

**Air Carrier Training Aviation Rulemaking Committee (ACT ARC)**

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**Recommendation 16-2: Facilitator Training to Deliver Cross-Functional CRM Training**

**I. Submission**

The recommendation below was submitted by the Crew Resource Management Enhancement Workgroup (CRM WG) for consideration by the Air Carrier Training Aviation Rulemaking Committee (ACT ARC) Steering Committee at F2F-8. The ACT ARC Steering Committee adopted the recommendations with unanimous consent, and they are submitted to the Associate Administrator for Aviation Safety (AVS-1) as ACT ARC Recommendation 16-2.

**II. Statement of the Problem**

Multiple regulations in Title 14 of the Code of Federal Regulations (14 CFR), Part 121 require certificate holders to have approved crew resource management (CRM) training programs that include both initial and recurrent training. The Federal Aviation Administration (FAA) has published several Advisory Circulars (AC) to assist certificate holders in developing, implementing, reinforcing, and assessing CRM training for flight crewmembers, flight attendants, aircraft dispatchers, maintenance personnel, air medical personnel, and other personnel essential for flight safety.

AC 120-51E, Crew Resource Management Training (1/22/04), references the critical role and necessary skills for people who administer CRM training and measure its effectiveness. The AC also notes that instructors, supervisors, check pilots, and course designers require an additional level of training related to the practice and assessment of CRM, as well as special training to calibrate and standardize their own skills. Gaining proficiency and confidence in CRM instruction, observation, and measurement requires specialized training for instructors, supervisors, and check pilots in many CRM training processes.

Recognizing that enhancing safety requires a proactive approach, the CRM WG was formed to recommend updates and/or improvements to current CRM/dispatch resource management (DRM) guidance in order to enhance the current CRM training.

When the AC was promulgated, joint CRM training was addressed as a CRM concept to emphasize effectiveness and safety of the entire operations team as a working system. The Steering Committee asked the CRM WG to study and address the topic of cross-functional CRM training and the current methods used to deliver cross-functional CRM training, including joint training. Current guidance does not address cross-functional CRM training.

The CRM WG noted that while the AC addressed the critical role of other CRM trainers and evaluators, it does not adequately address specific training content for CRM facilitators as it relates to cross-functional CRM training concepts nor does it address the performance measurement and evaluation of the CRM training system. Specific guidance for cross-functional CRM facilitators is necessary to enhance safety and further emphasize the interactions and communications between the different workgroups within the organization. Furthermore, cross-functional CRM facilitator training performance should be assessed as part of the overall CRM training system.

While the CRM WG acknowledges that similar principles can be applied to other groups that regularly work with pilots, flight attendants, and aircraft dispatchers (e.g. ATC, Maintenance), these recommendations are limited to pilot, flight attendant and aircraft dispatcher cross-functional CRM facilitator training in order to remain within the scope of work assigned by the ACT ARC Steering Committee. The CRM WG also notes that Proposed Recommendation CRM-1 is limited to cross-functional CRM facilitator training. Applicability of the recommended content for cross-functional CRM facilitator training may have merit in relation to other types of CRM trainer/evaluator/facilitator training (including trainers/facilitators who conduct workgroup-specific CRM training), but requires further review that is outside the scope of the CRM WG tasking as assigned by the Steering Committee.

The CRM WG will follow-up with specific recommendations regarding the development and implementation of cross-functional CRM training in the near future.

### **III. Proposed Recommendation**

The ACT ARC submits the following recommendation for FAA consideration:

The ACT ARC recommends the FAA develop advisory guidance for industry stakeholders (e.g., Advisory Circular) that includes the suggested methodology for developing specialized training for cross-functional CRM facilitators on the delivery of training to pilots, flight attendants, and aircraft dispatchers.

(See Attachment A: Sample Content and Concepts for Cross-Functional CRM Facilitator Training)

The following general principles and foundational assumptions apply to the recommendation presented above:

- Cross-functional CRM facilitators should receive specialized training, including the topics listed in Attachment A.
- Air Carriers should conduct a comprehensive review of current cross-functional CRM facilitator training to ensure that the concepts in Attachment A are incorporated.
- The Air Carrier is encouraged to utilize line familiar pilots, flight attendants, and aircraft dispatchers to facilitate cross-functional CRM training that are trained in the specialized concepts in Attachment A.

### **IV. Rationale**

The CRM WG reviewed current regulatory requirements and guidance material related to CRM training and discussed a number of best practices that led to the development of the recommendation concerning cross-functional CRM facilitator training listed above. The working group focused on cross-functional CRM training for pilots, flight attendants, and aircraft dispatchers.

CRM training has become an integral part of each organization and resulted in a broad range of training related to consolidation of knowledge, skills, and performance to manage safety in routine operations, as well as in emergency situations. One option of consolidating knowledge and performance is by using cross-functional training among workgroups.

Cross-functional CRM training focuses on the functioning of the crew as a team, rather than as a collection of technically competent individuals. The success of any effective cross-functional CRM training program depends on the skill of proficient facilitators to help the CRM student understand the roles and responsibilities of others, and how those skills can be used to identify and mitigate risks. Facilitating discussions about these interpersonal skills may be more difficult than relaying technical knowledge.

A strong cross-functional CRM facilitator better synthesizes understanding and responses to CRM behaviors/activity. Likewise, even if an effective curriculum is developed, an ineffective or ill-prepared facilitator can result in undesirable CRM training outcomes. Therefore the quality of cross-functional CRM training has a better chance for success with clear guidance to air carriers on the need for effective facilitator skills.

The cross-functional CRM facilitator suggested requirements in Attachment A are based on similar concepts and lessons learned from multiple air carrier training programs.

## **V. Background Information**

Proposed Recommendation CRM-1 partially addresses the CRM WG Scope of Work and Initiative #3 assigned to the CRM WG:

### CRM WG Scope of Work:

- Suggested training to ensure the CRM Facilitator has the necessary skills to deliver effective CRM training.

### Steering Committee Initiative:

Initiative #3: Revise guidance and training for pilots and flight attendants on communications during emergency and unusual situations to reflect current industry knowledge.

## Attachment A: Sample Content and Concepts for Cross-Functional CRM Facilitator Training

### I. GENERAL.

The success of any crew resource management (CRM) training for pilots, flight attendants and aircraft dispatchers ultimately depends on the skills of the people who administer the training and measure its effects. CRM facilitators, supervisors, and curriculum developers must be skilled in all areas related to the practice and debriefing of CRM training and assessment of program effectiveness. These skills comprise an additional level to those associated with technical instruction. Air carriers should devote appropriate time and resources to the training of these key personnel.

Multiple levels of management (e.g. senior, flight operations, inflight, flight standards) should have a general understanding of the concepts of CRM so they can fully support the program and provide the necessary resources for employee training and facilitator training. It should be understood that a general understanding does not equate to the higher level of cross-functional CRM facilitator training proposed in this attachment.

Gaining proficiency and confidence in cross-functional CRM instruction, observation, and measurement of program success requires specialized CRM facilitator training. In general terms, the added competencies involve conducting role-playing simulations, effectively facilitating discussions, providing usable feedback, and motivating pilots, flight attendants, and aircraft dispatchers.

Cross-functional CRM training provides opportunities for multiple workgroups to examine and practice their skills and knowledge to effectively manage interaction between workgroups in routine and abnormal/emergency operations.

Air carriers should compare the list of topics in this cross-functional CRM facilitator curriculum with their current CRM instructor/trainer specific training to determine if these topics are currently covered. If not, this curriculum should be used to develop more focused specialized cross-functional CRM facilitator training.

### II. CROSS-FUNCTIONAL CRM FACILITATOR CURRICULUM.

Each cross-functional CRM facilitator should receive training, including in-depth knowledge related to the following topics. Air carriers should also provide periodic continuous improvement training as necessary on the topics.

#### A. Cross-Functional CRM Facilitator Skills

##### 1. Facilitation skills

- Ability to stimulate thinking through effective discussion and questions
- Ability to engage with all training participants and inspire safety
- Ability to emphasize the relevance of the real-world benefits
- Ability to share experiences that illuminate the training content
- Ability to offer appropriate feedback
- Ability to guide student self-evaluation to proactively change behavior if necessary
- Sufficient workgroup-specific CRM and operational knowledge to answer questions in-depth to highlight learning objectives
- Ability to expound upon student experience and adapt the experience to illustrate learning objectives

2. Scenario management skills, if relevant to the material
    - Inside-out understanding of the scenario and likely student actions that may occur in the scenario
    - Ability to improvise when students inadvertently move outside the parameters of the scenario
    - Ability to create a climate that encourages trainees to participate fully
    - Ability to foster a training environment that allows open and honest discussion and participation
    - Ability to get buy in to rules of engagement (i.e. have fun, but pretend it is real)
    - Ability to role play/demonstrate effective CRM skills/behaviors when necessary (i.e., introduce a skill or correct a bad role play)
  3. Understanding how human capabilities and limitations can affect interactions and outcomes in cross-functional CRM. Some of those include:
    - Memory, including prospective memory
    - Communication in critical situations
    - Cognitive biases, tunnel vision
    - Concurrent task management (workload, distraction)
    - Psycho-social factors (teamwork, organizational and cultural barriers)
    - Decision making (decision rigidity, time pressures)
    - Risk management
    - Physiological factors (fatigue)
    - Ergonomic factors (particularly as they relate to man/machine interface)
- B. Knowledge and understanding of the different applicable workgroups (domains)
1. Roles and responsibilities of each workgroup and/or crewmember position
    - Pilots (Captain/PIC, First Officer/SIC)
    - Flight attendant(s)
    - Aircraft dispatcher(s)
  2. Decision making priorities
  3. De-mystifying or correcting common misperceptions
  4. Realistic expectations for each domain and understanding the types and consequences of off-nominal conditions/situations which have the potential to degrade the system for each workgroup such as:
    - Routine and non-routine breakdowns in common ground
    - Unanticipated tasks
    - Distractions
    - Environmental Challenges
    - Equipment Challenges
    - Situationally-forced deviations from normal work flow (Atypical situations)

## C. General Knowledge

Each cross-functional CRM facilitator should also have a general knowledge of the following two topics to further assist the facilitator to proactively understand and manage the interactions between the different workgroups.

### 1. Historical perspective of CRM frameworks

CRM facilitators should have knowledge of the different CRM “frameworks” in order to understand and avoid the common miscommunications and misunderstandings that can occur when individuals talk about “CRM” but are really talking about the different “CRM frameworks.” CRM facilitators must also have knowledge of each phase in order to effectively reinforce the overarching and continuing concept of CRM.<sup>1</sup>

- (a) Individual Management Styles (1980–1986)
  - Psychological testing, non-aviation exercises, LOFT
- (b) Improving Team Performance (1986–)
  - Behavioral markers, breaking the error chain
- (c) Organizational Inclusion and Culture (1993– )
  - Flight attendants, aircraft dispatchers, corporate practices
- (d) Proceduralized CRM (Advanced CRM, or ACRM) (1994–)
  - CRM integrated into checklists; bottom lines & back up plans
- (e) Error Management Training (EMT) (1996– )
  - Errors resisted and resolved
- (f) Threat and Error Management (TEM) (2000– )
  - Errors avoided, resisted and resolved

### 2. Safety Programs

Knowledge related to the state of the organization can help determine priorities for topics to be included in cross-functional CRM training. It is therefore important to have knowledge of multiple programs, if active at the air carrier, that can also be used as supplemental data sources for training priorities. These include, but are not limited to:

- (a) Safety Management System (SMS);
- (b) Other voluntary reporting programs such as Aviation Safety Action Program (ASAP) and Flight Operational Quality Assurance (FOQA); and
- (c) Other training and evaluation programs such as Advanced Qualification Program (AQP) and Line-Oriented Flight Training (LOFT).

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<sup>1</sup> The Steering Committee asked that a reference be added to background material explaining the First through Fifth generations of CRM, which is the source material for this suggested training module. (See Helmreich, R.L., Merritt, A.C., & Wilhelm, J.A. (1999). The Evolution of Crew Resource Management Training in Commercial Aviation. *International Journal of Aviation Psychology*, 9(1), 19-32. (<http://lessonslearned.faa.gov/L1011Everglades/crmhistory.pdf>))