

Aviation Accreditation Board International
Response to the Advance Notice of Proposed Rulemaking
New Pilot Certification Requirements for Air Carrier Operations

Introduction:

The Aviation Accreditation Board International (AABI) is pleased to submit this response to the ANPRM. This submittal will be sent both electronically on the FAA web site and by package express. The AABI Board, based on responses from educator members whose institutions offer AABI Accredited Flight Education programs, formulated this response. Many of these institutions will provide independent responses to the ANPRM; this response does not replace or supersede those submittals.

Accreditation is a common post-secondary practice in the United States as a peer reviewed process to assure all stakeholders of both institutional and program quality. AABI does not accredit institutions; it is concerned with specialized or programmatic accreditation, applying standards and criteria through a rigorous, peer reviewed process, to aviation programs developed by industry and academe working in close partnership.

AABI is the accrediting body recognized by the Council on Higher Education Accreditation (CHEA) for non-engineering aviation programs encompassing several disciplines; one of which is the “flight education” programs that specifically address education of pilots concurrent and integrated with acquisition of the requisite certificates for first officer qualification. Not all flight education program students follow a career track to airline operations. This document and Appendix A addresses the preparation of those students who aspire to apply for first officer service in part 121 operations.

Specialized or programmatic accreditation bodies serve many fields, including engineering, many categories of the arts, business and finance, medical specializations, etc. CHEA recognizes these bodies, ultimately serving the post secondary education community with rigorous accreditation practices for thousands of collegiate programs. The supposition that accreditation confers quality is a de-facto assumption in a number of fields, e.g. engineering with ABET accreditation, where a university/collegiate program must be accredited in order for its graduates to gain employment with most large employers in the industry.

One reason for the publication of this ANPRM is the mention in HR3371 and other legislative proposals that an Airline Transport Pilot Certificate be required for first officers flying in part 121 operations. The ATP requirement of 1500 hours and age 23 would have major consequences to the aviation education community, the youth of America who have interest in flying as a career, the airlines that are first employers of young pilots; all without serving the safety of the traveling public. Therefore, in our comments below, AABI is particularly concerned that the specification of an unreasonably high arbitrary number of hours not become a proxy for first officer qualification. Instead, AABI accredited programs focus on competency-based education concepts, systematic integration of academic and laboratory experiences, and scrupulous development of qualifications required to perform as a first officer.

In our response to question 2C below we highlight the possible negative impact on competency and possibly flight safety due to an unintended response to an arbitrary flight hour requirement. We acknowledge that the FAA may need to impose a minimum number of flight hours before a first officer may start indoctrination with a part 121 operator; we believe that number is a function of the quality of the education and training experience and suggest that it be recommended to the administrator by an expert panel composed of individuals familiar with all the possible education paths that a candidate first officer may have experienced.

The ANPRM response assumes the Administrator will convene an Aviation Rulemaking Committee (ARC) expert panel to review, consolidate and edit ANPRM responses; and make rulemaking recommendations to the Administrator. We believe and hope you agree that AABI expertise warrants appointment of our representative to serve on the ARC. If the Administrator elects instead to prepare revised rules for qualification of first officers in part 121 operations using some other methodology, we respectfully request that the position statements in this response to the ANPRM be considered.

AABI comments are shown in bold type after repeating each of the published introductions and questions contained in the ANPRM.

Attached to this ANPRM Response is “Appendix A – First Officer Qualification Requirements for Air Carrier Operation”: a draft document created by (AABI), and frequently cited in the responses.

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General Discussion and Request for Information

In this ANPRM, the FAA requests comments and recommendations on the following concepts for the purpose of reviewing current pilot certification regulations. The sequence of these proposals does not reflect any specific FAA preference. When submitting comments on any of these concepts, please refer to the specific question number.

1. Requirement for all pilots employed in part 121 air carrier operations to hold an Airline Transport Pilot (ATP) certificate with the appropriate aircraft category, class, and type rating, or meet the aeronautical experience requirements of an ATP certificate.

Section 61.155 describes the aeronautical knowledge required to qualify for an ATP certificate. Section 61.159 describes the aeronautical experience requirements, which specify a minimum of 1,500 flight hours. Currently, a pilot who serves as a Second-in-Command (SIC) pilot crewmember is required to hold an instrument rating and commercial pilot certificate. We request comments and recommendations on the following issues relating to the option of requiring ATP certificates for all pilot crewmembers in part 121 air carrier operations.

1A. Should the FAA require all pilot crewmembers engaged in part 121 air carrier operations to hold an ATP certificate? Why or why not?

1A Response: No, not for the first officer serving in part 121 air carrier operations. An ATP certificate, as currently specified, requires 1500 hours of flight time and a minimum age of 23. Both these requirements as applied to the first officer qualification are arbitrary. Public safety is better served by requiring the candidate first officer to possess specific knowledge and skills and specifying the competencies that must be acquired and demonstrated to operate safely and successfully in part 121 air carrier operations. (See Appendix A, First Officer Qualification Requirements for Air Carrier Operation, a draft document that we recommend be reviewed by an expert panel Aviation Rulemaking Committee (ARC) for application to first officer competency requirements)

1B. If a part 121 air carrier pilot does not hold an ATP certificate, should he or she nevertheless be required to meet the ATP certificate aeronautical knowledge and experience requirements of § 61.159, even if he or she is serving as SIC? Why or why not?

1B Response:

No, regarding the specified 1500 hour and age 23 requirement.

Yes, regarding aeronautical knowledge.

In addition, an air carrier first officer (SIC) should be required to meet specified competencies recommended in Appendix A of this response to the ANPRM, and/or other competencies as edited by an ARC, so that the candidates will be successful in part 121 training by the employer.

2. Academic Training as a Substitute for Flight Hours Experience.

The FAA seeks public comment on the concept of permitting academic credit in lieu of required flight hours or experience¹. In particular, we request comments on the following issues:

2A. Are aviation/pilot graduates from accredited aviation university degree programs likely to have a more solid academic knowledge base than other pilots hired for air carrier operations? Why or why not?

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2A Response: Yes, we believe that pilot graduates from AABI accredited aviation university or collegiate degree flight education programs will demonstrate a more thorough academic knowledge base than their contemporaries graduating from non-accredited university or collegiate programs, flight training academies, part 61 and 141 flight schools, or flight training accelerated programs. We believe collegiate foundational learning provides them a depth of knowledge gained over years of focused study, that surpasses that of others who might, in worst case, just learn “how to pass the FAA test” or to memorize question banks.

Accredited programs provide a well-rounded education, maturing experiences of a flight training laboratory program closely integrated with academics, exposure to advanced learning technologies. Systematic mentoring from faculty with airline or equivalent experience as an integral part of the educational experience. For many, additional discipline emerges from serving as a flight instructor under a structured operation that in many ways mimics the airline service for which they are preparing. Elements of Safety Management Systems, pervasive incorporation of safety practices in all flight and simulator operations, crew resource management, dispatch procedures, ramp practices, and many other features are embedded in these programs. Relationships with airlines provide internships for students who thereby witness first-hand the environment and cultures of the airline career.

The peer-based process of program accreditation, attention by accreditation-required industry advisory boards to programs, and the continuing evolution of AABI criteria assure these and other attributes. The result is a depth of knowledge that provides a lifelong “ability to learn” and a grasp of the need to do so.

The first officer candidate graduating from academic-based programs accredited by AABI brings with him or her a thorough approach to aviation knowledge that is outcomes-based. While the academic knowledge possessed by any first officer candidate is likely to be a function of individual background, AABI accreditation provides additional quality assurance of the program attended, competency and experience of the faculty, experience in state-of-the-art of laboratory training facilities, and integration of academic and laboratory education curricula. The result is a well-rounded applicant for part 121 operations who can be expected to have a higher success rate in training, in line operations, and check rides.

Anecdotal information from supervisory pilots of participating airlines and feedback acquired by participating institutions in this response to the ANPRM supports our views expressed above. In order to quantify these opinions, we are actively supporting a research project known as “The Pilot Source Study” to review extensive indoctrination data from (initially) six airlines, involving data from over two thousand pilot candidates. This data will be available to the aforementioned ARC to validate or invalidate ANPRM responses and assist the ARC members in determining the competencies and flight hour experience that should be required for first officer pilot applicants.

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2B. Should the FAA consider crediting specific academic study in lieu of flight hour requirements? If so, what kind of academic study should the FAA accept, and to what extent should academic study (e.g., possession of an aviation degree from an accredited four-year aviation program) substitute for flight hours or types of operating experience?

2B Response: Yes, credit for academic study as a substitute for flight hour requirements is appropriate. As noted above, there are many variables associated with the training and quality of education experienced by a first officer candidate, the demonstrated quality of AABI accredited associate and baccalaureate degree flight education program characteristics being one. We recommend that the FAA convene a diverse group of education and training experts from a variety of institutions and companies into the aforementioned ARC or other expert panel to discuss and determine the extent to which academic credit should be granted. We hypothesize that the amount of such credit may be a function of the amount, quality and reliability of education and training provided by the flight school or institution from which the first officer graduates. The Pilot Source Study involves six regional airlines and those results should be provided to the ARC to assist in making a recommendation of the amount of credit for academic study based on sound facts and data.

Perhaps the most important part of any academic training will be Crew Resource Management (CRM) training, a feature embedded by AABI criteria into all accredited flight education programs. CRM is specifically focused on the ability to lead or follow with equal agility. It also develops abilities to communicate with associates, apply critical thinking skills, and generally adopt the hallmarks of a professional aviator. CRM teaches practitioners to have the ability to learn from every experience, to teach what has been learned, and thereby allows the community of crewmembers to benefit accordingly.

2C. If the FAA were to credit academic study (e.g., possession of an aviation degree from an accredited four-year aviation program and/or completion of specific courses), should the agency still require a minimum number of flight hours for part 121 air carrier operations? Some have suggested that, regardless of academic training, the FAA should require a minimum of 750 hours for a commercial pilot to serve as SIC in part 121 operations. Is this number too high, or too low, and why?

2C Response: No, selecting an arbitrary number of flight hours is not appropriate and does not provide the competency-based training and education outcomes that need to be assured. Moreover, education quality is better reflected by the totality of contact hours, some of which may be academic, some in various levels of Flight Simulation Training Devices (FSTDs) and some in aircraft. Together, these contact hours encompass all the training provided directed toward specific competencies (Appendix A). Conversely, rules that govern logging of flight time are very situation specific, and do not account for the distribution of learning in an integrated program.

Industry experience has shown that well-trained pilot candidates with as low as 250 – 350 hours have been successful in achieving excellent performance as new first officers. We suggest that a minimum number of flight hours required in a measurable competency-based training program will emerge from the analysis of competencies such as those in the Appendix A draft by the expert panel (ARC) suggested above, and by analysis of the experience in the Pilot Source Study.

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3. Endorsement for Air Carrier Operations

On October 14, 2009, the U.S. House of Representatives passed bill H.R. 3371, the Airline Safety and Pilot Training and Improvement Act of 2009. The bill is currently being considered by the Senate Committee on Commerce, Science, and Transportation. Under this bill, all flight crewmembers who are engaged in part 121 air carrier operations would be required to hold an ATP certificate. The bill includes a provision that would allow credit toward flight hours for an ATP certificate for specific academic training courses, if the Administrator determines that the academic training courses will enhance safety more than requiring full compliance with the flight hours requirement.

The FAA believes that, although the flight hours required to qualify for an ATP certificate can benefit pilots, experience is not measured in flight time alone. Other factors, such as certain types of academic training, practical training/experience, and experience in a crew environment, are also important. A pilot's skills and abilities may also be enhanced by exposure to specific operational conditions, including icing, high altitude operations, and other areas common to part 121 air carrier operations.

An endorsement on a commercial pilot certificate may be an option for addressing concerns about the operational experience of newly-hired pilots engaged in air carrier/commercial operations. Under this concept, a commercial pilot would not be able to serve as a required pilot in part 121 air carrier operations without having obtained an endorsement attesting to successful completion of additional training and qualified operating experience.

The FAA is therefore considering the creation of a 14 CFR 61.31 endorsement for a commercial pilot certificate that would require specific ground and flight training, as well as additional experience in specific areas, in order to receive part 121 air carrier operating privileges. The additional training for the endorsement could include operating experience in a crew environment, training and exposure to icing, and flight experience in high altitude operations. The current § 61.31(g) endorsement for additional training for operating pressurized aircraft capable of operating at high altitudes might serve as a model. Additionally, the FAA may consider the type-specific aircraft training endorsement in § 61.31(h) as a model. The FAA believes that an endorsement approach would target specific skill sets needed for part 121 operations, and establish the associated standards for content and quality of training. The FAA notes that the endorsement option would also eliminate the time-based requirements that aviation universities argue is not a reasonable requirement for graduates of their four-year aviation degree programs.

We request comments on the following issues regarding the possibility of establishing an endorsement for SIC privileges in part 121:

3A. Should the FAA propose a new commercial pilot certificate endorsement that would be required for a pilot to serve as a required pilot in part 121 air carrier operations? Why or why not?

3A Response: Yes, we accept and recommend this approach.

If the FAA chooses an endorsement as the mechanism to allow a commercial pilot to serve as a required pilot in part 121 air carrier operations, it could consider specific qualification recommendations such as those in Appendix A as a means to assure preparation of candidates for airline indoctrination.

3B. If so, what kinds of specific ground and flight training should the endorsement include?

3B Response: Appendix A (attached) is a suggested list of the certificates and competency requirements associated with the endorsement under the title of "First Officer Qualification Requirements for Air Carrier Operations". They are very specific, and require demonstration of competency both as academic mastery of subject matter and ability to demonstrate knowledge in an appropriate FSTD or airplane. If an FSTD, the specification of the level of device should be addressed by the ARC as a function of the competencies recommended to the Administrator.

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3C. The FAA expects that a new endorsement would include additional flight hour requirements. At a minimum, the FAA requests comments on how many hours should be required beyond the minimum hours needed to qualify for a commercial pilot certificate. Some have suggested that the FAA require a minimum of 750 hours for a commercial pilot to serve as SIC in part 121 operations. Is this number too high, or too low, and why?

3C Response (identical to 2C above): No, selecting an arbitrary number of flight hours is not appropriate and does not provide the competency-based training and education outcomes that need to be assured. Moreover, education quality is better reflected by the totality of contact hours, some of which may be academic, some in various levels of Flight Simulation Training Devices (FSTDs) and some in aircraft. Together, these contact hours encompass all the training provided directed toward specific competencies (Appendix A). Conversely, rules that govern logging of flight time are very situation specific, and do not account for the distribution of learning in an integrated program.

Industry experience has shown that well-trained pilot candidates with as low as 250 – 350 hours have been successful in achieving excellent performance as new first officers. We suggest that a minimum number of flight hours required in a measurable competency-based training program will emerge from the analysis of competencies such as those in the Appendix A draft by the expert panel (ARC) suggested above, and by analysis of the experience in the Pilot Source Study.

3D. The FAA is considering proposing to require operating experience in a crew environment, in icing conditions, and at high altitude operations. What additional types of operating experience should an endorsement require?

3D Response: Practically speaking, operating experience is a term used in part 121 and part 135 to reflect the initial line operation of a pilot at the completion of an employer qualification program. Therefore, we do not agree that actual flight at high altitude, in icing conditions, or any other hazardous training environments should be required as part of the preparation training prior to employment. We agree that academic understanding of crew environment, icing conditions, high altitude operations, including the variability of human response to hypoxia conditions is an appropriate requirement. A suitable FSTD may allow appropriate simulated experience to be acquired.; we suggest this question be addressed by the ARC.

3E. Should the FAA credit academic training (e.g., a university-awarded aviation degree) toward such an endorsement and, if so, how might the credit be awarded against flight time or operating experience? We are especially interested in comments on how to balance credit for academic training against the need for practical operating experience in certain meteorological conditions (e.g., icing), in high-altitude operations, and in the multi-crew environment.

3E Response: In our response to question 2C, we said: “Yes, credit for academic study in lieu of arbitrary flight hour requirements is appropriate. As noted above (answer to 2A), there are many variables associated with the training and education quality experienced by a first officer candidate. We recommend that the FAA convene an ARC composed of a diverse group of education and training experts from a variety of training and education institutions and companies into a panel to discuss and determine the extent to which academic credit should be granted. As noted in our answer to 3D, operating experience is a term used

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in part 121 and part 135 to reflect the initial line operation of a pilot at the completion of an employer qualification program. Therefore, we do not agree that actual flight at high altitude, in icing conditions, or any other hazardous training environments should be required as part of the preparation training prior to employment. We agree that academic understanding of crew environment, icing conditions, high altitude operations is an appropriate requirement. The extent to which practical/laboratory FSTD experience may be incorporated involving icing and high altitude operations (or other training that might be hazardous in an aircraft) should be a determination by the ARC.

4. New additional authorization on an existing pilot certificate.

The FAA may also consider proposing a new authorization on a commercial pilot certificate for any pilot employed as a required flight crewmember for part 121 operations. This new authorization would be limited to a specific part 121 operator, and would be issued only after the pilot successfully completed that part 121 operator's approved training and qualification program. The pilot would surrender this authorization upon leaving the employ of the specific part 121 operator. The purpose of such an authorization would be to ensure that each air carrier has provided its pilot employees with the training and qualifications specific to its operating environment (e.g., aircraft, routes, meteorological conditions). The FAA seeks comments on the following question:

4A. Would a carrier-specific additional authorization on an existing pilot certificate improve the safety of part 121 operations? Why or why not?

4A Response: No, not under current US regulations. Air carriers are already required to provide this level of training for new first officers. It is our understanding that pilots transferring employment are required by existing regulations and practices to undergo the new employers indoctrination program.

4B. Should the authorization apply only to a pilot who holds a commercial certificate, or should it also apply to the holder of an ATP certificate?

4B Response: Whatever disposition is made of the question in 4A should also apply to the holder of an ATP.

4C. Should such an authorization require a minimum number of flight hours? If so, how many hours should be required?

4C Response: We do not recommend the authorization as described, and therefore do not have a recommendation on minimum flight hours. See above answers to questions recommending against substituting flight hours for competency-based criteria.

5. Other actions.

The FAA is seeking comment on whether existing monitoring, evaluation, information collection requirements, and enforcement associated with current pilot performance could be modified to achieve improved pilot performance.

5A. Can existing monitoring, evaluation, information collection requirements, and enforcement associated with pilot performance be modified to improve pilot performance?

5A Response: Industry practices include regulation, accreditation, certification, and other means of assuring quality of education and training. AABI accreditation of flight education programs provides the first

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line of assurance that graduates will meet the requisite competency criteria, have a standard of maturity not assured by other processes, and will perform well in employer indoctrination programs. The system is self-regulating, dynamic in that it continually updates its criteria and standards through interaction with industry, and employs peer review processes to maintain its standards of oversight. AABI itself must meet periodic surveillance and review in order to maintain its status as an accreditor recognized by the Council on Higher Education Accreditation (CHEA). There are thus multiple layers of quality assurance in place for graduates from AABI accredited flight education programs.

With respect to regulations, our perception is that existing monitoring, evaluation, information collection, and enforcement provide the FAA with the necessary tools to assure public safety with one exception: the possibility that an applicant for a first officer endorsement may have a poor performance history unknown to the FAA examiners or designee and the employers. This question raises a number of additional issues regarding the Freedom of Information Act and the Family Education Rights and Privacy Act that should be examined and refined in order to protect public safety and individual privacy.

5B. If so, what specific modifications should be considered?

5B Response: The entire airman examination, accident, and incident record must be disclosed to the examiner and/or employer whenever a pilot candidate presents herself or himself for a new rating or endorsement.

Appendix A to Response to the Advance Notice of Proposed Rulemaking
First Officer Qualification Requirements for Air Carrier Operation

- A. Concept: To attain the First Officer Qualification, the candidate must:
1. Have completed the requirements for the private, commercial, instrument, and multi-engine land **certificates and ratings** under FAR Part 61, 141, or 142.
 2. Have completed the First Officer Qualification **academic and practical/laboratory modules specified in Part D below**.
 3. Have acquired sufficient total hours of flying time to demonstrate the associated competencies described in the academic and practical/laboratory modules in Part D.
 4. Have acquired a sufficient number of total hours of operational flying experience in flight activities such as: flight instructor, charter pilot, military pilot, corporate pilot, Part 91 pilot carrying passengers, or equivalent, so as to demonstrate competency and experience associated with item D24 below.
 5. Have completed the knowledge component for the Airline Transport Pilot (ATP) certificate
 6. Be of high moral character.
- B. The requirements for A1 (**certificates and ratings**) will be completed by graduates of a college or university in which the certificates are earned within the scope of Part 61, 141 or 142 training programs.
- C. The requirements for A2 (**academic and practical/laboratory modules in Part D**) will be demonstrated by the first officer candidate to the FAA or its designee; or through program approval by the FAA or its designee by virtue of being a graduate of an associate or baccalaureate-degree flight education program accredited by the Aviation Accreditation Board International.
- D. Academic and Practical/Laboratory Module Outcomes: The successful student will be able to:
1. Explain turbine engine theory
 2. Explain high altitude airspace and the characteristics of high altitude operations
 3. Explain jet transport navigation and approach procedure chart interpretation
 4. Describe air carrier aircraft flight guidance systems
 5. Explain the effects of high altitude physiology
 6. Conduct air carrier flight planning
 7. Describe high altitude weather
 8. Explain the use of weather radar for detection of precipitation
 9. Describe severe weather avoidance procedures
 10. Describe aircraft icing, anti-icing and de-icing equipment and its use, and the possible consequences of airframe icing
 11. Explain FAR Part 121 – Certification and Operations: Domestic Flag and Supplemental Air Carriers and Commercial Operators of Large Aircraft
 12. Explain a jet transport flight management system
 13. Explain a jet transport engine monitoring system such as EICAS
 14. Explain air carrier operations procedures
 15. Explain air carrier safety programs and issues
 16. Describe and explain hydroplaning
 17. Explain wind shear avoidance
 18. Describe air carrier aircraft systems for an air carrier aircraft equipped with modern avionics.
 19. Describe jet transport aircraft emergency procedures
 20. Compute air carrier aircraft performance, and determine weight and balance
 21. Describe appropriate pilot professional responsibility and ethics
 22. Explain the elements of good customer service
 23. Explain concepts of aviation safety, including FOQA, ASAP, and SMS
 24. Demonstrate and apply, in a suitable airplane or Flight Simulation Training Device (FSTD), the application of the above competencies so as to meet the requirements for employment as a First Officer in Part 121 operations. The type and level of the FSTD will be recommended by an expert panel Aviation Rulemaking Committee (ARC). Concepts such as crew resource management (CRM), crew procedures, Line-Oriented Flight Training (LOFT), upset training scenarios, airline flows and procedures should be considered by the ARC and competency verified through an FAA-approved program process or by a designated FAA testing center.

This document is a draft of appropriate competencies possessed by a first officer candidate seeking employment for Part 121 operations that should be considered by an expert panel Aviation Rulemaking Committee (ARC). The first officer qualification for air carrier operations may be implemented by references, rules and/or endorsements that shall be issued by the FAA Administrator.