



U.S. Department
of Transportation

**Federal Aviation
Administration**

Office of the Administrator

800 Independence Ave., S.W.
Washington, D.C. 20591

SEP 22 2011

The Honorable John L. Mica
Chairman, Committee on Transportation
and Infrastructure
House of Representatives
Washington, DC 20515

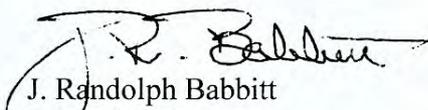
Dear Mr. Chairman:

As required by Section 209 of Public Law (PL) 111-216, the Airline Safety and Federal Aviation Administration Extension Act of 2010, I am pleased to provide you with the report to Congress on the Training Hour Requirements Review.

The report provides the results of the study as required in the legislation.

We have sent identical letters to Chairman Rockefeller, Senator Hutchison, Congressman Rahall, and to Chairman Hersman of the National Transportation Safety Board.

Sincerely,


J. Randolph Babbitt
Administrator

Enclosure



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The Honorable Nick J. Rahall, II
Committee on Transportation and Infrastructure
House of Representatives
Washington, DC 20515

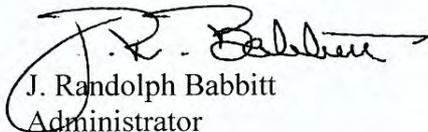
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The Honorable John D. Rockefeller, IV
Chairman, Committee on Commerce, Science
and Transportation
United States Senate
Washington, DC 20510

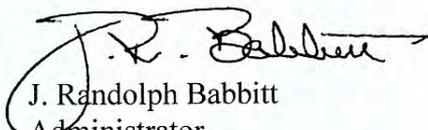
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The Honorable Kay Bailey Hutchison
Committee on Commerce, Science and Transportation
United States Senate
Washington, DC 20510

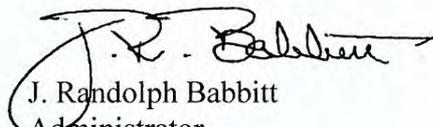
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SEP 22 2011

The Honorable Deborah A. P. Hersman
Chairman, National Transportation Safety Board
490 L'Enfant Plaza East, SW
Washington, DC 20594

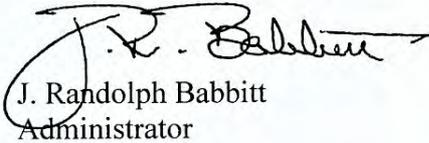
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J. Randolph Babbitt
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REPORT ON TRAINING HOURS
REQUIREMENT REVIEW
P.L. 111-216, SECTION 209

2011

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Acknowledgements

The Federal Aviation Administration (FAA) wishes to acknowledge the participation and ongoing support of the members of the Flightcrew Member Training Hours Requirement Review (THRR) Aviation Rulemaking Committee (ARC) that met between November 2010 and May 2011.

1.0 Executive Summary

This report responds to Section 209 of Public Law (PL) 111-216 (August 1, 2010), the Airline Safety and Federal Aviation Administration Extension Act of 2010. Section 209 required the FAA to convene a multidisciplinary expert panel comprised of, at a minimum, air carriers, training facilities, instructional design organizations, aircraft manufacturers, safety organizations, and labor unions to assess and make recommendations on part 121 and 135 crewmember training. Section 209 further requires the FAA to submit to the Committee on Transportation and Infrastructure of the House of Representatives; the Committee on Commerce, Science and Transportation of the Senate; and the National Transportation Safety Board a report based on the findings of the panel.

The FAA chartered the Flightcrew Member Training Hours Requirement Review Aviation Rulemaking Committee (THRR ARC) on September 30, 2010, and tasked them with making recommendations on the following:

- the best methods and optimal time needed for flight crewmembers of part 121 air carriers and flight crewmembers of part 135 air carriers to master aircraft systems, maneuvers, procedures, takeoffs and landings, and crew coordination;
- initial and recurrent testing requirements for pilots, including the rigor and consistency of testing programs such as check rides;
- the optimal length of time between training events for such flight crewmembers, including recurrent training events;
- the best methods reliably to evaluate mastery by such flight crewmembers of aircraft systems, maneuvers, procedures, takeoffs and landings, and crew coordination;
- classroom instruction requirements governing curriculum content and hours of instruction;
- the best methods to allow specific academic training courses to be credited toward the total flight hours required to receive an airline transport pilot certificate; and
- crew leadership training.

The THRR ARC met through May 2011 and provided the FAA with its recommendations on May 23, 2011. The intent of this report is to relay the findings of the THRR ARC. It is not intended to communicate our response to the recommendations or how we intend to address them.

2.0 Methodology

The FAA chartered the Flightcrew Member THRR ARC on September 30, 2010. The FAA selected the following organizations to participate in the THRR ARC. Each organization selected an individual to represent its group.

- Aero Micronesia, Inc.
- Air Line Pilots Association (ALPA)
- Air Transport Association (ATA)
- Atlantic Southeast Airlines
- The Boeing Company
- Bombardier Aerospace Montreal Training Center
- CAE SimuFlite, Inc.
- Coalition of Airline Pilots Associations (CAPA)
- Flight Safety Foundation (FSF)
- FlightSafety International
- Key Air, LLC
- National Air Transportation Association (NATA)
- Regional Airline Association (RAA)
- Southwest Airlines

The ARC was chaired by representatives of the NATA and the RAA. The FAA provided a designated representative and four subject matter experts to assist the ARC.

In its charter, the FAA tasked the THRR ARC with making recommendations on the following issues:

1. the best methods and optimal time needed for flight crewmembers of part 121 air carriers and flight crewmembers of part 135 air carriers to master aircraft systems, maneuvers, procedures, takeoffs and landings, and crew coordination;
2. initial and recurrent testing requirements for pilots, including the rigor and consistency of testing programs such as check rides;
3. the optimal length of time between training events for such flight crewmembers, including recurrent training events;
4. the best methods reliably to evaluate mastery by such flight crewmembers of aircraft systems, maneuvers, procedures, takeoffs and landings, and crew coordination;
5. classroom instruction requirements governing curriculum content and hours of instruction;
6. the best methods to allow specific academic training courses to be credited toward the total flight hours required to receive an airline transport pilot certificate; and
7. crew leadership training.

The majority of the THRR report was directed towards answering issues (1) through (5), which address the level of training, validation, and evaluation needed to ensure that a pilot in Part 121 or 135 flight operations has mastery of the knowledge, skills, and attitudes to operate in the complex air carrier arena and that the intervals between recurrent training events do not compromise safety. The five issues shared enough commonality to permit the THRR ARC to develop three sub-committees to address them according to the following areas:

- Training Courseware: Issues (1) and (5)
- Intervals of Training: Issue (3)
- Evaluation and Validation: Issues (2) and (4)

The FAA had previously convened two separate ARCs that specifically addressed issues (6) and (7). While PL 111-216 and the FAA tasked the THRR ARC with considering these issues, the ARC membership agreed that it was prudent to be familiar with the work conducted by the other ARCs and then build upon it. The THRR ARC was briefed on the work conducted by the First Officer Qualification (FOQ) ARC and the Mentoring, Leadership and Professional Development (MLPD) ARC and used that information as a foundation to develop its recommendations in these areas.

3.0 Introduction

The THRR ARC found the issues it was tasked to address to be very broad, making it a challenge to provide meaningful recommendations. However, the THRR ARC determined that methodologies existed which could be applied by an air carrier to develop optimum effective training program curricula, determine the correct intervals between training events and effectively evaluate and validate training. The methodologies utilize the principles of Instructional Systems Design (ISD) to develop training programs that address the common cohort of the individual flight crewmembers and allow some flexibility for meeting the training needs of the individual pilot. The THRR ARC concluded that the FAA-approved training system known as the Advanced Qualification Program (AQP) currently provides the optimal method for training, assessing, and validating flight crewmembers for commercial air carrier operations. The THRR ARC recognized, however, due to practical limitations, AQP is not a readily achievable, or in some cases even a possible training solution for many operators and did not recommend requiring all carriers to adopt an AQP. The THRR ARC identified the following effective principles of AQP that would be beneficial for air carriers that do not have an AQP.

- **Competency-Based Training:** Training delivered and evaluated based upon the amount of training each individual needs to achieve “mastery” of required tasks. Competency may be achieved at different rates for different people and the amount of elapsed time between training events that competency is maintained also varies individually and must be considered. Competency-based training varies from prescriptive training in that it recognizes that one size cannot fit all.
- **Train to Proficiency:** Train to proficiency provides for the variations of individual learning rates. It allows for additional exposure to task until the pilot is proficient and competency is achieved.
- **Data Collection and Feedback:** Data collection and analysis assesses the skill and knowledge of the individual and crew and monitors the health of the training program. The data element provides a continuous feedback loop allowing for rapid adjustments when performance indicators warrant action and, in conjunction with other factors, helps determine the correct intervals between training events.

One of the biggest challenges to the THRR ARC was addressing both Part 121 and 135 operators simultaneously. The difference in operating philosophies made it difficult to always find common solutions. Ultimately, the ARC chose the approach of achieving “one level of safety,” which often required making more conservative recommendations.

The recommendations of the THRR ARC follow.

4.0 Recommendations of the THRR ARC

4.1 The best methods and optimal time needed for flightcrew members of Title 14 Code of Federal Regulations (CFR) part 121 and 135 air carriers to master aircraft systems, maneuvers, procedures, takeoffs and landings, and crew coordination

Summary of recommendations:

- Use ISD to develop a training program, recognizing the scalability challenges for smaller operators
- Use scenario-based training
- Require a “whole-crew” concept in training and evaluation
- Change training requirements for instructors and evaluators
- Use a grading scale that supports ISD
- Convene a new ARC to make recommendations about the relationship between training centers and air carriers

Instructional System Design

Considering the variability and scope of 14 CFR part 121 and 135 flight operations, the THRR ARC found it impractical to create a prescriptive list of tasks and optimal time that adequately addressed all certificate holders’ training and qualification requirements. The THRR ARC recommended an analytical approach to training development, characterized by the use of a systematic process of analysis, design, development, implementation and evaluation to define a training program that would adequately address the operational needs of each certificate holder. The systematic process of analysis, design, development, implementation, and evaluation is referred to as ISD. The optimum time required to complete training would be determined through the process. Typical variables analyzed through ISD include:

- Experience of crewmember
- Training resources available/utilized
- Scope of the certificate holder’s operation e. g., long haul international, short haul domestic, single pilot operation, and associated threats
- Type and complexity of aircraft
- Number of pilots
- Fleet mix, including variants

The THRR ARC recognized that not all air carriers are large enough to maintain a database of sufficient size to properly perform the “evaluation” step in the ISD process. Therefore, the THRR ARC recommended the establishment of a new ARC to identify the data necessary to support an ISD training process for those without access to data (i.e. small air carriers).

The ISD process supports a strategy of training pilots to proficiency. Once a pilot has demonstrated the ability to perform a maneuver or task to proficiency during a training event, it is no longer necessary to train that maneuver or task during the training event.

The THRR ARC stated all training should integrate the use of current and future advanced technologies and flight training equipment, including full flight simulators. Air carriers should utilize a suite of equipment matched on the basis of analysis of the training requirements at any given stage of a curriculum. Judicious analysis of these requirements could enable an air carrier to significantly reduce the need for use of a full simulator.

Scenario-based Training

The THRR ARC recommended the use of scenario-based training. Scenario-based training incorporates Standard Operating Procedures (SOP), normal, abnormal and emergency checklists, aircraft performance, crew resource management, and threat and error management into situations a pilot is likely to encounter during actual revenue operations. Scenarios should contain operationally relevant real world situations used to focus the students on a particular subject matter.

“Whole-crew” Concept

Along with its recommendation on scenario-based training, the THRR ARC recommended that qualified crewmembers occupy each seat during training or checking event. The THRR ARC recommended a Pilot-In-Command (PIC) and Second-In-Command (SIC) as the best practice for crew pairing during training and checking, but provided alternatives if logistics did not permit this best practice. Additionally, the THRR ARC recommended the FAA convene a new ARC to make recommendations on crew pairing requirements when an air carrier uses a training provider.

Instructor/evaluator Training

The THRR ARC stated that effective validation and evaluation of pilot skills can only be accomplished by individuals who are specifically trained to conduct evaluations. The THRR ARC recommended that an air carrier should use ISD to develop instructor/evaluator training and this training should be provided annually. Currently, instructor/evaluator training is only required as a one-time event. The THRR ARC recommended that instructor/evaluator training have a requirement for continued professional development. To ensure consistency in evaluating and recording the results of an evaluation, the THRR ARC recommended instructors/evaluators be trained on how to record a pilot's performance. The training should also include instructor calibration to provide for consistent grading across instructors.

Grading Systems

Current grading practices typically rate a pilot as either Satisfactory (S) or as Unsatisfactory (U) during a proficiency check. The THRR ARC found this practice may not tell the entire story of a pilot's proficiency or provide enough information to measure the effectiveness of a training program. The THRR ARC recommended a new standardized grading system be adopted by all U.S. commercial air carriers to better assess the proficiency of pilots, showing specific strengths, weaknesses, and trends over time. The THRR ARC recommended the grading scale provide

enough detail to be used in the ISD evaluation process. The THRR ARC further recommended the grades and comments made by the instructors and evaluators only be used as part of the ISD analysis process to evaluate the effectiveness of the training program. Grades and comments should not be maintained in the flight crewmember's permanent record.

The THRR ARC identified an additional benefit of this type of grading system: to identify and reward highly-proficient pilots by extending their training and checking cycle. Conversely, those pilots who just meet the minimum standard may require more frequent training and checking.

ARC to Review Air Carrier/Training Provider Relationship

Finally, the ARC recommended the FAA establish a new ARC to evaluate the working relationship between air carriers and training providers, to include at a minimum:

- check airman/instructor training
- training program development
- training program maintenance/revision
- crewmember pairing
- multiple training providers used by one operator
- multi operator concurrent training (same training program used by different air carriers)

4.2 The initial and recurrent testing requirements for pilots, including the rigor and consistency of testing programs such as check rides

Summary of recommendations:

- Develop new proficiency standards
- Validate pilot monitoring skills
- Revise standards for conduct of line checks
- Require line check airman training

Proficiency Standards

The current evaluations of air carrier pilots' flight proficiency are based on a list of tasks that may be defined by multiple sources, including the maneuvers listed in parts 121 and 135, FAA Practical Test Standards, and FAA guidance materials. Currently, the standards used to evaluate a pilot's proficiency are based on the level of pilot certificate (i.e., commercial or airline transport pilot) and the proficiency standards required by an air carrier's training program. The pilot certification standards may not evaluate the same tasks used in an air carrier's operations. Additionally, current regulations have different requirements for tasks and events for a PIC and a SIC. Training is also separate. For example, current regulations require a PIC to receive more training tasks and more frequent proficiency checks than a SIC. In addition, PICs train on a 6-month basis, and SICs train on a 12-month basis. The disparity between the training requirements for PIC and SIC is not consistent with actual line operations. During actual operations, pilots must work as a single flight crew.

Therefore, the THRR ARC recommended each air carrier develop a list of minimum acceptable standards, independent from the FAA Practical Test Standards or part 121, to apply specifically to tasks required for validation of pilot skills by that air carrier. The THRR ARC recommended the validation be tailored to the operational environment in which the pilot operates. For example, validation of instrument approach procedure skills should be based on those instrument procedures used by the air carrier in the conditions in which they use them. This would allow operators to focus on areas that need special emphasis. By this recommendation, the THRR ARC intended the air carrier meet or exceed the minimum required standard. The air carrier should validate the flight proficiency of both the PIC and the SIC using the same standard.

Validation of Pilot Monitoring Skills

Current regulations do not require an evaluation of pilot monitoring skills. Typically, today's flight operations involve the PIC and SIC performing both Pilot Flying (PF) and Pilot Monitoring (PM) duties. Effective crew monitoring and cross-checking can literally be the last line of defense; when a crewmember can catch an error or unsafe act, this detection may break the chain of events leading to an accident scenario. Conversely, when this layer of defense is absent, the error may go undetected, leading to adverse safety consequences.

The THRR ARC believes that evaluations must ensure satisfactory compliance with PM duties as detailed in the air carrier's SOP. Therefore, it recommended that training and validation of flight proficiency include the evaluation of PM skills. Each pilot should demonstrate PM duties

sufficient to determine compliance with and knowledge of aircraft procedures and company SOPs including normal and abnormal procedures.

Conduct of Line Checks

Current regulations state that no certificate holder may use any person nor may any person serve as PIC of an aircraft unless, within the preceding 12 calendar months, that person has passed a line check in which he or she satisfactorily performs the duties and responsibilities of a PIC in one of the types of airplanes he or she is to fly. The line check must be given by an approved check pilot or by an FAA inspector. The line check shall consist of at least one flight over a typical part of the certificate holder's route, or over a foreign or federal airway, or over a direct route and shall include takeoffs and landings at one or more representative airports. Consistent with its recommendation to train and evaluate on both PF and PM duties, the THRR ARC recommended a line check consist of two flight segments to permit the PIC to perform the duties of the PM during a second segment while the SIC performs the duties of the PF.

The THRR ARC noted the primary objective of the line check is for a check airman or FAA inspector to observe and evaluate the in-flight operations of a certificate holder within the total operational environment of the air transportation system. Line checks provide the FAA with an opportunity to assess elements of the aviation system, internal and external to an operator, from the vantage of the airplane flight deck. A well run line check program can detect deficiencies and adverse trends and identify the need to revise or initiate procedures. To best meet the objectives of the line check program, the THRR ARC recommended a line check be conducted during actual revenue operations by a check airman or FAA inspector occupying the approved observer's seat in the flight deck; or if the check airman is qualified, from either pilot seat while also serving as a required crewmember. The THRR ARC recognized some operators may not agree with this recommendation, considering that if a pilot's performance does not meet standards, he or she should not be permitted to complete the flight or series of flights. Therefore the THRR ARC also recommended an air carrier have procedures in its operations manual to address when a check airman or FAA inspector determines that a pilot's performance does not meet standards. The THRR ARC recommended the individual be permitted to continue to operate.

The THRR ARC noted challenges in scheduling line checks for part 135 on demand air carriers and for air carriers that use airplanes that do not have an observer's seat in the flight deck. The THRR ARC made recommendations about expanding the criteria to define an acceptable check airman and to allow in limited circumstances a line observation simulation in a full-flight-simulator with either a check airman from a contract training provider or an FAA inspector. The ARC also made recommendations about "crediting" line checks for PICs qualified in more than one aircraft for an operator.

Line Check Airman Training

Finally, current regulations specify the training required to be eligible to be a FAA-approved check airman; however, they do not specify training requirements for a line-check airman. The ARC recommended the FAA develop these requirements.

4.3 The optimal length of time between training events for such flightcrew members, including recurrent training events

Summary of recommendations

- Develop “short-cycle” intervals
- Permit extension of training intervals

Short-cycle Intervals

Traditional training intervals have historically been based on requirements for evaluations contained in 14 CFR. Training and assessment intervals for these events center around the knowledge and tasks necessary to pass evaluations such as proficiency checks or recurrent ground training, rather than considering the effect of the length of interval a pilot can maintain the cognitive skills needed to handle normal, non-normal, or emergency conditions during flight operations. For the purpose of this discussion the cognitive skills are referred to as the Knowledge, Skills, or Attitudes (KSA) needed to handle normal, non-normal, or emergency conditions.

The THRR ARC did not consider optimum intervals for operators training under an AQP since training intervals for those operators are derived from an ISD analysis. As such, the recommendations for optimum training intervals are only appropriate for operators training under part 121, subparts N and O, and/or part 135, subparts G and H.

Although a number of factors may influence the appropriate length between these events for an individual pilot or all pilots flying for an operator, the THRR ARC believed that existing regulatory intervals for these events must be reduced in cases when a pilot re-enters the operator’s training program after an extended absence, or when a pilot demonstrates unsatisfactory performance during an evaluation. The THRR ARC called this concept a short-cycle. The THRR ARC proposed that a short-cycle would reduce the training and assessment interval by one-half the normal training and assessment interval. If a pilot is required to complete requalification training that exceeds the normal recurrent ground and flight training or if the pilot demonstrates unsatisfactory performance, the ARC recommended those pilots be subject to a short-cycle recurrent ground and flight evaluation after returning to flight operations. This ensures that pilots have maintained the KSA’s covered during their requalification training.

The THRR ARC stated if a significant number of the operator’s pilots fail to achieve performance standards during KSA assessments, then the operator’s training program itself must be examined for deficiencies or inability to deliver adequate training. Operators should develop a “train to proficiency and assessment” philosophy in conducting their flight crewmember recurrent training. This means delivering training that maintains or improves their proficiency and instills a positive attitude for carrying out their responsibilities during flight operations. Although flight crewmembers must demonstrate proficiency and competency within a reasonable number of training sessions, it is recognized that there will be occasions where pilots will not achieve required performance standards during KSA assessments.

Extension of Training Intervals

The THRR ARC also considered whether the FAA should consider the merits of extending certain training and evaluation event intervals for operators who meet other criteria, such as the conditions associated with a “single visit exemption” (currently associated with AQP), having an

SMS, adopting a Flight Operational Quality Assurance or flight data monitoring program, having a full-time Director of Safety or demonstrating an operational tempo that ensures no skill deterioration in piloting tasks beyond current regulatory standards. The ARC placed additional limitations on extending training intervals. The ARC recommended that data collection and analysis be used to support the extension of the training intervals.

The ARC recommended that the more of these characteristics an operator is able to demonstrate, the greater assessment interval the FAA may grant. However, the ARC also concluded that while it may be worthwhile for the FAA to consider extending training intervals, it does not recommend extending any interval beyond 12 months. An operator who wishes to extend intervals beyond 12 months should implement a full AQP.

4.4 The best methods to reliably evaluate a flightcrew member's mastery of aircraft systems, maneuvers, procedures, takeoffs and landings and crew coordination

Summary of recommendations

- Increase use of Flight Simulation Training Devices (FSTD)
- Require scenario-based evaluation

Use of Flight Simulation

Current part 121 and 135 regulations permit certificate holders to use simulators for varying amounts of the training, testing, and checking required by the FAA. The regulations provide a voluntary alternative to training and checking in the airplane. The only required use of a FSTD in the current regulations is the windshear requirements in 14 CFR section 121.409(d).

The THRR ARC recommended all assessments of a pilot's flight proficiency and knowledge be accomplished using the best method and if applicable, in conjunction with, the most appropriate training device to ensure that all pilot performance standards are met. The THRR ARC stated that using FSTD, rather than aircraft, allows for more in-depth checking in a safer environment, including the practice of critical emergency procedures using a broad range of scenarios. FSTD can also replicate virtually any possible situation and weather and environmental condition. The use of FSTD also reduces noise, air pollution, and air traffic congestion, and conserves petroleum resources. The THRR ARC noted this recommendation is consistent with National Transportation Safety Board recommendations A-94-191 through 194, which recommended part 121 flight training and checking should be required in FSTD wherever possible.

Scenario-Based Evaluation

Additionally, the THRR ARC advocated that better pilot performance would result from realistic training and validation of pilot skills. Therefore, pilot validation events should be accomplished in "line-oriented" events in flight simulators (when simulation is available). The events should be structured to ensure all pilot skill tasks are validated, but the method by which the tasks are validated should be flexible. This flexibility should include the ability to validate the training over multiple sessions rather than one "check ride" event. In addition, the THRR ARC recommended that line-oriented validation focus on operator-specific requirements, specific operational challenges faced by the operator, or issues identified by the operator's safety management program.

4.5 Classroom instruction requirements governing curriculum contents and hours of instruction

- Use ISD to develop a training program, recognizing the scalability challenges for smaller operators
- Use scenario-based training
- Require a “whole-crew” concept in training and evaluation
- Change training requirements for instructors and evaluators
- Use a grading scale that supports ISD
- Convene a new ARC to make recommendations about the relationship between training centers and air carriers

Classroom training is integral to overall pilot training, therefore the THRR ARC made the same recommendations as it made to the first focus area, listed previously in 4.1.

4.6 The best methods to allow specific academic training courses to be credited toward the total flight hours required to receive an airline transport pilot certificate

Summary of recommendations

- Concur with recommendations of FOQ ARC
- Reconcile any academic crediting system with International Civil Aviation Organization (ICAO) Standards And Recommended Practices (SARP)
- Maintain current part 135 requirements

Current regulations require an Airline Transport Pilot (ATP) certificate for pilots acting as PIC and commercial certificate for SIC pilots in part 121. Under part 135 operations, PIC are required to hold an ATP certificate for operations in a multi-engine, turbojet powered aircraft that has ten or more passenger seats. A SIC in those operations is required to hold a commercial certificate. Public Law (PL) 111-216, Section 216, requires an ATP certificate for a pilot serving as SIC for a part 121 air carrier. PL 111-216, Section 217 also allows the FAA to consider using specific academic training courses towards the ATP flight hour requirements.

Recommendations of the FOQ ARC

The FAA asked the already-chartered FOQ ARC to make recommendations on Section 217 of PL 111-216. The ARC considered what criteria would permit academic training and quality of experience to substitute for the existing aeronautical experience requirements required to obtain an ATP certificate necessary to exercise SIC privileges under part 121. The FOQ ARC recommended a system to credit aeronautical experience that could be used to meet ATP aeronautical experience requirements, but limited its applicability to the issuance of an ATP certificate for SIC privileges only in part 121 operations. The THRR ARC concurred with this approach.

Reconcile with ICAO SARP

Additionally, the THRR ARC suggested that any aeronautical experience credit system be reconciled, where possible, with ICAO licensing SARP.

Maintain Current 135 Requirements

In addition to the recommendations provided by the FOQ ARC, the THRR ARC also suggested that certification requirements for pilots of part 135 air carriers are appropriate to the operations they conduct. The THRR ARC did not recommend any changes to the part 135 pilot certification and experience requirements.

4.7 Crew leadership training

Summary of recommendations

- Concur with the recommendations of the MLPD ARC for crew leadership training, with certain exceptions
- Require air carrier to determine content of training program, but do not include a specific hour requirement
- Require leadership training for a PIC and integrate it into all training events through the ISD process endorsed by this ARC.

Current regulations require training when a pilot, serving as SIC in a particular airplane type, upgrades to the PIC position in the same airplane type. This training largely consists of performance of operational tasks and responsibilities specific to the new duty station and does not necessarily provide education to the new PIC on his or her leadership role. Crew Resource Management training, required for all air carriers, contains some elements of the desired leadership training, but it is not designed to aid the PIC in assuming a leadership role in the aircraft and the air carrier as the training envisioned by this ARC would.

Recommendations of the MLPD ARC

The FAA convened the Flight Crewmember MLPD ARC in response to Section 206 of PL 111-216. The FAA tasked the MLPD ARC to provide recommendations for flight crewmember MLPD for part 121 air carriers. The THRR ARC reviewed the recommendations of the MLPD ARC. With some modifications, the THRR ARC concurred with the recommendation to require leadership training for the PIC. The THRR ARC considered leadership training for part 135 operators as well.

Air Carriers Should Develop Content of the Leadership Training Program

The THRR ARC disagreed with the recommendation of the MLPD ARC for a fixed hour requirement for leadership training. Rather, the THRR ARC recommended using an ISD process, which would permit an air carrier to determine, based upon data and operational experience, the optimal training times for pilots. To establish a mandatory fixed hourly requirement is contrary to the principles of training endorsed by the THRR ARC. Further, the THRR ARC was concerned that a requirement for 32 hours of training would not address scalability concerns of the small operators with few aircraft and crewmembers, including those operating under part 135. The THRR ARC recommended the FAA consider these scalability concerns.

The THRR ARC stated that each air carrier should develop its leadership course to incorporate air carrier-specific course material. While the THRR ARC concurred with the MLPD ARC that a facilitated discussion among those attending the course is a key component to the success of this particular aspect of training, the THRR ARC stated that each air carrier may require additional items in a leadership and command course that may be suitable for distance learning.

Require Leadership Training

The THRR ARC recommends that leadership training be developed as an event separate from the current requirements for upgrade training. The leadership training should be divided into two segments. The initial segment would be completed prior to upgrade training in order to cover the leadership modules of the course. The second segment would be completed between six and 18 months after completion of operating experience and incorporate lessons learned during the new PIC's initial experiences as a PIC and reinforce the concepts covered in the initial leadership and command course.

5.0 Conclusion

The intent of this report is to relay the findings of the THRR ARC, as required by PL 111-216. It is not intended to communicate our response to the recommendations or how we intend to address them. The FAA has preliminarily reviewed the work of the THRR ARC and is considering proposals that would implement many of its recommendations. For example, the FAA is currently engaged in a rulemaking project that proposes substantial changes to the crewmember training and qualification requirements for part 121. The Federal Register published the associated supplemental notice of proposed rulemaking on May 20, 2011. We are also engaged in two additional rulemaking projects related to the work of the THRR ARC, one on Flight Crewmember Mentoring, Leadership and Professional Development and one on Pilot Certification and Qualification Requirements.

While we are pleased the recommendations of this ARC appear to generally support our current activities, the FAA will need to carefully evaluate these recommendations within the framework of the rulemaking process, and in the context of Agency priorities and the FAA's overall safety agenda.

Appendix 1: Excerpt from Public Law (PL) 111-216**SEC. 209. FAA RULEMAKING ON TRAINING PROGRAMS.***(b) EXPERT PANEL TO REVIEW PART 121 AND PART 135 TRAINING HOURS.—*

(1) ESTABLISHMENT.—Not later than 60 days after the date of enactment of this Act, the Administrator shall convene a multidisciplinary expert panel comprised of, at a minimum, air carrier representatives, training facility representatives, instructional design experts, aircraft manufacturers, safety organization representatives, and labor union representatives.

(2) ASSESSMENT AND RECOMMENDATIONS.—The panel shall assess and make recommendations concerning—

(A) the best methods and optimal time needed for flight crewmembers of part 121 air carriers and flight crewmembers of part 135 air carriers to master aircraft systems, maneuvers, procedures, takeoffs and landings, and crew coordination;

(B) initial and recurrent testing requirements for pilots, including the rigor and consistency of testing programs such as check rides;

(C) the optimal length of time between training events for such flight crewmembers, including recurrent training events;

(D) the best methods reliably to evaluate mastery by such flight crewmembers of aircraft systems, maneuvers, procedures, takeoffs and landings, and crew coordination;

(E) classroom instruction requirements governing curriculum content and hours of instruction;

(F) the best methods to allow specific academic training courses to be credited toward the total flight hours required to receive an airline transport pilot certificate; and

(G) crew leadership training.

(3) BEST PRACTICES.—In making recommendations under subsection (b)(2), the panel shall consider, if appropriate, best practices in the aviation industry with respect to training protocols, methods, and procedures.

(4) REPORT.—Not later than one year after the date of enactment of this Act, the Administrator shall submit to the Committee on Transportation and Infrastructure of the House of Representatives, the Committee on Commerce, Science, and Transportation of the Senate, and the National Transportation Safety Board a report based on the findings of the panel.

Appendix 2: THRR ARC Charter**U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION**

Effective Date: **9-30-2010**

**SUBJ: Flightcrew Member Training Hours Requirement Review Aviation
Rulemaking Committee**

1. PURPOSE. This document establishes the Flightcrew Member Training Hours Requirement Review Aviation Rulemaking Committee (ARC) according to the Administrator's authority under Title 49 of the United States Code (49 U.S.C.), section 106(p)(5).

2. BACKGROUND.

- a. In August 2010 Congress enacted the "Airline Safety and Federal Aviation Administration Extension Act of 2010" (the "Act"). Section 209(b) of the Act, titled "FAA Rulemaking on Training Programs," requires the FAA to convene a multidisciplinary panel to assess and make recommendations to the Administrator on:
 - 1) The best methods and optimal time needed for flightcrew members of Title 14 Code of Federal Regulations (CFR) part 121 and 135 air carriers to master aircraft systems, maneuvers, procedures, takeoffs and landings, and crew coordination;
 - 2) The initial and recurrent testing requirements for pilots, including the rigor and consistency of testing programs such as check rides;
 - 3) The optimal length of time between training events for such flightcrew members, including recurrent training events;
 - 4) The best methods to reliably evaluate a flightcrew member's mastery of aircraft systems, maneuvers, procedures, takeoffs and landings, and crew coordination;
 - 5) Classroom instruction requirements governing curriculum content and hours of instruction;
 - 6) The best methods to allow specific academic training courses to be credited toward the total flight-hours required to receive an airline transport pilot certificate; and

- 7) Crew leadership training.
- b. Section 209(b) of the Act also requires the panel to consider industry best practices with respect to training protocols, methods, and procedures and to submit a report, based on the findings of the panel, to Congress and the NTSB by July 31, 2011.
- c. To carry out the requirements of Section 209(b) of the Act, the FAA is chartering an ARC. The ARC will accomplish the tasks directed in Section 209(b) of the Act based on the Congressional timelines outlined in the Act and will additionally develop recommendations for the FAA regarding regulatory action in those same areas.

3. OBJECTIVES AND SCOPE OF THE ARC. The Flightcrew Member Training Hours Requirement Review ARC will provide a forum for the U.S. aviation community to discuss and provide recommendations to the FAA concerning the development of requirements to meet Section 209(b) of the Act.

- a. Specifically, the ARC shall assess and make recommendations concerning:
 - 1) The best methods and optimal time needed for flightcrew members of 14 CFR part 121 and 135 air carriers to master aircraft systems, maneuvers, procedures, takeoffs and landings, and crew coordination;
 - 2) The initial and recurrent testing requirements for pilots, including the rigor and consistency of testing programs such as check rides;
 - 3) The optimal length of time between training events for such flightcrew members, including recurrent training events;
 - 4) The best methods to reliably evaluate a flightcrew member's mastery of aircraft systems, maneuvers, procedures, takeoffs and landings, and crew coordination;
 - 5) Classroom instruction requirements governing curriculum content and hours of instruction;
 - 6) The best methods to allow specific academic training courses to be credited toward the total flight-hours required to receive an airline transport pilot certificate; and
 - 7) Crew leadership training.
- b. The ARC shall consider scalability of its recommendations to address the needs of small businesses.

- c. The ARC will develop recommendations to 14 CFR parts 121, 135, and other associated regulations as may be required to comply with the intent of Section 209(b) of the Act. These recommendations will be presented to the Associate Administrator for Aviation Safety for rulemaking consideration on or before July 31, 2011.

4. ARC PROCEDURES.

- a. The ARC will provide advice and recommendations to the Associate Administrator for Aviation Safety and acts solely in an advisory capacity. Once the ARC recommendations are delivered to the Associate Administrator, it is within her discretion to determine when and how the report of the ARC is released to the public.
- b. The committee will discuss and present information, guidance, and recommendations that the members of the committee consider relevant in addressing the objectives.
- c. The ARC may be reconvened following the submission of its recommendations for the purposes of providing advice and assistance to the FAA, at the discretion of the Associate Administrator.

5. ORGANIZATION, MEMBERSHIP, AND ADMINISTRATION.

- a. The membership of the ARC will consist of individuals from the government, pilot associations, training organizations, and other industry organizations that can provide experts in aircraft operations, flightcrew member training, human factors, and other appropriate specialties as determined by the FAA.
 - 1) The ARC will consist of no more than 17 individuals.
 - 2) The FAA will identify the number of ARC members that each organization may select to participate. The Associate Administrator for Aviation Safety will then request that each organization name its representative(s). Only the representative for the organization will have authority to speak for the organization or group that he or she represents.
 - 3) Active participation and commitment by members will be essential for achieving the ARC's objectives and for continued membership on the ARC.
- b. The Associate Administrator for Aviation Safety is the sponsor of the ARC and will select an industry chair(s) from the membership of the ARC and the FAA-designated representative for the ARC. Once appointed, the industry chair(s) will:

- 1) Coordinate required committee and subcommittee (if any) meetings in order to meet the ARC's objectives and timelines;
 - 2) Provide notification to all ARC members of the time and place for each meeting;
 - 3) Ensure meeting agendas are established and provided to the committee members in a timely manner; and
 - 4) Other responsibilities as required to ensure ARC objectives are met.
- c. A record of discussions of ARC meetings will be kept.
- d. Although not required, a quorum is desirable at each ARC meeting.

6. PUBLIC PARTICIPATION. ARC meetings are not open to the public. Persons or organizations that are not members of the ARC and are interested in attending a meeting must request and receive approval before the meeting from the industry chair(s) and the designated Federal representative.

7. AVAILABILITY OF RECORDS. Records, reports, agendas, working papers, and other documents that are made available to or prepared for or by the ARC will be available for public inspection and copying at the FAA Flight Standards Service, Air Transportation Division, AFS-200, 800 Independence Avenue, SW., Washington, D.C. 20591, consistent with the Freedom of Information Act, 5 U.S.C. section 522. Fees will be charged for information furnished to the public according to the fee schedule published in Title 49 CFR part 7.

8. PUBLIC INTEREST. The ARC's formation is determined to be in the public interest and is designed to fulfill the performance of duties imposed on the FAA by Federal law.

9. EFFECTIVE DATE AND DURATION. This ARC is effective upon issuance of this order. The ARC will remain in existence until September 30, 2012, unless sooner suspended, terminated or extended by the Administrator.

J. Randolph Babbitt
Administrator