e.g., weather reports and flight plans) should be prepared with the AOC holder's particular training objectives in mind. For example, the AOC holder may choose to have crew members learn how to handle unfavourable weather conditions or how to correct improper fuel loads. Pre-flight activities include cockpit setup, computation of take-off data, etc.

(c)   <u>Flight Segment</u>. The flight segment includes taxiing, take-off, flying, and landing. It should also include the time in which communication with ATC and other ground agencies takes place.

(d)   Debriefing. Debriefing provides feedback to crew members on their performance. Positive comments regarding crew performance should be emphasised in the debriefing as well as crew performance that needs improvement. The debriefing involves instructor critiques of individual crew members and of the crew as a team. Also, it is important that crew members be given the opportunity to critique and analyse their own performance and review key points of the video record, if used. (See paragraphs 3.12 and 3.13 for further discussion of critiques, debriefing, and use of video records.)

3.8   TRAINING HOURS, RECURRENT AND QUALIFICATION LOFT

Both recurrent and qualification LOFT sessions should be based on at least 4 hours of total crew member training activity, which should include at least 2.5 hours of LOFT scenarios. Reasonable amount of time should be allowed for problem solving (e.g., consulting minimum equipment lists and operations manuals, preparing take-off data, as well as other crew actions which are occasioned by the training scenario). For qualification LOFT, the 4 hours of crew member training should include cockpit preparation, pre-flight activities, crew briefings, and interactions with flight dispatch and other ground agencies. For Recurrent LOFT, any additional hours of training, beyond the 2.5 hours of LOFT scenarios necessary to comply with current approved syllabus may, subject to the approval of CAAS, be utilised for other specific training requirements. All crew members participating in a LOFT session are credited with 4 hours of training time.

3.9   LOFT SCENARIOS

LOFT scenarios should be constructed with the following guidelines in mind:

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

(b)   Constructing Scenarios. A variety of scenarios can be constructed choosing different combinations of elements from the suggested categories listed below. Scenarios should normally be representative of the flight segment appropriate to the operations being conducted by the AOC holder.

(i)   Origin, routing, and destination (e.g., short vs. long routes)

(ii)   Revised arrival procedures (e.g., an unexpected runway change)

(iii)   Alternate operation of flight management systems

(iv)   Abnormal and emergency conditions, including simple conditions (e.g., a potential hot start) and complex conditions which continue for the entire flight (e.g., a failed essential A.C. bus)

(v)   Adverse weather conditions

(vi)   Partial or full loss of integrated flight management systems

(c)   <u>Timing</u>. Scenarios should run in real time. This may include inactive time to realistically resemble actual operations.

(d)   <u>Realism</u>. Scenarios should contain realistic circumstances such as messages from the ATC, or cabin crew interruptions. The AOC holder may use these elements to design full-length, real-time scenarios, as well as shorter scenarios which teach specific skills such as the handling of wind shear, special navigation equipment and TCAS, etc. Scenarios should also be developed to observe checklist management procedures, standard call outs, leadership qualities, assertiveness, crew coordination, and communication. Scenarios should be updated periodically to ensure they continue to meet training objectives. Just as crew members are unable to anticipate all flight operational situations, the AOC holder should try to prevent crew members from anticipating the entire content of the scenarios.

3.10   TRAINING SCENARIOS

When incorporating LOFT scenarios as part of the flight crew training programme (which is subject to approval by the DGCA), the AOC holder should state what training objectives are expected to be attained through completion of the LOFT. The AOC holder may select to submit specific LOFT scenarios or a description of a system that 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 that comply with the elements provided in this AC and meet the AOC holder's stated training objectives may be accepted. When updated, scenarios should conform to the same guidelines that apply to original scenarios in the approved training programme.

3.11   LOFT AND CRM

LOFT scenarios should contain CRM skills, whereby crew members utilise and reinforce CRM concepts. CRM skills should be integrated into the AOC holder's manoeuvre/procedure learning objectives. In addition, focused CRM training could be provided independently during separate SPOT. The AOC holder may refer to AC 121-9-8 for guidance on training on CRM.

3.12   CRITIQUE OF CREW MEMBER PERFORMANCE

Critique of crew members should take place during the debriefing by the instructor. Critiques should include positive feedback regarding crew performance. Critiques should include discussion of individual and flight crew performance by the instructor as well as assessment by the crew members of their own performance. The critique should consider the crew member's judgment and the crew's interaction with all resources in handling problems. This includes interaction with ATC, company communications, software materials (e.g. company operations manuals and flight manuals), workload-reducing devices (e.g. autopilot and flight management systems), and other crew members.

3.13   USE OF AUDIO-VISUAL EQUIPMENT

Recorded audio-visual feedback is very useful as a debriefing aid for most types of LOFT because it allows crew members to view themselves from a third person

perspective. This feedback helps crew members to better understand their performance, identify and accept their weak areas, and build upon their strong areas, thereby encouraging positive changes in attitudes and behaviour. Recorded audio-visual feedback should be erased at completion of the debriefing.

3.14   ADDITIONAL TRAINING/LOFT COMPLETION

Decisions that produce unwanted results do not indicate a training failure, but serve as a learning experience and may indicate a need for additional instruction or modified training activities. The additional training could be in any form, including additional LOFT. In any case, required additional training shall be provided and documented as satisfactorily completed prior to the crew member'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.

3.15   BASIC ELEMENTS OF LOFT: SUMMARY

LOFT is defined by the following basic concepts:

(a)   It takes place in a simulated line operational environment.

(b)   It uses a complete crew with total participation.

(c)   It contains real-world incidents, unfolding in real time.

(d)   It is "no-jeopardy" training.

(e)   It contains scenarios and segments that run uninterrupted.

(f)   It contains scenarios tailored to the AOC holder's learning objectives.

(g)   It incorporates CRM skills.

(h)   It provides critique of individual and crew performance.

3.16   PHILOSOPHY REGARDING LOFT

3.16.1 The effectiveness of LOFT is dependent on four important aspects:

(a)   the use of the highest fidelity simulator available;

(b)   ensuring that only line qualified crew members are scheduled to participate in Recurrent LOFT, and that only crew members who are in training for a particular duty position or line qualified crew members are scheduled to participate in Qualification LOFT;

(c)   that LOFT scenarios run their full, uninterrupted course; and

(d)   that a variety of scenarios, fully compatible with training objectives, are available and periodically updated to ensure that the LOFT experience does not become repetitive or predictable.

3.16.2 In keeping with this philosophy, an AOC holder, which has available a range of flight simulators for a particular aircraft model, is expected to conduct LOFT in the flight simulator with the highest fidelity. For example, if an AOC holder has both a Level A

and a Level D B-737-800 simulator at its in-house training facility or at a contracted training facility, the AOC holder should conduct LOFT using the Level D simulator.

3.16.3 The training value of LOFT can be seriously diminished when inappropriate crew substitutions are made. An AOC holder should not schedule any person other than "line qualified" crew members for Recurrent LOFT. For Qualification LOFT, the AOC holder should schedule only line qualified crew members or those crew members who are in training for a particular duty position. In both cases, the AOC holder should make every reasonable effort to meet these scheduling guidelines. When, due to reasons beyond the control of the AOC holder, the need for substitution arises, the substitution tables in this AC may be used. However, these tables are intended to be used only after the AOC holder has made all reasonable efforts to provide a substitute crew member of equal status to the person originally scheduled. Thus, it is recommended that the AOC holder maintains an identified pool of cockpit crew members available to serve as substitutes in LOFT. This pool may include reserve crew members and/or newly qualified crew members. (Newly qualified crew members could benefit from the additional experience they would receive by serving as substitutes.) In any case, the AOC holder should use the contingency features of the substitution tables to permit continuation of scheduled training only for exceptional cases.

3.16.4 Interruption of the LOFT scenario is detriment to the learning qualities inherent in LOFT. Arbitrary interruption of LOFT is not acceptable. LOFT scenarios should be allowed to continue to their logical completion. The scenario may only be terminated if the instructor is certain that negative training is occurring and there would be no value to continue that flight segment.

3.16.5 Proper planning and development of LOFT scenarios are essential to ensure that training objectives are met. This is a critical characteristic for a LOFT programme to be accepted. Training value is diminished when students become familiar with scenarios. Therefore, a variety and a sufficient number of LOFT scenarios are required to guard against crew members experiencing repetitious situations. In addition, the AOC holder should regularly update LOFT scenarios, thereby ensuring that crew members are exposed to new technology, procedures, and current operational problems.

4   TYPES OF LOFT

4.1   GENERAL

As discussed throughout this AC, there are two types of LOFT – Recurrent LOFT and Qualification LOFT. Guidelines for designing and conducting these types of LOFT are presented below.

4.2   RECURRENT LOFT

Recurrent LOFT is designed to ensure that each crew member maintains proficiency in the type of aircraft and crew member duty position involved. Recurrent LOFT is intended for flight crew members who are presently qualified in a particular make, model and series of aircraft. Recurrent LOFT is best conducted with a complete line qualified crew.

4.3   GUIDELINES FOR RECURRENT LOFT

Recurrent LOFT should meet the following guidelines:

(a)   <u>No Direct Instruction or Scenario Interruption</u>. Recurrent LOFT does not permit direct instruction and normally does not permit interruption of the scenario by the instructor.

(b)   <u>Crew Composition</u>. Recurrent LOFT requires scheduling of a complete crew which is line qualified.

(c)   <u>Crew Substitutes</u>. The use of substitutes is discouraged and substitution should be rare. When the composition of the scheduled line qualified crew cannot be maintained, the AOC holder may use substitutions based on the guidelines in Table 1. However, the AOC holder should attempt first to substitute with another line qualified crew member. This table should be used only as a last resort to prevent interruption of scheduled training.

Table 1.   Recurrent LOFT Crew Substitution Table

Pilot-in-Command Position	Second-in-Command Position	Flight Engineer (FE) Position (if applicable)
1. Another person of the same status for that position.		
2. PIC[1]	SIC[1]	FE[1]
3. Pilot Instructor [2]	PIC[1]	F E Instructor [2]
4. Pilot Instructor [2]	Pilot Instructor [2]	Pilot Instructor [2]

[1]   Includes those who are either line qualified or in training for the position.

[2]   May act as a substitute when a line qualified crew member is not available. The instructor should not have previous knowledge of the scenario; however, when this is unavoidable, the instructor should not use that knowledge to influence or direct the scenario.

NOTE: The instructor conducting the LOFT session may not act as a substitute crew member.

(d)   <u>Number and Type of Segments</u>. A Recurrent LOFT scenario may include one or more flight segments, depending on the training objectives.

(e)   <u>Training Media</u>. The highest fidelity flight simulator available should be scheduled for Recurrent LOFT. Recurrent LOFT may be conducted in a Level A, B, C, or D flight simulator, however, the use of the highest level simulator (Level D) is encouraged and the use of Level A simulators is discouraged.

4.4 QUALIFICATION LOFT

Qualification LOFT is designed to prepare crew members, who are not yet fully qualified for line operations and whose training has been provided in accordance with actual flight operations. Qualification LOFT provides training that facilitates the transition from flight simulator training to operational flying. Scenarios are designed to represent typical flight segments. Qualification LOFT is instructional in nature and therefore, when it is essential to do so, instructors may momentarily interrupt a scenario for instructional purposes. Qualification LOFT is best conducted when the student crew member, who is not yet fully qualified, is scheduled with a crew complement whose other members are line qualified. For example, a PIC candidate would be scheduled with a line qualified SIC and FE (if applicable).

4.5 GUIDELINES FOR QUALIFICATION LOFT

Qualification LOFT should meet the following guidelines:

(a) <u>Direct Instruction and Scenario Interruption</u>. Qualification LOFT permits minimal interruption of the scenario for the purpose of instruction. Interruption is allowed only when the instructor is certain that negative learning is taking place.

(b) <u>Crew Composition</u>. Qualification LOFT requires the scheduling of a complete crew complement. Ideally, the crew member who is qualifying would be scheduled with other crew members who are fully line qualified. In any case, the crew members will be Task Familiar with their assigned duty position but need not be Line Familiar.

(c) <u>Crew Substitutes</u>. The use of substitutes is highly discouraged and substitution should be implemented rarely. When the composition of the scheduled crew cannot be maintained, the AOC holder may substitute crew members using Table 2. The AOC holder should attempt first to substitute another person in the same status.

Table 2   Qualification LOFT Crew Substitution Table

	Pilot-in-Command Position	Second-in-Command Position	Flight Engineer Position (if applicable)
1.	Another person of the same status for that position.		
2.	PIC[1]	SIC[1]	FE[1]
3.	SIC[1]	PIC[1]	F E Instructor[2]
4.	Pilot Instructor[2]	Pilot Instructor[2]	Pilot Instructor[2]

[1.] Includes those who are either qualified or in training for the position and will be Task Familiar for the position in which they are substituting.

[2.] May act as a substitute when a line qualified crew member is not available. The instructor should not have previous knowledge of the scenario; however, when this is unavoidable, the instructor should not use that knowledge to influence or direct the scenario.

(d)   Number and Type of Segments. Qualification LOFT should consist of at least two flight segments, one containing normal line operations and one containing abnormal and emergency occurrences.

(e)   Training Media. Qualification LOFT will be conducted in flight simulators qualified at Levels C or D.

5   SPECIAL PURPOSE OPERATIONAL TRAINING (SPOT)

5.1   GENERAL

SPOT is designed for training crew members in a flight simulator or flight training device. SPOT is useful whenever coordinated crew performance is required. It may not be substituted for Recurrent LOFT or Qualification LOFT. Examples of SPOT may include training which:
(a)   Focuses on CRM skills.
(b)   Provides differences training on variant aircraft.
(c)   Provides wind shear training.
(d)   Trains in special aircraft equipment, e.g. navigational equipment and flight management systems.

5.2   ELEMENTS RESEMBLING LOFT

SPOT contains some elements which are similar to those found in LOFT, including line environment, scenarios which are real world and real time, no-jeopardy training, and the use of feedback and critique. Elements of SPOT which may vary from LOFT are described below.

5.3   GUIDELINES FOR SPECIAL PURPOSE OPERATIONAL TRAINING

The components of SPOT vary depending on the purpose or objective of the training. Therefore, the following provides only a general guideline.

(a)   Direct Instruction and Scenario Interruption. SPOT permits direct instruction and allows for interruption of the scenario by the instructor.

(b)   Crew Composition. SPOT may include use of a complete or partial crew, depending upon the training objectives.

(c)   Crew Substitutes. The use of crew substitutes SPOT depends upon the type of training being provided.

(d)   Number and Type of Segments. SPOT may contain any number of full or partial flight segments, depending upon the training objectives.

(e)   Training Media. SPOT may use a wide range of flight simulators and flight training devices, depending upon the training objectives.

6 THE ROLE OF INSTRUCTORS

6.1 MINIMUM QUALIFICATIONS

Instructors should be trained in the philosophy, skills, and conduct of Line Operational Simulations and CRM. They should be able to effectively observe and critique both individual and crew performance during the scenario. To do these, they should meet the minimum requirements discussed in the following paragraphs:

(a)   Line Familiar. Instructors should be Line Familiar, i.e., familiar with the operations for which they are providing training. This will ensure that instructors accurately perceive and evaluate situations as they arise. In cases where instructors currently are not line qualified, an accepted line observation program (see definition of "Line Familiar") should ensure that they are familiar with line operational procedures and problems. In this way, instructors will maintain understanding of the operational demands confronting line crew members.

(b)   Qualified as Instructors. Instructors should be qualified as defined in SASP 3 or as otherwise approved. They are not required to hold current medical certificates to qualify and serve as instructors.

(c)   Trained in CRM Skills. Instructors will receive training in CRM skills in order to observe and critique these areas in Line Operational Simulations.

(d)   Trained in Methods for Briefing, Debriefing, and Critique. Instructors should be trained to conduct the briefing and debriefing/critique phases of Line Operational Simulations, including how to provide feedback in a non-threatening and sensitive manner.

6.2 INSTRUCTOR RESPONSIBILITIES AT EACH STAGE OF LINE OPERATIONAL SIMULATIONS

The following is a description of the roles and responsibilities expected of instructors:

(a)   Briefing and Preparation. Instructors should be able to effectively convey the purpose of the Line Operational Simulation and how it is representative of line operations. Instructors should also explain the instructor's role during the training; i.e., as an observer and not considered present unless playing a role in the scenario.

(b)   Flight Segment. Instructors should be able to both observe and perform ancillary roles. They should be trained in observing both technical and CRM skills. The instructor should also be trained in proper pacing, proper introduction of abnormal/emergency procedures, and methods of handling unforeseen crew actions.

(c)   Debriefing and Critique. Instructors should provide both positive and negative feedback during critiques of individual and crew performance. Prior to the instructor's critiques, crew members should be encouraged to self-critique. Instructors will provide feedback to the crew to encourage the changes needed for improved performance. Instructors should also provide specific recommendations to improve individual crew members' performance.