

Air Carrier Training Aviation Rulemaking Committee (ACT ARC)

Recommendation 15-5: Using Safety Management System (SMS) to Address Flight Path Management (FPM) Issues in 121 Air Carrier Training

I. Submission

The recommendations below were submitted by the Flight Path Management Workgroup (FPM WG)¹ for consideration by the Air Carrier Training Aviation Rulemaking Committee (ACT ARC) Steering Committee at F2F-5. The ACT ARC Steering Committee adopted the recommendations, which are consolidated and submitted to the Associate Administrator for Aviation Safety (AVS-1) as ACT ARC Recommendation 15-5.

II. Background & Statement of the Problem

The Advanced Qualification program (AQP) integrates a number of training and evaluation features aimed at improving performance. AQPs are systematically developed, continuously maintained, and empirically validated proficiency-based training systems. They allow for the systematic analysis, design, development, implementation, evaluation, and maintenance of self-correcting training programs.

An AQP supports safe operations by continuously improving training and evaluation; remains responsive to continuing changes in the industry, including new aircraft technology, changing operational environments, and new training methods and equipment; and, remains responsive to continuing changes and best practices relative to training and evaluation.

The Job Task Analysis (JTA) is the basic document that supports the development and analysis of the qualification standards. The Instructional Systems Design (ISD) methodology defines how the task analysis and qualifications standards will be used to support the development of the curriculums.

Under the analysis-based approach applied to AQP training program, each operator can develop an operator specific training program. Consequently, AQP curriculums will be more sensitive to differences in aircraft, operating conditions, emergency and abnormal contingencies, student skill levels, and other operational variables, than are traditional programs.

Under an AQP, the FAA monitors the process as well as the product. Instead of basing curriculums on prescribed generic maneuvers, procedures and knowledge items, AQP curriculums are based on a detailed analysis of the requirements of each duty position in each organization. To obtain FAA approval, AQP curriculums must be judged to be equal to, or provide better training than, a traditional training program.

The FPM WG determined that FAA oversight of Part 121 air carrier training programs (AQP and traditional) should include emphasis on the continuous improvement process used to modify the training program to address FPM issues based on internal procedural changes, operational data, voluntary safety program data, regulatory changes, changes to FAA guidance, and industry developments/best practice. Under an air carrier's Safety Management System (SMS), corrective action implemented also requires the air carrier to monitor effectiveness of the corrective action. Using SMS methodology within the AQP framework will allow air carriers to effectively address identified flight path management (FPM) challenges.

¹ The FPM WG is comprised of ACT ARC Steering Committee Members and industry subject matter experts.

III. Proposed Recommendations

The FPM WG proposes the following recommendation for ACT ARC Steering Committee consideration:

The ACT ARC recommends the FAA develop/revise guidance for air carriers that Advanced Qualification Program (AQP) Job Task Analysis (JTA) and Qualification Standards Document (QSD) include objectives that address flight path management (FPM), which is defined as “the planning (in the flight deck), execution, and assurance of the guidance and control of aircraft trajectory and energy.”

The ACT ARC further recommends the FAA develop inspector guidance directing each air carrier Principal Operations Inspector (POI) to conduct a focused review of the current training program of each 121 air carrier to ensure the AQP training program is using Instructional Systems Design (ISD) methodology for regular review and analysis of the process by which JTA and QSD are modified. The air carrier training program should address FPM issues identified from review of internal procedures, operational data, voluntary safety program data, regulatory changes, FAA guidance, and industry developments/best practice.

The FAA should also develop inspector guidance so that FAA personnel can determine the air carrier has a process to periodically review JTA and QSD for FPM issues, document corrective action, and monitor the effectiveness of those corrective actions.

These recommendations address air carriers that use an AQP; however, the ACT ARC recommends the FAA implement these recommendations for air carriers that use traditional 14 CFR Part 121 (Subpart N & O) training programs to ensure FPM issues are addressed.

IV. Rationale

A number of air carriers are reporting that it makes sense to put more emphasis on flight path management challenges but are concerned about adoption and change management issues without this guidance, especially if the flight path management content is replacing existing content.

Stronger guidance from the FAA with regard to integrating operational data, voluntary program data, regulatory changes, new FAA guidance, and industry best practice/developments will assist operations personnel in educating air carrier management/administrative personnel about the value of this data and the resulting improvements to the air carrier training program.

Incorporating a comprehensive review of this data into the change management process used to continuously improve the air carrier training program within the air carrier's safety management system allows the operator to better address challenges associated with training flight path management concepts to pilots.

V. Background Information

ACT ARC Initiatives:

Recommendation 15-5 was proposed to partially address the following initiative assigned to the FPM WG:

Initiative #35: Develop training/qualification to improve knowledge and skills for successful flight path management, to include:

- Manual flight operations, including training, practice, and checking.
- Management of automated systems for flight path management, especially autoflight mode awareness.
- Pilot monitoring and intervention for flight path management.
- Instructors/evaluator training for the development of skills and knowledge to teach and evaluate airplane flight path management, including use of automated systems.

Source Report:

Operational Use of Flight Path Management Systems: Final Report of the Performance-Based Aviation Rulemaking Committee (PARC)/Commercial Aviation Safety Team (CAST) Flight Deck Automation Working Group (FitDAWG), September 5, 2013 at pgs. 55-56, 68-75, 99-101. (See Finding 9 - Operator Policies for Flight Path Management; Finding 12 - Current Training Time, Methods, and Content; and, Finding 24 - Organizing and Analyzing Operations Data).