

Docket No. SA-538

Exhibit No. 20-J

NATIONAL TRANSPORTATION SAFETY BOARD

Washington, D.C.

FOTM Excerpt – Resource Management Training

(13 pages)



FLIGHT OPERATIONS TRAINING MANUAL

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CHAPTER 19: RESOURCE MANAGEMENT TRAINING

SECTION 1. CREW RESOURCE MANAGEMENT AND DISPATCH RESOURCE MANAGEMENT TRAINING

A. GENERAL

- (1) All crewmembers operating or dispatching UPS aircraft must complete the programmed course of training in Crew Resource Management (CRM) or Dispatch Resource Management (DRM) in accordance with Federal Aviation Regulations. CRM/DRM refers to the effective use of all available resources; human, hardware, and information. CRM/DRM is one way of addressing the challenge of optimizing the human / machine interface and accompanying interpersonal activities. These activities include communication, team building, situational awareness, problem solving, conflict management, and decision making. Each component must be introduced, discussed, and continually renewed.
- (2) Key components of the UPS CRM/DRM Program are the Flight Crew Factors and DRM Seminars. Various instructional techniques including open forum, role playing, and video presentation are employed to generate in-depth discussions on various behavioral styles and their effects on crew effectiveness. In addition, crewmembers are also introduced to the NASA Fatigue Countermeasures program and operational fatigue management techniques.
- (3) Success of the UPS CRM/DRM program is due to a strong management commitment and support existing within the UPS organization. Another stems from the CRM/DRM development team's understanding that CRM/DRM programs tailored to match the culture of the organization possess the greatest likelihood for success. In many cases unique solutions were necessary, and the classroom instruction became highly interactive, skill-based, and operationally relevant with the concepts presented and reinforced with specific UPS and aviation examples. The one reason judged to be most responsible for CRM/DRM program success is reinforcement.
- (4) By raising the importance of CRM/DRM training equal to that of technical training, and by providing consistent reinforcement through facilitated debriefs, CRM/DRM has become part of the way flight crews and aircraft dispatchers are trained at UPS today. Crews and aircraft dispatchers are challenged to continually critique the effectiveness of their skills during every training event and actual operational mission. As a result, the CRM/DRM program has emerged as a training program governed by an operational training philosophy, which enables flight crews and aircraft dispatchers to effectively manage operational errors.
- (5) Per FAR 121.406(a), those UPS crewmembers who have completed the CRM initial / indoctrination training or Flight Crew Factors seminar prior to March 19, 1998 will be credited with initial CRM Training in compliance with 121.419(a)(1)(viii) or DRM Training in compliance with 121.422(a)(1)(ix).

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SECTION 2. CREW RESOURCE MANAGEMENT

A. GENERAL

- (1) Flight crew CRM training at UPS is comprised of five components:
 - (a) In initial indoctrination and awareness during Basic Indoctrination ground school training.
 - (b) The CRM Flight Crew Factors Seminar.
 - (c) Recurrent practice and feedback during simulator training.
 - (d) Continual reinforcement in all facets of line operations.
 - (e) New Captain Command Course

B. OBJECTIVES

- (1) UPS CRM training has been developed to prevent aviation accidents by improving crew performance through better crew coordination.
- (2) All crewmembers must understand that while high technical proficiency is an absolute must in commercial aircraft operations, it alone does not guarantee safe operations in the absence of effective crew coordination.
- (3) UPS CRM is designed to comply with the following regulations:
 - (a) FAR 121.404: Compliance dates: Crew and dispatcher resource management training.
 - (b) FAR 121.419(a)(1)(viii): Approved crew resource management initial training;
 - (c) FAR 121.427(a)(4): Approved recurrent CRM training. For flight crewmembers, this training or portions thereof may be accomplished during an approved simulator line operational flight training (LOFT) session.
 - (d) FAR 121.909(b): All AQP qualification and continuing qualification curriculums must integrate the training and evaluation of CRM and technical skills and knowledge.
 - (e) FAR 121.917(a): Integrated Crew Resource Management (CRM) or Dispatcher Resource Management (DRM) ground and if appropriate flight training applicable to each position for which training is provided under an AQP.
 - (f) FAR 121.919(c): The applicant shows competence in required technical knowledge and skills (e.g. , piloting or other) and crew resource management (e.g. CRM or DRM) knowledge and skills in scenarios (i.e. , LOE) that test both types of knowledge and skills together.



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C. PREREQUISITES

- (1) 19.1 CRM Initial Training
 - (a) The individual will be a UPS employee, newly assigned to a Crewmember or Aircraft Dispatcher duty position in Flight Operations. (General Subjects Basic Indoctrination / Segment 4.1 Module E.)
- (2) 19.2 CRM Flight Crew Factors Seminar
 - (a) The individual will be a UPS employee assigned as a flight crewmember or aircraft dispatcher. Flight crewmembers must have completed not less than 12 months' service as a crewmember with UPS. Flight Crew Factors will normally be scheduled between the eighteenth and thirty-sixth month of service as a UPS flight crewmember.
- (3) 19.3 CRM Recurrent Training
 - (a) The individual will be a UPS employee assigned as a flight crewmember either current and qualified or enrolled in an Initial, Transition, Upgrade, AQP, Recurrent or Requalification curriculum.
- (4) 19.4 CRM Check Airman Training
 - (a) The individual will be a UPS employee assigned as a Line Check or Proficiency Check Airman or Flight Instructor.
- (5) 19.5 New Captain Command Course
 - (a) The individual will be a UPS Employee who is a first-time Captain at UPS. The New Captain Command Course will be scheduled as a part of their Upgrade or Initial training prior to being released to the line.

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D. CURRICULUM SEGMENTS

- | | | |
|-----|--|-----------|
| (1) | 19.1 CRM Initial Training | 5 Hours |
| (a) | UPS CRM Program | 1.0 Hour |
| | <u>1</u> Objectives / Concepts / Definitions | |
| | <u>2</u> Acumen Program Overview | |
| (b) | Challenges for the New Hire | 1.5 Hours |
| | <u>1</u> Communication | |
| | <u>2</u> Team Building | |
| | <u>3</u> Situational Awareness | |
| | <u>4</u> Problem Solving | |
| (c) | New Hire Conflict Management | 1.0 Hour |
| | <u>1</u> Conflict Management Styles | |
| | <u>2</u> Techniques | |
| (d) | Fatigue Management | 1.5 Hours |
| | <u>1</u> Review of FAA flight, duty and rest regulatory requirements. | |
| | <u>2</u> Awareness of the FRMP program itself, including fatigue related policies and procedures, and the responsibilities of management and employees to mitigate or manage the effects of fatigue and improve flightcrew member flight deck alertness. | |
| | <u>3</u> The basics of fatigue, including sleep fundamentals and circadian rhythms. | |
| | <u>4</u> The causes and awareness of fatigue. | |
| | <u>5</u> The effects of operating through multiple time zones. | |
| | <u>6</u> The effects of fatigue relative to pilot performance. | |
| | <u>7</u> Fatigue countermeasures, prevention, and mitigation. | |
| | <u>8</u> The influence of lifestyle, including nutrition, exercise, and family life, on fatigue. | |
| | <u>9</u> Familiarity with sleep disorders. | |
| | <u>10</u> The effects of fatigue as a result of commuting. | |
| | <u>11</u> Pilot responsibility for ensuring adequate rest and fitness for duty. | |
| | <u>12</u> Operational procedures to follow when one identifies, or suspects, fatigue risk in oneself or others. | |
| | <u>13</u> Lessons learned regarding the effects of fatigue and mitigation initiatives relative to the certificate holder's operations. | |
| (2) | 19.2 CRM Flight Crew Factors Seminar | 16 hours |
| (a) | Introduction | 1.0 Hours |
| (b) | Effective / Ineffective Behavior | 1.0 Hours |
| (c) | Communication / Conflict Management | 3.0 Hour |
| (d) | Situational Awareness | 2.0 Hour |
| (e) | Team Building | 1.0 Hours |



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- (f) Fatigue 1.5 Hours
- 1 Review of FAA flight, duty and rest regulatory requirements.
 - 2 Awareness of the FRMP program itself, including fatigue related policies and procedures, and the responsibilities of management and employees to mitigate or manage the effects of fatigue and improve flightcrew member flight deck alertness.
 - 3 The basics of fatigue, including sleep fundamentals and circadian rhythms.
 - 4 The causes and awareness of fatigue.
 - 5 The effects of operating through multiple time zones.
 - 6 The effects of fatigue relative to pilot performance.
 - 7 Fatigue countermeasures, prevention, and mitigation.
 - 8 The influence of lifestyle, including nutrition, exercise, and family life, on fatigue.
 - 9 Familiarity with sleep disorders.
 - 10 The effects of fatigue as a result of commuting.
 - 11 Pilot responsibility for ensuring adequate rest and fitness for duty.
 - 12 Operational procedures to follow when one identifies, or suspects, fatigue risk in oneself or others.
 - 13 Lessons learned regarding the effects of fatigue and mitigation initiatives relative to the certificate holder's operations.
- (g) Decision Making / Problem Solving 2.0 Hours
- (h) Threat and Error Counter Measures 2.0 Hours
- (i) Automation Threats and Errors 1.5 Hour
- (j) Future Actions 1.5 Hours
- (3) 19.3 CRM Recurrent Training
- (a) AQP
- 1 AQP Curriculums emphasis on CRM per FAR 121.917, will constitute CRM Recurrent Training at UPS for fleets in the AQP.
- (b) Initial, Transition, Upgrade, Recurrent or Requalification
- 1 Individuals assigned to Initial, Transition, Upgrade, Recurrent or Requalification Training programs will review CRM issues throughout the simulator syllabus and receive CRM Recurrent Training during the Line Oriented Flight Training (LOFT) module. Similar to AQP CQ, the emphasis of the LOFT briefing, inflight segment and debriefing will focus on effective crew performance in a normal and non-normal line environment. Specific emphasis will be placed on individual performance in the areas of communications, teamwork, problem solving, situational awareness and conflict resolution.
- (4) 19.4 CRM Check Airman / Instructor Training 6 HOURS
- (a) Communication
- (b) Situational Awareness

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- (c) Threat and Error Management
- (d) Grading and Analysis
- (e) Facilitated Debriefing

NOTE: 19.4 CRM Check Airman Training is required only for those Check Airmen / Instructors receiving Initial Check Airman / Instructor Training after February 2, 1997. This module is not required for those Check Airmen / Instructors who received their Initial Check Airman / Instructor Training prior to February 2, 1997.

- (5) 19.5 New Captain Command Course 8 HOURS
- (a) Threat and Error Management relevant to Command
 - (b) Decision Making
 - (c) Agencies and Organizations
 - (d) Tour of GOC / GOC Video
 - (e) Meet with Chief Pilots/FAA
 - (f) Leadership

SECTION 3. DISPATCH RESOURCE MANAGEMENT TRAINING

A. GENERAL

- (1) DRM training at UPS is comprised of five components:
- (a) Initial indoctrination and awareness.
 - (b) Operational familiarity and practice during On-Job-Training.
 - (c) DRM Seminar.
 - (d) Recurrent practice and feedback.
 - (e) Continual reinforcement in all facets of operations.

B. OBJECTIVES

- (1) UPS DRM training has been developed to prevent aviation accidents by improving dispatcher performance through better coordination.
- (2) All dispatchers must understand that while high technical proficiency is an absolute must in commercial aircraft operations, it alone does not guarantee safe operations in the absence of effective coordination.
- (3) DRM is centered on optimizing communication between diverse groups within an airline and the related interpersonal issues while using available resources.
- (4) Two expected benefits of DRM training to the aircraft dispatcher are:
- (a) Better management of information that has a direct impact on safe flight operations; and
 - (b) Better interface with each PIC, consistent with the joint responsibility concept outlined in part 121.



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- (5) UPS CRM is designed to comply with the following regulations:
- (a) FAR 121.404: Compliance dates: Crew and dispatcher resource management training.
 - (b) FAR 121.422(a)(1)(ix): Approved dispatcher resource management (DRM) initial training.
 - (c) FAR 121.427(a)(4): Approved recurrent CRM training. For flight crewmembers, this training or portions thereof may be accomplished during an approved simulator line operational flight training (LOFT) session.
 - (d) FAR 121.909(b): All AQP qualification and continuing qualification curriculums must integrate the training and evaluation of CRM and technical skills and knowledge.
 - (e) FAR 121.917(a): Integrated Crew Resource Management (CRM) or Dispatcher Resource Management (DRM) ground and if appropriate flight training applicable to each position for which training is provided under an AQP.
 - (f) FAR 121.919(c): The applicant shows competence in required technical knowledge and skills (e.g. piloting or other) and crew resource management (e.g. CRM or DRM) knowledge and skills in scenarios (i.e. , LOE) that test both types of knowledge and skills together.

C. PREREQUISITES

- (1) 19.7 DRM Initial Training
- (a) The individual will be a UPS employee, newly assigned to an Aircraft Dispatcher position in Flight Operations. (General Subjects Basic Indoctrination, Segment 4.1). UPS may elect to enroll assistant flight dispatchers and/or flight control technicians in Basic Indoctrination.
- (2) 19.8 DRM Seminar
- (a) The individual will be a UPS employee assigned as an aircraft dispatcher.
 - (b) Since role-playing and knowledge of UPS dispatcher functions and culture are essential to getting maximum benefit of the DRM, aircraft dispatchers should acquire some UPS dispatch experience prior to being enrolled in the DRM seminar.
 - 1 The DRM Seminar will normally be scheduled between the twelfth and twenty-fourth month of service as a UPS aircraft dispatcher.
 - 2 Employees assigned as assistant dispatchers and flight control technicians may be designated by a Flight Control Manager to attend the DRM Seminar.
 - 3 Maximum benefit is achieved when several aircraft dispatchers can be grouped together for this training.
- (3) 19.9 DRM Recurrent Training
- (a) The individual will be a UPS employee assigned as an aircraft dispatcher (either current and qualified or when designated by a Flight Control Manager), an assistant dispatcher or flight control technician.
 - (b) The individual will have completed Initial DRM training or the DRM seminar.

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D. CURRICULUM SEGMENTS

- | | | | |
|-----|------|---|-----------|
| (1) | 19.7 | CRM Initial Training (Part of Basic Indoctrination Segment 4.1) | 5 hours |
| | (a) | UPS CRM Program | 1.0 Hours |
| | | <u>1</u> Objectives / Concepts / Definitions | |
| | | <u>2</u> Acumen Program Overview | |
| | (b) | Challenges For The New Hire | 1.5 Hours |
| | | <u>1</u> Communication | |
| | | <u>2</u> Team Building | |
| | | <u>3</u> Situational Awareness | |
| | | <u>4</u> Problem Solving | |
| | (c) | New Hire Conflict Management | 1.0 Hours |
| | | <u>1</u> Conflict Management Styles | |
| | | <u>2</u> Techniques | |
| | (d) | Fatigue Management | 1.5 Hours |
| | | <u>1</u> Causes / Effects of Fatigue | |
| | | <u>2</u> Operational Strategies | |
| (2) | 19.8 | DRM Seminar | 14 HOURS |
| | (a) | Introduction / Background | 2.0 Hours |
| | (b) | Decision Making | 1.0 Hours |
| | (c) | Communication | 2.0 Hours |
| | (d) | Conflict Resolution | 1.0 Hours |
| | (e) | Interdepartmental Coordination | 1.0 Hours |
| | (f) | Situational Awareness | 2.0 Hours |
| | (g) | Workload Management | 2.0 Hours |
| | (h) | Tactical and Strategic Resource Usage | 1.0 Hours |
| | (i) | Interpersonal Relationships | 1.0 Hours |
| | (j) | Stress Management | 1.0 Hours |
| | (k) | Fatigue Management | 1.5 Hours |
| | (l) | Threat and Error Management | 2.0 Hours |
| | (m) | Summary | 0.5 Hours |



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- (3) 19.9 DRM Recurrent Training 1 hour
- (a) Dispatch Resource Management 1.0 Hour
- 1 Performance Markers
- a Communication
- b Situational Awareness
- c Workload Management
- d Threat and Error Management
- e Decision Making

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