

# **APPLIED RESEARCH**

## **Advanced Crew Resource Management (ACRM)**

### **ACRM Training Manual**

The [ACRM Training Manual](#) (PDF) is organized around the steps an airline would follow to develop an ACRM training program. Those steps are based on the key elements of ACRM training development. The first two parts present background and introductory information an airline should consider prior to starting the development of a training program. The next four parts, Part 3 through Part 6, describe the actual steps, starting with the development of the CRM procedures to their implementation. The remainder of the document contains examples to guide and support the development process.

Page last modified: March 16, 2015 2:32:43 PM EDT

### **Advanced Crew Resource Management (ACRM) Training**

U.S. airlines have implemented Crew Resource Management (CRM) training with an emphasis on principles and concepts that improve crew performance and flight safety. This has resulted in crew requirements that have been trained and assessed as additions to, rather than as part of, Standard Operating Procedure (SOP). Advanced Crew Resource Management (ACRM) provides a more integrated form of CRM by incorporating CRM practices with normal and emergency SOP.

ACRM is a comprehensive implementation package including the CRM procedures, training of the instructor/evaluators, training of the crews, a standardized assessment of crew performance,

and an ongoing implementation process. ACRM has been designed and developed through a collaborative effort between the airline and research community. ACRM training is an ongoing development process that provides airlines with unique CRM solutions tailored to their operational demands. Design of CRM procedures is based on critical CRM principles that require emphasis in airline's specific operational environment. Procedures were developed to emphasize these CRM elements by incorporating them into SOPs for normal as well as abnormal and emergency flight situations.

ACRM is an ongoing, dynamic, development process and should not be confused with a single set of products. The Manual does present some products of the ACRM training development process, but these are to be used as examples only and should not be used as a substitute for the process. Reproducing a briefing card from another airline will not, by itself, produce the type of organization change that the ACRM training development process can.

Page last modified: March 19, 2013 7:38:51 PM EDT

## **FAA Evaluation of ACRM Training**

The Federal Aviation Administration (FAA) has sponsored a Grant, Analysis of CRM Procedures in a Regional Air Carrier, conducted by a team including George Mason University and Subject Matter Experts (SMEs) from a regional airline, a major airline, and other research organizations. The Grant is in the process of evaluating the effectiveness of CRM procedures in a regional airline environment. Both the airline and the FAA are interested in determining whether the implementation of CRM procedures can improve overall crew performance. Under the Grant, the regional airline's key CRM principles were translated into procedures that have been implemented through ACRM training. The regional airline involved in this Grant was authorized to develop an innovative approach to crew training and assessment under the Advanced Qualification Program (AQP).

The results of this Grant have significant ramifications for flight crew training, specifically in the area of integrated CRM and technical skill training. The airlines have not had the capability to perform detailed assessments of CRM skill training, nor have they had the ability to assess different forms of CRM training. The results of this Grant provide guidelines for the training of CRM procedures (see Appendix A for a complete list of the guidelines) as well as a framework for the assessment of skill-based crew performance. With this capability to train and assess CRM performance, airlines can become proactive and improve training based on the assessment data rather than having to rely exclusively on accident and incident information.

Page last modified: March 19, 2013 7:38:51 PM EDT

# **Key Elements of ACRM Training**

Key elements of an ACRM program are the development of CRM procedures, training of the instructor/evaluators, training of the fleet crews, and assessment of crew performance based on the airline's operational environment. Supporting elements to the development of ACRM training include the survey forms, changes to the Flight Operations Manual (FOM), Flight Standards Manual (FSM), and Quick Reference Handbook (QRH), the Line Oriented Flight Training/Line Operational Environment (LOFT/LOE) development process, and the Inter-Rater Reliability (IRR) process to standardize crew assessment. These are important supplements and examples are presented in the appendices.

Page last modified: March 19, 2013 7:38:51 PM EDT