CIVIL AVIATION AUTHORITY, BANGLADESH

ADVISORY CIRCULAR

Subject: **DISPATCHER / FLIGHT OPERATIONS OFFICER**
RESOURCE MANAGEMENT TRAINING

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1. PURPOSE

This advisory circular (AC) complements guidance already developed for flight crew members and other groups with respect to training in resource management. Focus is on the aircraft dispatcher/flight operations officer whose traditional role in air operator operations is being changed by fundamental changes in aviation, notably advanced technology.

2. RELATED READING MATERIAL

a. AC 003A Crew Resource Management

b. AC 005, Line Operational Simulations: Line-Oriented Flight Training, Line- Special Purpose Operational Training, Line Operational Evaluation.

3. BACKGROUND

Accident histories have established that inadequate operational control and inadequate collaborative decision making have been contributing factors in air carrier accidents. Effective management of available resources by aircraft dispatcher/flight operations officers is one essential deterrent to such accidents. In exercising operational control, the dispatcher/flight operations officer coordinates with flight crew members, air traffic controllers (ATC), and other members of a vast team in order to meet the requirements of daily flight operations. This AC encourages the dispatcher/flight operations officer's knowledge of the functions of the other participants throughout the operating environment. Two expected benefits to the dispatcher/flight operations officer are (1) better handling of information that bears on safe flight operations and (2) a better interface with each pilot in command, consistent with the joint responsibility concept outlined in CAR's

4. DEFINITIONS

a. **Human Factors.** Human factors entails a multidisciplinary effort to generate and compile information about human capabilities and limitations and to apply that information to equipment, systems, facilities, procedures, jobs, environments, training, staffing, and personnel management for safe, comfortable, effective human performance.

NOTE: It is recognized that inadequate system design or inadequate operator training can contribute to individual human error that leads to system performance degradation. Further, it is recognized that inadequate design and management of crew tasks can contribute to group errors that lead to system performance degradation.

b. **Dispatcher/Flight Operations Officer Resource Management (DRM).** The communication center with respect to positive operational control is the dispatcher/flight operations officer who-coordinates a wide array of resources for the flight crew. DRM addresses the challenge of optimizing the person/machine interface and related interpersonal issues. These issues include effective teambuilding and maintenance, information transfer, problem solving, decision making, maintaining situational awareness, and dealing with automated systems. DRM training, like CRM training, is comprised of three components: Initial Indoctrination/Awareness, Recurrent Practice and Feedback, and Continuing Reinforcement. DRM differs in the effective use of all resources: human resources, hardware, and information.

c. **Operational Control.** The authority over initiating, conducting, or terminating a flight.

d. **Crew Resource Management Training.** Training in aviation human factors for flight crew members and others.

5. THE MISSION OF DRM TRAINING

DRM training has been conceived to prevent aviation accidents by improving team performance through better team coordination.

6. BASIC CONCEPTS OF DRM

a. **Operating Environment.** The operating environment comprises interactions of the aircraft dispatcher/flight operations officer with:

(1) Pilots.

(2) Air traffic controllers.

(3) Other dispatcher/flight operations officers.

(4) Managers.

(5) Station personnel.

(6) Meteorology resources.

(7) Aircraft maintenance staff.

(8) Load planners.

(9) Crew schedulers.

(10) Aircraft routers.

(11) Communication systems and related personnel.

(12) Flight planning systems and related personnel.

b. **Situational Awareness (Dispatcher/Flight Operations Officer).** The ability to absorb information in a dynamic environment, to evaluate and refine that information, to anticipate contingencies, and to initiate appropriate actions as necessary.

c. **Communications.** Chief among many functions, the dispatcher/flight operations officer is a center for communications, continually receiving and disseminating information. He/she interfaces with the flight crew, with ATC, and with many others in the operational environment. Communication skills are at the heart of this work. Communication should be in standardized language that is easily understood by individuals in various departments and joint, organizations. Communication among departments and joint training should be encouraged. Special emphasis should be given to.

(1) Inquiry /advocacy /assertion.

(2) Conflict resolution.

(3) Radio communication (phraseology and technique).

d. Handling Information. One of the aircraft dispatcher/flight operations officer's main responsibilities is to keep the flight crew updated on any information that affects flight safety. Dispatcher/flight operations officers are required to review large quantities of real-time information and to decide what information is pertinent for each flight under their operational control. Dispatcher/flight operations officers pass on information relevant to each flight, sometimes obtaining missing information as part of the process. This linkage provides timely information to the flight crew members and relieves workload.

e. Interpersonal Skills. DRM concentrates on dispatcher/flight operations officers' attitudes and behaviors and the effects that they have on others.

f. Workload Management. DRM should help dispatcher/flight operations officers see that how they react during normal routine circumstances can have a powerful influence on how well they function during high workload and stressful situations. Prioritizing tasks is one key element in consistent, effective operational control.

g. Effective Decision Making. Through inquiry, advocacy, and assertion, the dispatcher/flight operations officer assumes a leadership role within the operational environment. This leadership role in workload management and situational awareness supports the captain. It requires the dispatcher/flight operations officer, together with the pilot in command, to apply problem solving skills which include the following:

(1) Weighing the competing needs that must be considered in choosing among alternatives.

(2) Being aware of the resources available to the various parties involved in the decision making;

(3) Applying effective problem solving strategies to help in decision making; and

(4) Avoiding situations and behaviors that contribute to errors.

7. FUNDAMENTALS OF DRM TRAINING IMPLEMENTATION

Research findings and airline operational experience suggest that the greatest benefits are achieved by adhering to the following practices:

a. Assess the Status of the Organization Before Implementation. It is important to know how widely DRM concepts are understood and practiced before designing specific training. Surveys of dispatcher/flight operations officers, observation of dispatcher/flight operations officers at work, and analysis of incident/accident reports can provide essential guidance for program designers.

b. Get Commitment from All Managers, Starting with Senior Mangers. Resource management programs are received much more positively by operations personnel when

senior managers, flight operations managers, and flight standards officers conspicuously support the basic concepts and provide the necessary resources for training. Training manuals should embrace DRM concepts by providing dispatcher/flight operations officers with necessary policy and procedures guidance.

c. **Customize the Training to Reflect the Nature and Needs of the Organization.** Using knowledge of the state of the organization, priorities should be established for topics to be covered including special issues such as the effects of mergers or the introduction of advanced technology aircraft. This approach increases the relevance of training for dispatcher/flight operations officers.

d. **Define the Scope of the Program.** Institute special DRM training for key personnel including developers/facilitators and supervisors. It is highly beneficial to provide training for these groups before beginning training for dispatcher/flight operations officers. DRM training may later be expanded to include pilots, cabin crews, maintenance personnel, and other company resource groups as appropriate. It is also helpful to develop a long-term strategy for program implementation.

e. **Communicate the Nature and Scope of the Program Before Startup.** Training departments should provide dispatcher/flight operations officers with a preview of what the training will involve together with plans for initial and continuing training. These steps can prevent misunderstandings about the focus of the training or any aspect of its implementation.

8. COMPONENTS OF DRM TRAINING

a. **Initial Indoctrination/Awareness.**

  (1) The initial indoctrination/awareness component of DRM training consists of classroom presentations that focus on the interpersonal relations and coordination involved in a decision making process. It also provides a common terminology and conceptual framework for identifying coordination problems. Initial indoctrination may be accomplished by a combination of methods including lectures, discussion groups, and role playing exercises. It is advantageous to have interactive participation of flight crew members and other members of the operating environment.

  (2) Indoctrination/awareness training modules for experienced aircraft dispatcher/flight operations officers are not the only way that this important DRM training component may be provided. DRM concepts should be addressed in dispatcher/flight operations officer initial qualification training for new-hires.

  (3) Curriculum development should address DRM skills that have been demonstrated to influence dispatchers /flight operations officer performance. For maximum effectiveness, the curriculum should define the concepts involved and relate directly to operational issues which dispatchers /flight operations officers face in daily operations.

b. Recurrent Practice and Feedback.

(1) DRM training should be included as a regular part of required recurrent training. Recurrent DRM training should include refresher practice and feedback exercises. An excellent training opportunity is line-oriented flight training (LOFT) with taped feedback, expanded to include the carrier's own aircraft dispatchers /flight operations officers. A suitable LOFT substitute specifically for dispatchers /flight operations officers might be even more valuable, in which dispatchers /flight operations officers interact with several simulated flights at once.

(2) Recurrent training allows participants to practice newly improved skills in communication and interpersonal relationships and to receive feedback on their effectiveness. Feedback has its greatest impact when it comes by way of self-critique and peer review. Guidance from a facilitator with special training in assessment and debriefing techniques completes an effective practice/feedback process.

(3) Effective feedback refers to the coordination concepts identified in indoctrination /awareness training and relates to specific behaviors. Practice and feedback are best accomplished through the use of some form of simulation and audio or videotape. Taped feedback, with the guidance of a facilitator, is particularly effective because it allows participants to view themselves from a third person perspective. This view is especially compelling in that strengths and weaknesses are captured on tape and vividly displayed. Stop action, replay, and slow motion are some of the playback features available during debriefing. Behaviors are easily seen, and appropriate adjustments are often self-evident.

c. Continuing Reinforcement. DRM concepts should be carried into every other type of training including technical and interdepartmental training so that those concepts are reinforced continuously.

(1) Technical training (e.g., initial and recurrent training).

    (i) Simulation.

    (ii) Case studies.

(2) Interdepartmental training (e.g., symposiums and seminars).

    (i) Problem solving.

    (ii) Stress awareness.

    (iii) Role reversal.

    (iv) Inquiry /advocacy /assertion.

(v) Conflict resolution.

d. Effective resource management skills are not gained by passively listening to classroom lectures, but by active participation and practice, including the use of simulators. Video feedback during debriefing following simulations should be provided so that dispatchers /flight operations officers may assess their skills not only as individuals but as integral parts of the operating environment.

e. The uneasiness sometimes created by the presence of videotaping equipment may be relieved by bulk-erasing each videotape in the presence of the dispatcher/flight operations officer at the end of the debriefing.

9. ASSESSMENT IN DRM TRAINING PROGRAMS

a. Self. Developers/facilitators should use every available opportunity to highlight the importance of dispatcher/flight operations officer coordination skills and techniques. One of the best learning opportunities occurs when dispatchers/flight operations officers examine their own behavior and performance with the assistance of a trained facilitator. The facilitator points out both positive and negative aspects of DRM performance. Whenever highly effective performance is observed, it is vital that the underlying behaviors are discussed and reinforced.

b. Group/Program. DRM training is a dynamic process that works best when it is continually assessed against its goals. Each organization should design a systematic assessment program to track the effects of its training program and to make continuous program adjustments. Experience has shown that resource management training works best if it is continually refreshed by subject matter that is timely, relevant, and usable. Assessment of the training program may include observation of the training process and reports by the participants themselves.

10. THE CRITICAL ROLE OF THE DEVELOPER/FACILITATOR

The effectiveness of any training curriculum is directly related to the expertise of developers and facilitators. Ideally, developers and facilitators should be current, qualified dispatchers /flight operations officers who have additional training in one of the following DRM/CRM topics:

a. Listening and communicating.

b. Role-playing, simulations, and group discussions.

c. Debriefing and feedback.

11. EVOLVING CONCEPTS OF DRM

a. **Concurrent Training.** More and more air operators are discovering the value of extending resource management training across organizational lines. Just as the aircraft dispatcher/flight operations officer is a resource to the pilot, the pilot is a resource to the dispatcher/flight operations officer. Similarly, other groups are resources to the pilot, to the aircraft dispatcher/flight operations officer, and to each other. Concurrent training of pilots, cabin crews, aircraft dispatcher/flight operations officers, and air traffic controllers has already been tried and found to be valuable. Air operators to include middle and upper-level managers. The objective is to improve the effectiveness of all the groups within the operations team.

b. **National Repository.** A frequent recommendation has been that the CAA, air operators, and appropriate professional groups cooperate to develop a national repository of training reference materials relating to communication and other team coordination issues. Access to such materials should be provided to everyone in the aviation community upon request. Initiatives should begin that may provide this capability.

12. SUMMARY STATEMENT

Effective dispatcher/flight operations officer resource management begins in initial training; it is strengthened by recurrent practice and feedback; and it is sustained by continuing reinforcement that is part of the corporate culture and embedded in every element of a dispatcher/flight operations officer's training.

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