

DCA21FA174

OPERATIONAL FACTORS/HUMAN PERFORMANCE

Attachment 21

Rhoades Aviation Inc. CRM Training Materials

May 4, 2022

Henry Okai

3/27/2019

Initial

05/01/2020

Recurrent.

05/07/2021

Recurrent.

Greg Ryan

05/22/2019

Initial

08/05/2020

Recurrent

CRM

7.0 Flight Crewmember Cockpit Resource Management Training**7.1 General****7.1.1 Objective**

To increase the efficiency with which flight personnel perform by focusing on communication skills, teamwork, task allocation, and decision making. This training complies with AC 120-51 as revised.

7.1.2 Prerequisites

To be eligible for Cockpit Resource Management Training the flight crewmember must meet applicable minimum requirements specified in one of the initial aircraft curriculums.

7.1.3 Courseware

The subject material will be presented to the crewmember in the classroom. Instruction methods that will be utilized are to include any or all of the following: lectures, audio-visual programs, multimedia presentations, overhead projections, and printed handouts. A continuation of CRM exercises will be introduced in flight training through role- playing simulations, crew-centered observation, and providing usable feedback to crew. A written test will follow the completion of the curriculum.

7.2 Curricula**7.2.1 Initial**

Applicable Training Modules	Programmed Hour(s)
Cockpit Resource Management (CRM)	1
1) Background	
2) Definitions	
3) Human Factors	
Current Findings	.5
The Mission of CRM Training	.5
Basic Concepts of CRM	1
1) Crewmembers are a Team	
2) How to Behave in Ways that Foster Crew Effectiveness	
3) Practice the Skills Necessary to be Effective Team Leaders and Team Members	
4) Training Exercises in Respective Roles; PIC/ SIC	
5) Team Behaviors During Normal, Routine Operations	

Applicable Training Modules	Programmed Hour(s)
Performance Markers 1) Communication Processes and Decision Behavior a) Briefings i) Establishes an Environment for Open and Interactive Communications ii) Interactive iii) Establishes a Team Concept iv) Covers Pertinent Safety and Operational Issues v) Identifies Potential Problems Such as Weather, Delays, and Abnormal System Operations vi) Provides Guidelines for Crew Actions; Division of Labor and Crew Workload Addressed vii) Sets Expectations for Handling Deviations from Standard Operating Procedures viii) Establishes Guidelines for the Operation of Automated Systems ix) Specifies Pilot Flying and Pilot Not Flying Duties and Responsibilities with Regard to Automated Systems b) Inquiry/ Advocacy/ Assertion i) Crewmembers Speak Up and State Their Information with Appropriate Persistence Until There is Some Clear Resolution ii) Challenge and Response Environment is Developed iii) Questions are Encouraged and are Answered Openly and Non-Defensively iv) Crewmembers are Encouraged to Question the Actions and Decisions of Others v) Crewmembers Seek Help from Others When Necessary vi) Crewmember's Question Status and Programming of Automated Systems to Confirm Situational Awareness c) Crew Self-Critique (Decisions and Actions) i) Occurs at Appropriate Times, which May be Times of Low or High Workload ii) Involves the Whole Crew Interactively iii) Makes for a Positive Learning Experience. Feedback is Specific, Objective, Usable, and Constructively Given iv) Accepted Objectively and Non-Defensively d) Conflict Resolution i) Operational Decisions are Clearly Stated to Other Crewmembers ii) Crewmembers Acknowledge their Understanding of Decisions iii) Bottom Lines for Safety are Established and Communicated iv) The Big Picture and the Game Plan are Shared Within the Team and Others as Appropriate v) Crewmembers are Encouraged to State their Own Ideas, Opinions, and Recommendations vi) Efforts are Made to Provide an Atmosphere that Invites Open and Free Communications vii) Initial Entries and Changed Entries to Automated Systems are Verbalized and Acknowledged e) Communications and Decision Making	2
Team Building and Maintenance 1) Leadership/ Followership/ Concern for the Task a) All Available Resources are Used to Accomplish the Job at Hand b) Flight Deck Activities are Coordinated to Establish an Acceptable Balance Between Respect for Authority and the Appropriate Practice of Assertiveness c) Actions are Decisive When the Situation Requires d) A Desire to Achieve the Most Effective Operation Possible is Clearly Demonstrated e) The Need to Adhere to Standard Operating Practices are Recognized f) Group Climate Appropriate to the Operational Situation is Continually Monitored and Adjusted (For Example, Social Conversation may Occur During Low Workload, but not During Periods of High Workload) g) Effects of Stress and Fatigue on Performance are Recognized h) Time Available for the Task is Well Managed i) Demands on Resources Posed By Operation of Automated Systems are Recognized and Managed j) When Programming Demands Could Reduce Situational Awareness or Create a Higher than Necessary Level of Workload, Automation is Reduced Appropriately	1
Total Hours	6.00

7.2.2 Recurrent & Upgrade

Applicable Training Modules	Programmed Hour(s)
Cockpit Resource Management (CRM)	.2
1) Background	
2) Definitions	
3) Human Factors	
Current Findings	.5
The Mission of CRM Training	.2
Basic Concepts of CRM	.2
1) Crewmembers are a Team	
2) How to Behave in Ways that Foster Crew Effectiveness	
3) Practice the Skills Necessary to be Effective Team Leaders and Team Members	
4) Training Exercises in Respective Roles; PIC/ SIC	
5) Team Behaviors During Normal, Routine Operations	
Performance Markers	.5
1) Communication Processes and Decision Behavior	
a) Briefings	
b) Inquiry/ Advocacy/ Assertion	
c) Crew Self-Critique (Decisions and Actions)	
d) Conflict Resolution	
e) Communications and Decision Making	
Team Building and Maintenance	.4
1) Leadership/ Followership/ Concern for the Task	
Total Hours	2.00

Lesson Plan/Plan of Action for:
FLIGHT CREWMEMBER COCKPIT RESOURCE MANAGEMENT TRAINING

Objective:

To increase the efficiency with which flight personnel perform by focusing on communication skills, teamwork, task allocation, and decision making. The student(s) will demonstrate a thorough understanding of the duties and responsibilities associated with effective Cockpit Resource Management.

Courseware (current versions to be used):

Overhead Projector and/or Computer Video Projector
Computer (internet connection preferred)
Video – FAA: “The History of Crew Resource Management”
Video – CPaT: “Complacency”
Video – CPaT: “Threat and Error Management”
Video – CPaT: “American Airlines 965”
Video – CPaT: “American Airlines 1400”
Video – CPaT: “American Airlines 1420”
Video – CPaT: “Singapore Airlines 006”
AC 120-51E: Crew Resource Management Training
White board and Markers
GOM - General Operations Manual
FAA-H-8083-25A Pilots Handbook of Aeronautical Knowledge

Schedule:

Prepare Courseware	0:03
Cockpit Resource Management (CRM)	0:57
Current Findings	0:30
The Mission of CRM Training	0:30
Basic Concepts of CRM	1:00
Performance Markers	2:00
Team Building and Maintenance	1:00

Elements:

- Cockpit Resource Management (CRM)
- Current Findings
- The Mission of CRM Training
- Basic Concepts of CRM
- Performance Markers
- Team Building and Maintenance

Instructor Action/Content:

- 1) Discuss Cockpit Resource Management (CRM)
 - a. *Show and discuss FAA video: "The History of Crew Resource Management"*
 - b. Background
 - I. Investigations into the causes of air carrier accidents have shown that human error is a contributing factor in 60 to 80 percent of all air carrier incidents and accidents.
 - II. Industry and government have come to the consensus that training programs should place emphasis on the factors that influence crew coordination and the management of crew resources.
 - c. Definitions
 - I. Human Factors
 - i. The multidisciplinary field of human factors is devoted to optimizing human performance and reducing human error.
 - ii. It is the applied science that studies people working together in concert with machines.
 - II. CRM Training
 - i. CRM refers to the effective use of all available resources: human resources, hardware, and information.
 - ii. CRM training is one way of addressing the challenge of optimizing the human/machine interface and accompanying interpersonal activities.
 - iii. CRM training is comprised of three components: initial indoctrination/awareness, recurrent practice and feedback, and continual reinforcement.
- 2) Discuss Current Findings
 - a. Continuing NASA and FAA measurements of the impact of CRM training show that after initial indoctrination, significant improvement in attitudes occurs regarding crew coordination and flight deck management. In programs that also provide recurrent training and practice in CRM concepts, significant changes have been recorded in flightcrew performance during line-oriented flight training (LOFT) and during actual flight. CRM-trained crews operate more effectively as teams and cope more effectively with nonroutine situations.
 - b. Research also shows that when there is no effective reinforcement of CRM concepts by way of recurrent training, improvements in attitudes observed after initial indoctrination tend to disappear, and individuals' attitudes tend to revert to former levels.

- 3) Discuss The Mission of CRM Training
 - a. CRM training has been conceived to prevent aviation accidents by improving crew performance through better crew coordination.
- 4) Discuss Basic Concepts of CRM
 - a. Crewmembers are a Team
 - b. How to Behave in Ways that Foster Crew Effectiveness
 - c. Practice the Skills Necessary to be Effective Team Leaders and Team Members
 - d. Training Exercises in Respective Roles; PIC/SIC
 - e. Team Behaviors During Normal, Routine Operations
- 5) Discuss Performance Markers
 - a. Communication Process and Decision Behavior
 - I. *Show and discuss CPaT video: "American Airlines 965"*
 - II. Briefings
 - i. Establishes an Environment for Open and Interactive Communications
 - ii. Interactive
 - iii. Establishes a Team Concept
 - iv. Covers Pertinent Safety and Operational Issues
 - v. Identifies Potential Problems such as Weather, Delays, and Abnormal System Operations
 - vi. Provides Guidelines for Crew Actions; Division of Labor and Crew Workload Addressed
 - vii. Sets Expectations for Handling Deviations from Standard Operating Procedures
 - viii. Establishes Guidelines for the Operation of Automated Systems
 - ix. Specified Pilot Flying and Pilot Not Flying Duties and Responsibilities with Regard to Automated Systems
 - III. Inquiry / Advocacy / Assertion
 - i. *Show and discuss CPaT video: "Complacency"*
 - ii. Crewmembers Speak Up and State Their Information with Appropriate Persistence Until There is Some Clear Resolution
 - iii. Challenge and Response Environment is Developed

- iv. Questions are Encouraged and are Answered Openly and Non-Defensively
 - v. Crewmembers are Encouraged to Question the Actions and Decisions of Others
 - vi. Crewmembers Seek Help from Others When Necessary
 - vii. Crewmember's Question Status and Programming of Automated Systems to Confirm Situational Awareness
- IV. Crew Self Critique
 - i. *Show and discuss CPaT video: "American Airlines 1420"*
 - ii. Occurs at Appropriate Times, which May be Times of Low or High Workload
 - iii. Involves the Whole Crew Interactively
 - iv. Makes for a Positive Learning Experience. Feedback is Specific, Objective, Usable, and Constructively Given
 - v. Accepted Objectively and Non-Defensively
- V. Conflict Resolution
 - i. *Show and discuss CPaT video: "Threat and Error Management"*
 - ii. Operational Decisions are Clearly Stated to Other Crewmembers
 - iii. Crewmembers Acknowledge their Understanding of Decisions
 - iv. Bottom Lines for Safety are Established and Communicated
 - v. The Big Picture and the Game Plan are Shared Within the Team and Others as Appropriate
 - vi. Crewmembers are Encouraged to State their Own Ideas, Opinions, and Recommendations
 - vii. Efforts are Made to Provide an Atmosphere that Invites Open and Free Communications
 - viii. Initial Entries and Changed Entries to Automated Systems are Verbalized and Acknowledged
- VI. Communications and Decision Making
 - i. *Show and discuss CPaT video: "Singapore Airlines 006"*

6) Discuss Team Building and Maintenance

a. Leadership / Followership / Concern for the Task

- I. *Show and discuss CPaT video: "American Airlines 1400"*
- II. All available Resources are Used to Accomplish the Job at Hand
- III. Flight Deck Activities are Coordinated to Establish an Acceptable Balance Between Respect for Authority and the Appropriate Practice of Assertiveness
- IV. Actions are Decisive When the Situation Requires
- V. A Desire to Achieve the Most Effective Operation Possible is Clearly Demonstrated
- VI. The Need to Adhere to Standard Operating Practices are Recognized
- VII. Group Climate Appropriate to the Operational Situation is Continually Monitored and Adjusted (For Example, Social Conversation may Occur During Low Workload, but not During Periods of High Workload)
- VIII. Effects of Stress and Fatigue on Performance are Recognized
- IX. Time Available for the Task is Well Managed
- X. Demands on Resources Posed By Operation of Automated Systems are Recognized and Managed
- XI. When Programming Demands Could Reduce Situational Awareness or Create a Higher than Necessary Level of Workload, Automation is Reduced Appropriately

Student Action:

Take notes, participate in discussion, and answer oral questions during the training period as the following lesson topics are covered-

- Cockpit Resource Management (CRM)
- Current Findings
- The Mission of CRM Training
- Basic Concepts of CRM
- Performance Markers
- Team Building and Maintenance

Completion Standards:

The student(s) will demonstrate a thorough understanding of the duties and responsibilities associated with effective Cockpit Resource Management by correctly answering oral questions given randomly throughout the lesson and successfully passing a written exam.

Lesson Plan/Plan of Action for:
FLIGHT CREWMEMBER COCKPIT RESOURCE MANAGEMENT TRAINING

Objective:

To increase the efficiency with which flight personnel perform by focusing on communication skills, teamwork, task allocation, and decision making. The student(s) will demonstrate a thorough understanding of the duties and responsibilities associated with effective Cockpit Resource Management.

Courseware (current versions to be used):

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Video – CPaT: “American Airlines 965”
AC 120-51E: Crew Resource Management Training
White board and Markers
GOM - General Operations Manual
FAA-H-8083-25A Pilots Handbook of Aeronautical Knowledge

Schedule: (2.0 hours total)

Prepare Courseware
Cockpit Resource Management (CRM)
Current Findings
The Mission of CRM Training
Basic Concepts of CRM
Performance Markers
Team Building and Maintenance
Review and Testing

Elements:

- Cockpit Resource Management (CRM)
- Current Findings
- The Mission of CRM Training
- Basic Concepts of CRM
- Performance Markers
- Team Building and Maintenance

Instructor Action/Content:

- 1) Discuss Cockpit Resource Management (CRM)
 - a. Show and discuss FAA video: "The History of Crew Resource Management" (:25)
 - b. Background
 - I. Investigations into the causes of air carrier accidents have shown that human error is a contributing factor in 60 to 80 percent of all air carrier incidents and accidents.
 - II. Industry and government have come to the consensus that training programs should place emphasis on the factors that influence crew coordination and the management of crew resources.
 - c. Definitions
 - I. Human Factors
 - i. The multidisciplinary field of human factors is devoted to optimizing human performance and reducing human error.
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 - ii. CRM training is one way of addressing the challenge of optimizing the human/machine interface and accompanying interpersonal activities.
 - iii. CRM training is comprised of three components: initial indoctrination/awareness, recurrent practice and feedback, and continual reinforcement.
- 2) Discuss Current Findings
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 - b. Research also shows that when there is no effective reinforcement of CRM concepts by way of recurrent training, improvements in attitudes

observed after initial indoctrination tend to disappear, and individuals' attitudes tend to revert to former levels.

3) Discuss The Mission of CRM Training

- a. CRM training has been conceived to prevent aviation accidents by improving crew performance through better crew coordination.

4) Discuss Basic Concepts of CRM

- a. Crewmembers are a Team
- b. How to Behave in Ways that Foster Crew Effectiveness
- c. Practice the Skills Necessary to be Effective Team Leaders and Team Members
- d. Training Exercises in Respective Roles; PIC/SIC
- e. Team Behaviors During Normal, Routine Operations

5) Discuss Performance Markers

- a. Communication Process and Decision Behavior

- I. Show and discuss CPaT video: "American Airlines 965" (:11)

- II. Briefings

- i. Establishes an Environment for Open and Interactive Communications
 - ii. Interactive
 - iii. Establishes a Team Concept
 - iv. Covers Pertinent Safety and Operational Issues
 - v. Identifies Potential Problems such as Weather, Delays, and Abnormal System Operations
 - vi. Provides Guidelines for Crew Actions; Division of Labor and Crew Workload Addressed
 - vii. Sets Expectations for Handling Deviations from Standard Operating Procedures
 - viii. Establishes Guidelines for the Operation of Automated Systems
 - ix. Specified Pilot Flying and Pilot Not Flying Duties and Responsibilities with Regard to Automated Systems

- III. Inquiry / Advocacy / Assertion

- i. Crewmembers Speak Up and State Their Information with Appropriate Persistence Until There is Some Clear Resolution

- ii. Challenge and Response Environment is Developed
- iii. Questions are Encouraged and are Answered Openly and Non-Defensively
- iv. Crewmembers are Encouraged to Question the Actions and Decisions of Others
- v. Crewmembers Seek Help from Others When Necessary
- vi. Crewmember's Question Status and Programming of Automated Systems to Confirm Situational Awareness
- IV. Crew Self Critique
 - i. Occurs at Appropriate Times, which May be Times of Low or High Workload
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 - iv. Accepted Objectively and Non-Defensively
- V. Conflict Resolution
 - i. Operational Decisions are Clearly Stated to Other Crewmembers
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 - v. Crewmembers are Encouraged to State their Own Ideas, Opinions, and Recommendations
 - vi. Efforts are Made to Provide an Atmosphere that Invites Open and Free Communications
 - vii. Initial Entries and Changed Entries to Automated Systems are Verbalized and Acknowledged
- VI. Communications and Decision Making

6) Discuss Team Building and Maintenance

- a. Leadership / Followership / Concern for the Task
 - I. All available Resources are Used to Accomplish the Job at Hand

- II. Flight Deck Activities are Coordinated to Establish an Acceptable Balance Between Respect for Authority and the Appropriate Practice of Assertiveness
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- V. The Need to Adhere to Standard Operating Practices are Recognized
- VI. Group Climate Appropriate to the Operational Situation is Continually Monitored and Adjusted (For Example, Social Conversation may Occur During Low Workload, but not During Periods of High Workload)
- VII. Effects of Stress and Fatigue on Performance are Recognized
- VIII. Time Available for the Task is Well Managed
- IX. Demands on Resources Posed By Operation of Automated Systems are Recognized and Managed
- X. When Programming Demands Could Reduce Situational Awareness or Create a Higher than Necessary Level of Workload, Automation is Reduced Appropriately

Student Action:

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- Team Building and Maintenance

Completion Standards:

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Scenario Based Training

Leg 1 HNL-OGG

HNL ATIS K: 35010KT 1/2SM OVC002 27/26 A2986 LNDG/DEPG RWYS 4/8

OGG ATIS C: 19011KT 1 1/2SM OVC005 28/26 A2988 LNDG/DEPG RWYS 20/23

Fuel: 15,000lbs

ZFW: Set so OGG landing weight after go around and some holding time will be 100,000lbs

1. Taxi out and depart from runway 8R.
 2. Fly north side of Molokai.
 3. Vectors onto arc for VOR Z Rwy 20.
 4. Crew gets flaps problem as they configure for landing (flaps stuck at 0).
 5. ATC instructs crew to fly to OGG then outbound on 024 radial and hold at CAMPS as published (on ILS Rwy 2 chart)
 6. **OGG ATIS D:** 04015KT 3SM OVC010 30/26 A2990 LDG/DEPG RWYS 02/05
 7. Crew should run QRH procedure for flaps stuck at 0 and refer to landing distance chart.
 8. Crew has to decide to land at OGG or return to HNL. HNL weather is still info K. If crew calls dispatch, dispatch will call maintenance and tell them they would prefer the plane back in HNL.
 9. If crew decides to land in OGG, clear them for the ILS.
 10. If crew decided to return to HNL, vector them back to ILS Y 4R or ILS 8L.
-

Leg 2 KOA-HNL

KOA ATIS V: 04022KT 10SM SCT160 SCT220 32/20 LNDG/DEPG RWY 35

OGG ATIS P: 04015G20KT 1/2SM OVC002 +RA 29/26 LNDG/DEPG RWY 02/05

HNL ATIS E: 04019KT 10SM SCT080 31/25 LNDG/DEPG RWY 04/08

1. Taxi out and depart from runway 35.
2. ATC gives crew vectors to join V20 and instructs to expedite climb to FL220 for traffic.
3. 10 miles east of HOKLA, crew gets reverser unlocked.
4. Crew should run QRH procedure.
5. KOA is closed due to disabled aircraft on the runway. HNL is reporting information E and OGG is reporting information P.
6. Crew has to decide whether to divert to OGG or continue to HNL.

LOFT

Aircrew Training Manual

Rhoades Aviation, Inc.

(ATM)

Revision: 16
Date: 11/15/2020

13.3.9 FLT-TM 9: Qualification LOFT (Line Oriented Flight Training)

Instructional Delivery Method: Simulator
Instructor Qualification: Flight Instructor – Simulator
LOFT Category: Qualification
Minimum Acceptable Crew: Full Crew Required
Minimum Acceptable Device: Level C Simulator

P I C	S I C	Training Elements/Events
Y	Y	Includes at least the maneuvers and procedures (non-normal/emergency) that may be expected in line operations and is representative of at least two flight segments appropriate to the operations being conducted by RAI to facilitate the transition from flight simulation to operational flying by integrating technical knowledge, flying skills, procedural knowledge, and CRM into the operational environment, as well as provide an opportunity for each pilot to demonstrate workload management and pilot monitoring skills. One of the flight segments must contain strictly normal operating procedures from pushback at one airport until arrival at the gate at another. Another flight segment must contain appropriate abnormal and emergency flight operations.
LOFT Scenarios		
Y	Y	Selected procedures are designated by the Director of Training. A copy will be on file in the Director of Training office and a copy will be provided to the FAA POI.
LOFT (4.0 Hours):		
Y	Y	Crew Briefings
Y	Y	Preflight
Y	Y	Taxi Out
Y	Y	Takeoff
Y	Y	Climb
Y	Y	En Route/Cruise
Y	Y	Descent
Y	Y	Landing
Y	Y	Taxi In
Y	Y	Crew Debriefings

- When only one trainee participates in Qualification LOFT, that trainee should receive full credit (4.0 hours), provided all of the following conditions are met.
 - The LOFT session conforms to the minimum 4-hour formal described in this subsection, and
 - At least 2 1/2 hours are spent in the LOFT flight.
- Qualification LOFT requires a complete crew complement. It is preferable to schedule a crewmember, who is qualifying, with other crewmembers who are fully line-qualified. As a minimum, LOFT crewmembers will be task familiar with their assigned duty position. The use of substitutes is highly discouraged and substitution should be implemented rarely. When the composition of the scheduled crew cannot be maintained, substitutions may be used based on the following table:

Qualification LOFT Substitution Table	
Pilot-In-Command Position	Second-In-Command Position
PIC ¹	SIC ¹
SIC ¹	PIC ¹
Pilot Instructor ²	Pilot Instructor ²

¹ Includes those who are either line-qualified, or in training, and are task familiar with the position in which they are substituting.

² An instructor (aircraft or simulator) as provided for under 14 CFR part 121, section 121.412. 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.

13.3.10 FLT-TM 10: Recurrent LOFT (Line Oriented Flight Training)

Instructional Delivery Method:	Simulator
Instructor Qualification:	Flight Instructor – Simulator
LOFT Category:	Recurrent
Minimum Acceptable Crew:	Full Crew
Minimum Acceptable Device:	Level C Simulator
PIC/SIC Training Frequency:	Alternating proficiency checks/approved courses of training may be conducted in accordance with 14 CFR 121.441
	Satisfactory completion of Recurrent LOFT may be substituted for the proficiency check [14 CFR 121.415(c), 14 CFR 121.427, 14 CFR 121.441]

PIC	SIC	Training Elements/Events
Y	Y	Includes at least the maneuvers and procedures (non-normal/emergency) that may be expected in line operations and is representative of at least two flight segments appropriate to the operations being conducted by RAI to allow each crewmember to maintain proficiency in the type of aircraft and crewmember duty position involved by practicing both technical and CRM skills in an uninterrupted real world "line" environment. The flightcrew must perform at least one taxi-out and one taxi-in. Additional segments need only consist of takeoff, climb, en route, descent, and landing. This module must also include scenario-based or maneuver-based stall prevention training (approach to stall) before, during, or after the LOFT scenario for each pilot.
LOFT Scenarios		
Y	Y	Selected procedures are designated by the Director of Training. A copy will be on file in the Director of Training office and a copy will be provided to the FAA POI.
LOFT (4.0 Hours):		
Y	Y	Crew Briefings
Y	Y	Preflight
Y	Y	Taxi Out
Y	Y	Takeoff
Y	Y	Climb
Y	Y	En Route
Y	Y	Scenario-based or maneuver-based stall prevention training for each pilot before, during, or after the LOFT scenario
Y	Y	Descent
Y	Y	Landing
Y	Y	Taxi In
Y	Y	Crew Debriefings

1. For Recurrent LOFT, when the crew consists of two PIC trainees or two SIC trainees, both pilots should receive full credit (4.0 hours), provided all of the following conditions are met.
 - a. LOFT session conforms to the minimum 4-hour format described in this subsection.
 - b. At least 2 1/2 hours are spent in the LOFT flight, and
 - c. Pilots swap seats at approximately the midpoint of the LOFT flight segment.

2. Recurrent LOFT stresses scheduling of a complete crew who should be line-qualified. The use of substitutions is discouraged, and substitution should be rare. When the composition of the scheduled line-qualified crew cannot be maintained, substitutions may be used based on the following table:

Recurrent LOFT Substitution Table	
PIC Position	SIC Position
PIC ¹	SIC ¹
SIC ²	PIC ¹
Pilot Instructor ³	Pilot Instructor ³

¹ Includes those who are either line-qualified, or in training, and are line and task familiar with the position in which they are substituting.

² An SIC may be substituted for this position if the pilot has received a type certificate in the aircraft the simulator replicates.

³ An instructor (aircraft or simulator) as provided for under 14 CFR part 121, section 121.412. 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.

Scenario Based Training

Leg 1 HNL-OGG

HNL ATIS K: 35010KT 1/2SM OVC002 27/26 A2986 LNDG/DEPG RWYS 4/8

OGG ATIS C: 19011KT 1 1/2SM OVC005 28/26 A2988 LNDG/DEPG RWYS 20/23

Fuel: 15,000lbs

ZFW: Set so OGG landing weight after go around and some holding time will be 100,000lbs

1. Taxi out and depart from runway 8R.
 2. Fly north side of Molokai.
 3. Vectors onto arc for VOR Z Rwy 20.
 4. Crew gets flaps problem as they configure for landing (flaps stuck at 0).
 5. ATC instructs crew to fly to OGG then outbound on 024 radial and hold at CAMPS as published (on ILS Rwy 2 chart)
 6. **OGG ATIS D:** 04015KT 3SM OVC010 30/26 A2990 LDG/DEPG RWYS 02/05
 7. Crew should run QRH procedure for flaps stuck at 0 and refer to landing distance chart.
 8. Crew has to decide to land at OGG or return to HNL. HNL weather is still info K. If crew calls dispatch, dispatch will call maintenance and tell them they would prefer the plane back in HNL.
 9. If crew decides to land in OGG, clear them for the ILS.
 10. If crew decided to return to HNL, vector them back to ILS Y 4R or ILS 8L.
-

Leg 2 KOA-HNL

KOA ATIS V: 04022KT 10SM SCT160 SCT220 32/20 LNDG/DEPG RWY 35

OGG ATIS P: 04015G20KT 1/2SM OVC002 +RA 29/26 LNDG/DEPG RWY 02/05

HNL ATIS E: 04019KT 10SM SCT080 31/25 LNDG/DEPG RWY 04/08

1. Taxi out and depart from runway 35.
2. ATC gives crew vectors to join V20 and instructs to expedite climb to FL220 for traffic.
3. 10 miles east of HOKLA, crew gets reverser unlocked.
4. Crew should run QRH procedure.
5. KOA is closed due to disabled aircraft on the runway. HNL is reporting information E and OGG is reporting information P.
6. Crew has to decide whether to divert to OGG or continue to HNL.

Class Review

Crew Resource Management Training



After a crewmember brings a problem to the attention of other crewmembers, he or she should not offer a solution until all crewmembers agree on the problem.

- True or *False*?



Persons attending CRM must know that *information must be requested, offered, or given freely in a timely way* to permit accurate, effective decision-making.



The six-step CRM process breaks down typical communication barriers by *focusing on the crew as a whole with a common goal.*

The six steps are:

1. Using inquiry to evaluate procedure.
2. *Using advocacy to respectfully question authority.*
3. Using conflict resolution techniques to learn from errors.
4. *Observing and critiquing team decisions to meet mission goals.*
5. Fostering an open and accepting crew environment, where members discuss options for team improvements.
6. *Using strong leadership to make group decisions*



Crew Resource Management enables public safety teams to make the right decisions in the field quickly, safely, and as a team. CRM stresses the importance of ***having strong leadership in place*** to guide a team's decision-making process, while ***encouraging individual team members to share critical information*** to help the team leader make the correct decisions during an emergency.



In *decision making*, some of the markers are?

a) Identify the problem

b) Collect the facts

c) Identify alternatives

d) Implement response



Some of the markers for *effective Crew Resource Management* are?

a) Situational Awareness

b) Communications

c) Decision Making

d) Workload Management



Used primarily for improving *air safety*, CRM focuses on interpersonal communication, leadership, and decision making in the cockpit.



The primary goal of CRM is NOT enhanced communication, but rather enhanced *Situational Awareness*.



CRM training originated from a *NASA workshop* in 1979 which found that the *primary cause* of most aviation accidents was *human error*.



Crew Resource Management is a procedure and training course where *Human Reliability* can have devastating effects.

