

**DEPARTMENT OF TRANSPORTATION****Federal Aviation Administration****14 CFR Parts 61, 121, 135, 141, and 142**

[Docket No. FAA-2010-0100; Notice No. 12-01]

RIN 2120-AJ67

**Pilot Certification and Qualification Requirements for Air Carrier Operations****AGENCY:** Federal Aviation Administration (FAA), DOT.**ACTION:** Notice of proposed rulemaking (NPRM).

**SUMMARY:** This action would create new certification requirements for pilots in air carrier operations. The proposal would require a second in command (first officer) in part 121 operations to hold an airline transport pilot (ATP) certificate and a type rating for the aircraft to be flown. The FAA proposes to allow pilots with an aviation degree or military pilot experience to obtain an ATP certificate with restricted privileges with fewer than 1,500 hours total time as a pilot. The proposal also would require at least 1,000 flight hours in air carrier operations in order to serve as a pilot in command in part 121 air carrier operations. Finally, the FAA is proposing to modify an ATP certificate with an airplane category multiengine class rating or type rating to require 50 hours of multiengine flight experience and completion of a new FAA-approved ATP Certification Training Program for a Multiengine Class Rating or Type Rating that would include academic training and training in a flight simulation training device. These proposed requirements would ensure that pilots have proper qualifications and experience in difficult operational conditions and in a multicrew environment prior to serving as pilot flightcrew members in air carrier operations.

**DATES:** Send your comments on or before April 30, 2012.**ADDRESSES:** You may send comments identified by Docket Number FAA-2010-0100 using any of the following methods:

- *Federal Rulemaking Portal:* Go to <http://www.regulations.gov> and follow the online instructions for sending your comments electronically.

- *Mail:* Send comments to Docket Operations, M-30; U.S. Department of Transportation, 1200 New Jersey Avenue SE, Room W12-140, West Building Ground Floor, Washington, DC 20590-0001.

- *Hand Delivery or Courier:* Take comments to Docket Operations in Room W12-140 of the West Building Ground Floor at 1200 New Jersey Avenue SE., Washington, DC, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

- *Fax:* Fax comments to Docket Operations at 202-493-2251.

For more information on the rulemaking process, see the **SUPPLEMENTARY INFORMATION** section of this document.

*Privacy:* We will post all comments we receive, without change, to <http://www.regulations.gov>, including any personal information you provide. Using the search function of our docket Web site, anyone can find and read the electronic form of all comments received into any of our dockets, including the name of the individual sending the comment (or signing the comment for an association, business, labor union, etc.). You may review DOT's complete Privacy Act Statement in the **Federal Register** published on April 11, 2000 (65 FR 19477-78) or you may visit <http://DocketsInfo.dot.gov>.

*Docket:* To read background documents or comments received, go to <http://www.regulations.gov> at any time and follow the online instructions for accessing the docket, or, the Docket Operations in Room W12-140 of the West Building Ground Floor at 1200 New Jersey Avenue SE., Washington, DC, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

**FOR FURTHER INFORMATION CONTACT:** For technical questions concerning this proposed rule contact Barbara Adams, Aircraft Certification Service, AIR-230, Federal Aviation Administration, 950 L'Enfant Plaza SW., Suite 500, Washington, DC 20024; telephone (202) 385-4286; facsimile (202) 385-6475; email [barbara.adams@faa.gov](mailto:barbara.adams@faa.gov). For legal questions concerning this proposed rule contact Anne Moore, Office of the Chief Counsel—Regulations Division, AGC-240, Federal Aviation Administration, 800 Independence Avenue SW., Washington, DC 20591; telephone (202) 267-3123; facsimile (202) 267-7971; email [anne.moore@faa.gov](mailto:anne.moore@faa.gov).

**SUPPLEMENTARY INFORMATION:** Later in this preamble under the Additional Information section, we discuss how you can comment on this proposal and how we will handle your comments. Included in this discussion is related information about the docket, privacy, and the handling of proprietary or confidential business information. We also discuss how you can get a copy of related rulemaking documents.

**Authority for This Rulemaking**

The FAA's authority to issue rules on aviation safety is found in Title 49 of the United States Code. Subtitle I, Section 106 describes the authority of the FAA Administrator. Subtitle VII, Aviation Programs, describes in more detail the scope of the agency's authority.

This rulemaking is promulgated under the authority described in Subtitle VII, Part A, Subpart III, Section 447. Under that section, the FAA is charged with prescribing regulations for the issuance of airman certificates. In addition, the Airline Safety and Federal Aviation Administration Extension Act of 2010 (Pub. L. 111-216) specifically directed the FAA to conduct a rulemaking proceeding to amend 14 CFR part 61 to modify the requirements for issuance of an ATP certificate. This regulation is within the scope of that authority.

**List of Abbreviations and Acronyms Frequently Used in This Document**

ANPRM—Advance Notice of Proposed Rulemaking  
 ARC—Aviation Rulemaking Committee  
 ATP—Airline Transport Pilot  
 FOQ ARC—First Officer Qualifications Aviation Rulemaking Committee  
 FSTD—Flight Simulation Training Device  
 NPRM—Notice of Proposed Rulemaking  
 PIC—Pilot in Command (Captain)  
 SIC—Second in Command (First Officer)

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**I. Overview**

As discussed in greater detail throughout this document, this rulemaking proposes to modify the requirements for pilots operating in part 121 air carrier operations. Additionally, it would amend the requirements for all pilots seeking to obtain an airline transport pilot (ATP) certificate with an airplane category multiengine class rating and/or type rating. The new requirements would ensure that all pilots entering an air carrier environment have a background of

training and aeronautical experience that would allow them to adapt to a complex, multicrew environment in a variety of operating conditions.

The proposed requirements would most affect any individual seeking an ATP certificate with an airplane category multiengine class rating. The proposed requirements would also affect any person wanting to serve as pilot in command (PIC) in part 121 air carrier operations as well as an individual wishing to serve as PIC in part 91 subpart K operations or part 135 operations as defined by

§ 91.1053(a)(2)(i) or § 135.243(a)(1). In addition, persons wanting to serve as second in command (SIC) in part 121 air carrier operations would be affected by the proposed rules. Any certificate holders approved under part 121, 135, 141, or 142 would be affected by the proposed rule if they choose to offer the proposed ATP Certification Training Program.

A general summary of current versus proposed pilot certification requirements is included in the following table.

Scenario	Current regulations	Proposed regulations
Receive an ATP certificate with airplane category and multiengine class rating.	Be at least 23 years old, hold a commercial pilot certificate with instrument rating, pass a knowledge test and practical test, and have at least 1,500 hours total time as a pilot.	Meet all of the requirements in the current regulations, successfully complete a new ATP Certification Training Program before taking the ATP knowledge test, and have a minimum of 50 hours in class of airplane.
Receive an ATP certificate with restricted privileges (multiengine class rating only).	None .....	Be at least 21 years old, hold a commercial pilot certificate with instrument rating, successfully complete a new ATP Certification Training Program, pass ATP knowledge and practical tests, and for military pilots, have a minimum of 750 hours total time as a pilot, or for a graduate of an aviation degree program, have a minimum of 1,000 hours total time as a pilot.
Serve as a second in command (first officer) in part 121 air carrier operations.	Hold a commercial pilot certificate with appropriate category and class ratings and an instrument rating.	Hold an ATP certificate with appropriate aircraft type rating OR Hold an ATP certificate with restricted privileges and an appropriate aircraft type rating.
Serve as pilot in command (captain) in part 121 air carrier operations.	Hold an ATP certificate with appropriate aircraft type rating and have at least 1,500 hours of total time as a pilot.	Meet all of the requirements in the current regulations and have a minimum of 1,000 flight hours in air carrier operations (as an SIC in part 121 operations, a PIC in operations under either § 135.243(a)(1) or § 91.1053(a)(2)(i), or any combination thereof).

The FAA began considering changes to the certification requirements for SICs in part 121 operations in early 2010, when it published an advance notice of proposed rulemaking (ANPRM) entitled “New Pilot Certification Requirements for Air Carrier Operations.” (75 FR 6164, February 8, 2010). The ANPRM sought input on current part 121 pilot eligibility, training, and qualification requirements for SICs. The FAA received nearly 1,300 comments to the ANPRM, including comments from airlines, associations, universities, and individual pilots. Most agreed that the FAA should strengthen part 121 SIC certification requirements, although

they recommended various methods for improvement.

In order to help develop potential changes to part 121 SIC certification requirements, the FAA chartered an aviation rulemaking committee (ARC) in July 2010. The ARC, comprised of a cross section of the aviation industry, recommended new minimum certification levels and aeronautical experience requirements for SICs, as well as additional flight and ground training requirements. Additionally, the ARC developed a method for crediting various types of academic training and flight experience towards the minimum required flight hours for SICs. Before the

ARC could submit its final recommendations, President Obama signed the Airline Safety and Federal Aviation Administration Extension Act of 2010 (Pub. L. 111–216) (the “Act”), which included several specific provisions related to modifying the ATP certification requirements to prepare pilots to operate more safely in air carrier operations. The FAA asked the ARC to consider the provisions of sections 216 and 217 of the Act in developing its final recommendations.

The current proposals in this NPRM are consistent with the statutory mandates set forth in the Act.

Public Law 111–216 Sections 216 & 217	NPRM
1. All part 121 flightcrew members must hold an ATP by August 2, 2013. (216) .....	An SIC in part 121 must have one of the following: <ul style="list-style-type: none"> <li>• ATP certificate.</li> <li>• Restricted Privileges ATP certificate.</li> </ul> Restricted Privileges ATP certificate.
2. To be qualified to receive an ATP, an individual shall have sufficient flight hours, as determined by the Administrator, to enable a pilot to function effectively in an air carrier operational environment; and have received flight training, academic training, or operational experience * * * to function effectively in an air carrier operational environment. (217). Minimum number of flight hours shall be at least 1,500 flight hours. (217) A pilot need not fully comply with the flight hours requirement above provided specific academic training courses, beyond those listed below, as determined by the Administrator. (217)	

Public Law 111-216 Sections 216 & 217	NPRM
<p>3. All part 121 flightcrew members must have an appropriate amount of multi-engine flight experience, as determined by the Administrator. (216).</p> <p>4. To be qualified to receive an ATP an individual shall have received flight training, academic training, or operational experience that will prepare a pilot to:</p> <ul style="list-style-type: none"> <li>a. function in a multiengine environment;</li> <li>b. function in adverse weather conditions (icing);</li> <li>c. function during high altitude operations;</li> <li>d. to adhere to the highest professional standards; and</li> <li>e. function in an air carrier operational environment. (217)</li> </ul> <p>The total flight hours should include sufficient flight hours in difficult operational conditions. (217)</p> <p>5. To be qualified to receive an ATP, an individual shall have sufficient flight hours, as determined by the Administrator, to enable a pilot to function effectively in an air carrier operational environment. (217).</p> <p>6. Prospective flightcrew members must undergo comprehensive pre-employment screening, including an assessment of the skills, aptitudes, airmanship, and suitability * * * for operating in an air carrier operational environment. (216).</p>	<p>50 hours of aeronautical experience in class of airplane required for an ATP. Aircraft type rating for part 121 SICs. 1,000-hour minimum air carrier experience so serve as a PIC in part 121 operations. ATP Certification Training Course.</p> <p>1,000-hour minimum air carrier experience to serve as a PIC in part 121 operations.</p> <p>Revised ATP requirements (ATP certification training course, higher total time, and multi-engine time). Aircraft type rating for the aircraft to be flown in part 121 operations (SIC). 1,000-hour minimum air carrier experience so serve as a PIC in part 121 operations.</p>

The FAA also considered the responses to the ANPRM, the ARC recommendations, and National Transportation Safety Board (NTSB) safety recommendations when developing the NPRM, insofar as the recommendations and comments did not conflict with the Act's requirements. Throughout this document, the FAA invites commenters to address specific questions, along with any other matters they consider relevant. The FAA is particularly interested in receiving recommendations that would provide the same or better level of experience and training for pilots in air carrier operations at lower cost. Any recommendations should take into account the requirements of sections 216 and 217 of the Act. The FAA may

incorporate any such recommendations in a final rule in this proceeding.

The FAA estimates that the cost will be minimal for the requirement of 50 hours of multiengine time for the ATP certificate with an airplane category multiengine class rating or type rating. The FAA also estimates as minimal the costs of the requirement that a pilot have 1,000 hours of air carrier operating experience prior to serving as a part 121 PIC.

As discussed in more detail below, on a pre-statute basis, the proposed rule has costs that far exceed its benefits. However, about 75 percent of these costs (about \$55 million annualized) are the result of the underlying statutory requirement that all pilots operating under part 121 have an ATP by August

1, 2013. Although the FAA currently requires 1,500 hours for an ATP certificate, the requirement for all part 121 flightcrew members to hold an ATP certificate will take effect whether or not a regulation is issued. If the FAA were not to use its authority to allow credit for academic credit, these projected costs would rise to more than \$87 million annualized. Therefore, the costs associated with this provision are attributable to the statute, not this proposed regulation. The rule has been proposed largely to reflect the requirements of the statute. Accordingly, the table below shows the expected costs of the remaining two primary cost drivers of the proposed rule along with the expected benefits.

	Total cost (\$ mil)	PV cost (\$ mil)	Annualized PV cost (\$ mil)
Part 121 ATP Certificate Requirement .....	\$1,575.2	\$582.0	\$54.9
Type Rating (Part 121 Operators Only) .....	.....	3.4	0.3
ATP Certification Training Program .....	443.3	196.9	18.6
Total Social Cost (Pre-statutory baseline) .....	2,018.5	782.4	73.9
Costs Attributable to Proposed Rule (Post-statutory baseline) .....	443.3	200.4	18.9
	Total benefits (\$ mil)	PV benefits (\$ mil)	Annualized PV benefits
Total Social Benefit .....	\$896.0	\$384.1	\$36.3

**Notes:**

1. Although a social cost, the cost of the ATP certificate requirement is not a cost attributable to the proposed rule, as the requirement is specifically mandated by the Airline Safety Act of 2010.
2. Although incremental total costs of the type rating are zero, incremental present value costs are positive. See discussion in the Regulatory Notices & Analyses section.
3. The same flight test qualifies a pilot for both the ATP certificate and the type rating. The incremental present value cost of the type rating requirement (\$3.4 million) occurs because more current pilots have ATP certificates than type ratings.

4. Owing to a requirement of a preliminary version of this paper, the incremental cost of the type rating requirement includes the cost of the ATP written exam. As this is an extremely small cost, it is not reallocated here to the cost of the ATP certification requirement.
5. Annualized PV Cost/Benefit is the annual cash flow of the 20-year annuity that yields the same present value as the cost/benefit item.
6. Column sums may be off one or more units from totals owing to rounding.

## II. Background

### A. Statement of the Problem

The 2009 Colgan Air accident outside of Buffalo, New York, focused public and Congressional attention on multiple aspects of current air carrier requirements, including the level of training and experience of pilots in part 121 air carrier operations. The accident raised questions regarding whether SICs should be held to the same training and flight hour requirements as PICs, and whether a pilot's overall academic training and the quality of the flight training were as important as the total number of flight hours. The accident also raised questions regarding pilot professionalism and whether pilots received sufficient experience in a multicrew environment.

In an effort to address these questions, the FAA evaluated recent accidents in parts 121 and 135 to determine whether current certification requirements are sufficient to produce pilots who can enter an air carrier environment and train and perform their duties effectively. The accident reports revealed deficiencies in several areas involving training in aircraft manual handling skills, stall and upset recognition and recovery, high altitude operations, pilot monitoring skills, effective CRM, stabilized approaches, and operations in icing conditions. The six proposals in this NPRM are the result of analysis of the accident reports, recommendations of the First Officer Qualification Aviation Rulemaking Committee (FOQ ARC), and the requirements set forth in Public Law 111–216. The proposals are directed at improving the knowledge and skills of pilots before they serve as a required crewmember in air carrier operations.

### B. Current Requirements

Currently, a pilot serving as PIC in part 121 operations must hold an ATP certificate and a type rating for the aircraft flown. Prior to applying for an ATP practical test, a pilot must hold a commercial pilot certificate with an instrument rating, have 1,500 hours total time as a pilot, be 23 years of age, and pass the ATP knowledge test. After a pilot has obtained a commercial pilot certificate, there are no additional ground or flight training requirements prior to applying for an ATP certificate with an airplane category multiengine class rating. In addition, a pilot applying for an ATP certificate with an airplane

category multiengine class rating is not required to obtain any additional experience in a multiengine airplane beyond the minimal hours required for a commercial pilot certificate with a multiengine class rating. A pilot who holds an ATP certificate may serve as PIC in part 121 operations with no prior experience in a part 121 air carrier environment.

Current regulations for part 121 air carrier operations require the SIC to hold at least a commercial pilot certificate with appropriate category and class ratings and an instrument rating. To be eligible for a commercial pilot certificate with an airplane category rating, an applicant must be at least 18 years of age and have 250 hours of flight time (less if the certificate is obtained under a part 141 pilot school or a part 142 training center). An applicant for a commercial pilot certificate with an airplane category multiengine class rating could obtain the certificate with minimal hours of flight time in a multiengine airplane. An SIC in part 121 air carrier operations is not currently required to have an aircraft type rating for the aircraft flown in revenue service; however, an SIC may be required to have a pilot type rating under § 61.55 for flag operations.

### C. History of the Proposed Rule

#### 1. Advance Notice of Proposed Rulemaking (ANPRM)

On February 8, 2010, the FAA published an advance notice of proposed rulemaking (ANPRM) seeking public input on whether current eligibility, training, and qualification requirements for commercial pilots were adequate (75 FR 6164). In the ANPRM, the Agency asked whether all part 121 pilots should hold an ATP certificate and whether they should have 1,500 flight hours even without holding an ATP certificate. Additionally, the Agency asked if academic training could substitute for required flight hours, and, if so, what types of training and how much credit should a pilot receive for the training. Finally, the Agency asked if there should be specific ground or flight training required of part 121 pilots. The comment period for the ANPRM closed on April 9, 2010. The FAA received comments from nearly 1,300 commenters, including flight schools, flight school associations, pilot associations, major and regional carriers, and individuals.

Before the FAA could issue a notice of proposed rulemaking (NPRM) based on the comments from the ANPRM, Public Law 111–216 was enacted on August 1, 2010. The Act sets forth a number of mandates which preclude several of the options underlying the questions posed in the ANPRM. While the FAA has considered and appreciates all of the comments received in response to the ANPRM, the following discussion of the comments focuses on those areas for which the FAA continues to have discretion. All of the comments are publicly available in the docket.

#### a. Effect of Aviation Degrees on Pilot Knowledge Base and Credit for Academic Study

The FAA asked whether pilots who graduate from accredited aviation universities have a stronger knowledge base than pilots without an aviation degree. The FAA also asked whether academic study should be credited for a portion of the required number of flight hours and whether only certain types of academic studies should be credited.

With respect to the question of whether academic study leads to a stronger knowledge base, 781 commenters agreed, including Aviation Accreditation Board International (AABI), Air Line Pilots Association (ALPA), Boeing, International Air Transport Association (IATA), Pilot Career Initiative (PCI), Society of Aviation and Flight Educators (SAFE), Cape Air Nantucket Airlines, and the University Aviation Association (UAA). Most supporters credited the structured learning environment of accredited aviation universities as the major factor in providing a strong knowledge base. Additionally, commenters cited a 2010 Pilot Source Study<sup>1</sup> as evidence that graduates from accredited aviation universities perform better in training. Atlantic Southeast Airlines (ASA), General Aviation Manufacturers Association (GAMA), Regional Airline Association (RAA), and Southern Illinois University Carbondale (SIU) stated graduates of aviation universities took courses pertinent to air carrier operations, which better prepared the graduates for working in an air carrier environment. However, a few commenters noted that, while aviation university graduates do have a stronger

<sup>1</sup> A copy of this study is in the docket for this NPRM.

background, that formal education does not guarantee they will perform better than other flightcrew members.

Forty-one commenters did not agree that aviation degrees lead to a stronger knowledge base. Over half of these commenters, including Ameristar Air Cargo and the Coalition of Airline Pilots Associations (CAPA), believed academics cannot substitute for actual flight experience. Other commenters, including Air Transport Association of America (ATA) and CAPA, stated that quality training was also available outside of aviation universities, including the military.

With respect to the question of crediting academic study toward flight time, 761 commenters, including Boeing, PCI, and the University of Alaska Anchorage Aviation Technology Division, supported the idea. Approximately 700 of these commenters, including AABI, ALPA, Continental Airlines, and the Professional Aviation Board of Certification (PABC), believed in crediting only academics from accredited universities. SAFE and UAA supported crediting any academics related to air carrier operations, regardless of where they were obtained. Two commenters proposed allowing credit for courses from 14 CFR part 141 pilot schools and part 142 training centers. The University of Alaska Anchorage Aviation Technology Division, RAA, National Business Aviation Association (NBAA), ATA, and PCI, agreed with crediting academics but suggested the requirements and standards for doing so need to be determined by an ARC or expert panel.

There were 114 commenters opposed to crediting any academic study in lieu of flight time. Most of these commenters, including American Association for Justice, Ameristar Air Cargo, CAPA, IATA, and the National Transportation Safety Board (NTSB), stated academics cannot substitute for actual experience.

The FAA believes structured academic study can provide a solid foundation that is focused and can prepare a pilot for a career at an air carrier. Additionally, section 217 of the Act allows the FAA to credit specific academic training courses towards the total number of required flight hours for an ATP certificate.

#### b. Minimum Number of Flight Hours With Academic Credit

The FAA asked if pilots who receive credit for academic study should still have a minimum number of flight hours before serving as SIC in part 121 air carrier operations. The FAA offered 750

hours as a possible minimum and sought comment on whether that number was too high, too low, or adequate.

Over 760 commenters favored a minimum hour requirement, although they varied in response to the proposed 750-hour minimum. Approximately 700 of these commenters, including UAA, the University of Alaska Anchorage Aviation Technology Division, and JetBlue Airways, believed 750 hours was too high. Many of those in favor of a lower number of flight hours cited the Pilot Source Study, which claimed pilots with as few as 500 hours performed safely and professionally in part 121 air carrier operations. ALPA, ATA, Calspan Corporation, and SIU stated 750 hours was appropriate, though they offered a variety of conditional reductions for certain qualifications, such as for graduates of aviation colleges or pilots employed by airlines with "formal AQP-developed ab initio programs." Twenty-one commenters, including Ameristar Air Cargo and CAPA, felt 750 hours was too low, indicating that more flight experience leads to better, safer pilots.

Twenty-four commenters were not in favor of any minimum hour requirement. Half of those commenters, including AABI, ASA, Continental Airlines Express, Continental Airlines, and GAMA, stated any minimum requirement would be arbitrary and would not guarantee a higher level of safety. Other commenters stated the FAA should focus on improving overall pilot training rather than hour requirements.

The University of Alaska Anchorage Technical Division, SAFE, and PABC recommended that an ARC or an expert panel should determine if minimum hour requirements were necessary and, if so, what that minimum should be.

The FAA believes actual flight experience is valuable in preparing a pilot to fly in an air carrier environment. The FAA also believes structured academic study can provide a solid foundation that is focused and can prepare a pilot for a career at an air carrier as well. Additionally, section 217 of Public Law 111-216 allows the FAA to credit specific academic training courses to count towards the number of required flight hours for an ATP certificate.

#### c. Improving Existing Monitoring, Evaluation, Information Collection Requirements, and Enforcement Associated With Pilot Performance

The FAA sought input on whether existing regulations could be amended to improve pilot performance and

increase safety. Approximately 60 commenters responded to this question, offering a variety of ways to strengthen existing programs.

Many of the commenters cited the need for greater disclosure of pilot records to facilitate screening of prospective pilots. AABI, Calspan Corporation, Cape Air Nantucket Airlines, PABC, Pilot Career Initiative/Delta Connection Academy, and SAFE suggested an applicant's examination, accident, and incident record be divulged to the examiner or air carrier when he or she is seeking a new certificate, rating, or employment. Others, including Ameristar Air Cargo and the Liberty University School of Aeronautics, called for greater ability to track pilot performance, so carriers could offer additional training to underperforming pilots and pair them with more skilled pilots in a mentoring situation. The Liberty University School of Aeronautics also proposed requiring more time in aircraft type for new captains. The RAA advocated air carrier access to the FAA database of pilot checkride evaluations and enforcement actions for hiring purposes. Commenters also recommended expanding the use of voluntary reporting systems such as ASAP and FOQA. Proponents of these systems included ALPA, Continental Airlines Express, CAPA, and Continental Airlines.

Additionally, commenters suggested modifying existing certificate requirements. Several commenters stated the current minimum hours for both commercial and ATP certificates do not reflect today's more complex airspace and aircraft and that more hours are needed to ensure a pilot has the necessary skills. Others recommended "richer" simulator training sessions that are a closer approximation of actual flying conditions. One commenter stated that, in addition to an ATP certificate, a type rating should be required because a type rating demonstrates a greater knowledge of the specific aircraft being flown. A few commenters suggested less reliance on simulators and more time in an aircraft to teach pilots how to respond better to emergency situations, such as stalls and spins.

The Act addresses many of the areas identified in the comments, including access to pilot records, pilot performance monitoring, safety management systems, and reporting systems. These issues will be the focus of future FAA actions. To the extent that the comments relate to pilot certification requirements, the FAA will consider the comments in light of the

requirements of sections 216 and 217 of the Act.

## 2. First Officer Qualifications Aviation Rulemaking Committee (FOQ ARC)

In response to the ANPRM, the FAA Administrator chartered the FOQ ARC on July 16, 2010. The ARC was comprised of a cross section of the aviation industry with participation from:

- Air Line Pilots Association, International (ALPA)
- Air Transport Association of America, Inc. (ATA)
- Aircraft Owners and Pilots Association (AOPA)
- Aviation Accreditation Board International (AABI)
- The Coalition of Airline Pilots Associations (CAPA)
- National Air Disaster Alliance/Foundation (NADA/F)
- National Business Aviation Association (NBAA)
- Pilot Career Initiative (PCI)
- Regional Airline Association (RAA)

The FOQ ARC provided a forum for the U.S. aviation community to discuss flight experience and training requirements to fly as a first officer (second in command) in a part 121 air carrier operation. The ARC also evaluated the comments received in response to the ANPRM. Specifically, the ARC considered and addressed:

- What should be the minimum certification level required of a First Officer?
- What should be the minimum flight hour experience requirements of a First Officer?
- Can academic training substitute for hours of experience? If so, what subjects and how much flight experience?
- Should there be an air carrier endorsement on a commercial pilot certificate? If so, what kind of flight and ground training should be required?
- Should there be an operational experience requirement (e.g. high altitude, icing) before being permitted to operate as a First Officer?

As a result of the enactment of Public Law 111–216, the Administrator also asked the FOQ ARC to define the flight hours and/or experience in difficult operating conditions that are necessary to prepare a pilot for part 121 air carrier operations. Based on academic references, review of available data in the subject area, and the FOQ ARC's experience in part 121 operations and training, the FOQ ARC members developed recommendations in these areas.

Although the FAA has considered the FOQ ARC's recommendations in drafting this proposed rule, the Agency

retains the authority and obligation to evaluate proposals and independently determine how best to amend existing regulations in accordance with the requirements of the Act. A copy of the FOQ ARC's final report is available for inspection in the docket to this proposed rule.

## FOQ ARC Recommendations

### Substitution of Academic Training for Flight Experience

One of the most challenging topics the ARC was tasked to evaluate was what, if any, academic training courses or programs could be used to replace actual flight experience. The FOQ ARC developed an academic credit system that assessed the quality of each potential component of typical pilots' education and experience. The ARC's system gives credit for both the pilot's total flight-hour experience and specific academic training. The ARC reasoned that certain types of experience and training were more effective in preparing a pilot to transition to an air carrier environment. Although all members of the ARC agreed education was essential to producing safe and effective crewmembers, two FOQ ARC member organizations filed minority opinions disagreeing with the concept of awarding flight-hour credit for academic training.

The FAA believes that, in certain circumstances, the combination of focused academic training and structured flight training can substitute for actual flight experience. Additionally, the FAA finds value in the concept of awarding credit for flight experience that is more applicable to part 121 operations (e.g. multiengine, multicrew aircraft experience); however, it does not believe the Act permits this sort of credit to reduce the minimum required flight hours for the ATP certificate.

### Type Rating for the Aircraft Being Flown for Pilots in Part 121 Air Carrier Operations

The ARC unanimously proposed that all SICs in part 121 air carrier operations have an appropriate type rating for the aircraft to be flown. The ARC believes that training required to obtain a type rating exposes the pilot to an advanced multiengine aircraft and a multicrew environment.

The FAA tentatively agrees that requiring all SICs in part 121 air carrier operations to possess an appropriate type rating for the aircraft to be flown would provide all pilot crewmembers the qualifications necessary to operate in difficult conditions.

### 50 Hours of Multiengine Experience for an ATP Certificate With a Multiengine Class Rating

The FOQ ARC reviewed the requirements of the Act and recommended 50 hours of multiengine experience as a prerequisite for an applicant for an ATP certificate with a multiengine class rating.

The FAA agrees additional multiengine experience would benefit all pilots who are required to hold an ATP certificate with a multiengine class rating. In addition, this recommendation would further the requirements of section 216 of the Act, which requires the Administrator to determine the appropriate amount of multiengine flight hours.

### “Advanced jet training” for Crewmembers Entering Part 121 Service With a “SIC Only” ATP

The FOQ ARC unanimously proposed an “advanced jet training” (AJT) course designed to give instruction in air carrier flightcrew operations in a multiengine aircraft, emphasizing the transition of the professionally qualified pilot to a highly skilled member of an air carrier flightcrew. The ARC proposed course topics including crew resource management (CRM), flightcrew training techniques, high speed and high altitude programming of automatic flight control systems, transport aircraft flight techniques, turbojet operations in all flight regimes and in difficult operational conditions, and use of advanced avionics. The FOQ ARC recommended AJT courses be approved by the FAA to ensure a structured quality training experience. The members of the FOQ ARC recommended that the flight training for the proposed course only be accomplished in simulators.

The FAA agrees that there may be value in a foundational course designed to prepare a pilot for the complexities of air carrier operations. The FAA also believes that if this training were required at the ATP certification level it could address the gap in knowledge between the aeronautical knowledge of a commercial pilot and the knowledge a pilot should have prior to entering an air carrier environment. This training course would provide the flight training in difficult operating conditions required by section 217 of the Act.

### New ATP Practical and a New ATP Written Exam

The FOQ ARC also identified the aeronautical knowledge and flight proficiencies it believes are essential to part 121 first officer qualifications and

recommended that these areas be appropriately evaluated in the knowledge and practical tests for an ATP certificate.

The FAA tentatively agrees the ATP knowledge test should be revised to incorporate new knowledge areas specific to air carrier operations and difficult operational conditions. The FAA believes that including these new knowledge areas in the ATP knowledge test would respond to the requirements of section 217 of the Act.

#### Quality Assurance and Oversight

The FOQ ARC believes that its recommendations to the FAA should, if implemented, be examined and analyzed over time to ensure their effectiveness. The FOQ ARC recommended that a data collection process be instituted for continuous feedback on all pilots attaining an ATP certificate at reduced hours.

The FAA agrees data collection is an essential part to any safety management system and continues to evaluate methods to assess pilot performance beyond those already required. The FAA has convened two ARCs to consider pilot mentoring, leadership, and professional development, as well as flightcrew member education, support, and training standards.

#### Air Carrier Annual Reporting: Flight Hours, Education, Pay and Benefits

The FOQ ARC recommends that, through August 1, 2013, all part 121 air carriers provide an annual report to the FAA showing flight hours, education, and qualifications for each first officer hired during that past year. The ARC's stated purpose of the report would be to show that air carriers are making progress in complying with the provisions of the Act. The qualifications would be disclosed individually and de-identified for each pilot hired. This annual filing report would also include a report on the air carrier's first officer annual pay and benefits. Two ARC member organizations dissented from the recommendation to require air carriers to provide information on pay and benefits.

The FAA has chosen not to adopt this recommendation and is not required to issue regulations on this topic; however, the Agency sees value in ensuring part 121 air carriers are aware of the Act and its requirements as they pertain to pilot flightcrew members. Therefore, the FAA issued Information for Operators (InFO) 10024, Airline Transport Pilot Certificate Requirements for Pilots in Part 121 Operations, on December 15, 2010, which outlined the applicable Act requirements.

#### 3. National Transportation Safety Board (NTSB) Recommendations

Human error has been a major factor in many of the commercial airlines accidents over the past 10 years. This was most recently evidenced in the Colgan Air accident that occurred on February 12, 2009, when the pilot lost control of the aircraft after failing to follow appropriate procedures. The accident resulted in the death of 45 passengers, 2 flight attendants, both pilots, and an individual on the ground. The NTSB's final accident report identified a number of safety issues, including flightcrew member qualifications, failure to adhere to the sterile cockpit rules, and improper handling of the aircraft.

The FAA identified 31 accidents in part 121 air carrier operations and 30 accidents in part 135 air carrier operations from fiscal year 2001 through fiscal year 2010 that could have been mitigated if the proposed enhanced ATP qualification standards and part 121 requirements had been in effect at the time of those accidents. The analysis indicated the accidents were a result of various issues, including improper aircraft handling, poor CRM, poor situational awareness, and inadequate training. These accidents resulted in 107 fatalities, 28 serious injuries, and 44 minor injuries. A detailed description of this analysis, and how it was conducted, is provided in Section E of the initial regulatory evaluation that is available for review in the docket.

The NTSB investigation reports of these accidents revealed, among other issues, inadequacies in the following areas: aircraft handling to include stall and upset recognition and recovery, high altitude training, active pilot monitoring skills, effective CRM, stabilized approaches, operations in icing conditions, and hypoxia training. These accidents resulted in the NTSB issuing several recommendations related to these areas. The changes proposed in the NPRM address, at least in part, the following NTSB recommendations:

- Training of flightcrews to respond to sudden, unusual or unexpected aircraft upsets (Recommendations A-96-120, A-04-62, A-07-3, and A-09-113);
- Develop and conduct stall recovery training and provide stick pusher familiarization training for pilots of stick-pusher equipped aircraft (Recommendations A-10-22 and A-10-23);
- High altitude training (Recommendations A-07-1 and A-07-2);

- Training and guidance for rudder use in transport-category aircraft (Recommendation A-02-2);
- Airport situational awareness (Recommendation A-07-44);
- Stabilized approach concept (Recommendations A-01-69 and A-08-18);
- Landing performance calculations (Recommendations A-07-59 and A-08-41);
- CRM training (Recommendation A-03-52);
- Pilot monitoring duties (Recommendation A-10-10);
- Requirements for flightcrew member academic training regarding leadership and professionalism (Recommendations A-10-15);
- Training in icing conditions (Recommendation A-07-14);
- Hypoxia awareness training (Recommendation A-00-110); and
- Training in crosswinds with gusts (Recommendations A-10-110 and A-10-111).

In the NPRM, the FAA has included a provision that would incorporate the various training areas identified in these NTSB recommendations. The proposed training would include both academic and flight simulation training device (FSTD) training for individuals who apply for an ATP certificate with airplane category multiengine class rating or type rating. The proposed training would have to be completed to become eligible for taking the ATP knowledge test. While these areas may also be addressed in an air carrier's training program, the training proposed in this NPRM would be an ATP certificate requirement aiming to bridge the knowledge and experience gap between a commercial pilot and a professional pilot operating in an air carrier environment.

#### 4. Airline Safety and Federal Aviation Administration Extension Act of 2010 (Pub. L. 111-216)

On August 1, 2010, President Obama signed into law the Airline Safety and Federal Aviation Administration Extension Act of 2010 (Pub. L. 111-216). In addition to extending the FAA's authorization, the Act included provisions to improve airline safety and pilot training. Specifically, section 216, Flight Crewmember Screening and Qualifications, and section 217, Airline Transport Pilot Certification, pertain directly to this rulemaking.

Section 216 requires the FAA to conduct a rulemaking proceeding to require:

- Part 121 air carriers to develop and implement means and methods for

ensuring flightcrew members have proper qualifications and experience;

- All flightcrew members in part 121 air carrier operations to hold an ATP certificate and to have obtained appropriate multiengine flight experience, as determined by the Administrator by August 2, 2013; and
- Prospective flightcrew members to undergo comprehensive pre-employment screening of, including an assessment of the skills, aptitudes, airmanship, and suitability of each applicant for a position as a flightcrew member in terms of functioning effectively in the air carrier's operational environment.

Section 216 requires the FAA to issue an NPRM by January 28, 2011, and a final rule by August 2, 2012. Independent of any rulemaking proceeding by the FAA, this section directs that all flightcrew members in part 121 air carrier operations must hold an ATP certificate, issued under part 61, by August 2, 2013.

Section 217 of the Act requires the FAA to issue a final rule by August 2, 2013, modifying the requirements for an ATP certificate in part 61. The section establishes minimum requirements for an ATP certificate which include:

- Sufficient flight hours, as determined by the Administrator, to enable a pilot to function effectively in an air carrier operational environment;
- Flight training, academic training, or operational experience that will prepare a pilot to function effectively in a multipilot (multicrew) environment, in adverse weather conditions, during high altitude operations, in an air carrier environment, and to adhere to the highest professional standards; and
- Sufficient flight hours, as determined by the Administrator, in difficult operational conditions that may be encountered by an air carrier to enable a pilot to operate safely in such conditions.

The section directs that the minimum total flight hours to be qualified for an ATP certificate shall be at least 1,500 flight hours. Notwithstanding the stated minimum, the section permits the Administrator to allow specific academic training courses to be credited toward the 1,500 total flight hours, provided the Administrator determines that specific academic training courses will enhance safety more than requiring the pilot to fully comply with the flight hours requirement.

Section 217 also requires the Administrator to consider the recommendations from an expert panel established under section 209(b) of the Act. That section focuses on part 121 and part 135 training programs. A report

to Congress and to the NTSB was submitted on September 23, 2011.

#### *D. Related Rulemakings*

On May 20, 2011, the FAA published a supplemental notice of proposed rulemaking (SNPRM) proposing to amend the regulations for crewmember and aircraft dispatcher training programs in domestic, flag, and supplemental operations. (76 FR 29336) This SNPRM focuses solely on part 121 air carrier training program requirements. In contrast, the proposed changes contained within this rulemaking address ATP certification training requirements and qualification requirements for pilot crewmembers in part 121 air carrier operations. The comment period for the SNPRM closed on September 19, 2011.

In addition, the Act led to the establishment of the following ARCs:

- Flight Crewmember Mentoring, Leadership, and Professional Development ARC (section 206 of the Act) to develop procedures for part 121 air carriers to establish flight crewmember mentoring programs, establish flight crewmember professional development committees, establish or modify training programs to accommodate substantially different levels and types of flight experience and to incorporate leadership and command training for all flight crewmembers.

- Flight Crewmember Training Hours Requirement Review ARC (section 209 of the Act) to assess and make recommendations to the Administrator on the best methods and optimal time needed for flightcrew members training in part 121 and 135 air carrier operations including determining the best methods to allow specific academic training courses to be credited toward the total flight-hours required to receive an ATP certificate;

- Stick Pusher and Adverse Weather Event Training ARC (section 208 of the Act) to study and submit to the Administrator a report on methods to increase the familiarity and improve the response of flightcrew members on stick pusher systems, icing conditions, and microburst and windshear weather events.

- Air Carrier Safety and Pilot Training ARC (section 204 of the Act) to establish a special task force to be known as the FAA Task Force on Air Carrier Safety and Pilot Training responsible for evaluating best practices in the air carrier industry and providing recommendations on air carrier management responsibilities for flightcrew member education and support, flightcrew member professional standards, flightcrew member training

standards and performance, and mentoring and information sharing between air carriers.

Following the FAA's review of the recommendations provided by these ARCs, the FAA will proceed with the rulemaking obligations required by sections 206 and 209 of the Act. The Agency may elect to enter into additional rulemaking based on the reports and recommendations of the remaining ARCs.

### **III. General Discussion of the Proposal**

#### *A. ATP Certificate for All Pilots Operating Under Part 121*

Currently, no pilot may act as PIC of an aircraft in part 121 air carrier operations without an ATP certificate and an appropriate type rating for that aircraft. An SIC of a part 121 flag or supplemental operation that requires three or more pilots also must hold an ATP certificate with an appropriate type rating for that aircraft. SICs in all other part 121 air carrier operations are currently required to have only a commercial pilot certificate with the appropriate category and class rating for the aircraft being flown and an instrument rating.

Section 216 of the Act mandates that, within 3 years of enactment, all flightcrew members serving in part 121 operations must hold an ATP certificate.<sup>2</sup> Therefore, the FAA proposes to remove the current certification requirements in § 121.437 and add new §§ 121.435 and 121.436. Section 121.435 would contain the current certification requirements for part 121 pilots, which would expire on July 31, 2013. After that date, the requirements of § 121.436 would apply.

The FAA believes this proposal would have the greatest impact on air carriers that operate regional jet airplanes and/or turbopropeller airplanes. These air carriers generally hire pilots with a commercial pilot certificate and typically less than 1,500 hours total time as a pilot.

The FAA seeks comment on the following:

(1) Is a minimum of 1,500 hours adequate in order to receive an unrestricted ATP certificate? Why or why not?

<sup>2</sup> The FAA notes that section 201 of the Act states that "[t]he term 'flight crewmember' has the meaning given the term 'flightcrew member' in part 1 of title 14, Code of Federal Regulations." Part 1 defines "flightcrew member" as "a pilot, flight engineer, or flight navigator assigned to duty in an aircraft during flight time." Because flight engineers and flight navigators have never been required to qualify as pilots, the FAA assumes Congress did not intend to require ATP certificates for these flightcrew members.

(2) As a result of the new ATP requirement for pilots in part 121 operations, what will be the impact on pilot supply for part 121 operations? For part 135 operations? For part 141 pilot schools? For Part 142 training centers?

*B. Aeronautical Experience Requirement in the Class of Airplane for the ATP Certificate Sought*

Under current regulations, an applicant for an ATP certificate with an airplane category multiengine class rating is not required to obtain any additional multiengine flight experience above the multiengine hours required for a commercial certificate with an airplane category multiengine class rating. Section 216 of the Act addresses the issue of multiengine experience by requiring all pilot flightcrew members serving in part 121 air carrier operations to have appropriate multiengine flight experience, as determined by the Administrator.

As a result of the multiengine requirement in the Act, the FOQ ARC was tasked to identify an appropriate amount of multiengine time for SICs serving in part 121 air carrier operations. The FOQ ARC members recommended a minimum of 50 hours of multiengine flight time to be an SIC.

The FAA believes that multiengine flight experience is essential not only for pilots serving in part 121 air carrier operations but for all pilots who apply for an ATP certificate with an airplane category multiengine class rating. The FAA, therefore, proposes to amend § 61.159 to require 50 hours of flight time in the class of airplane for the ATP certificate sought. This requirement is also included in the new § 61.160. The proposal permits an applicant to receive credit for 10 hours of this flight time in a full flight simulator (FFS) that represents a multiengine airplane. The FAA believes that flight experience in a multiengine airplane provides a valuable foundation that prepares a pilot for a professional piloting career, including a career in part 121 air carrier operations. The FAA believes that this proposal would have minimal impact on pilots seeking an ATP certificate because the hours most often would be acquired while engaged in other commercial aviation activities such as flight instruction or part 135 air carrier operations.

The FAA seeks comment on the following:

(3) Is 50 hours in class of airplane too high, too low, or adequate in order to receive an ATP certificate with airplane category multiengine class rating? Please provide evidence for your response.

*C. Aircraft Type Rating for All Pilots Operating Under Part 121*

Currently, an SIC of a part 121 flag or supplemental operation that requires three or more pilots must also hold an ATP certificate with a type rating for the aircraft being flown. SICs in all other part 121 operations are not required to hold a type rating in the aircraft being flown.

The FAA has determined that requiring an aircraft type rating for all SICs serving in part 121 operations would improve safety in those operations by exposing the pilot to an advanced multiengine aircraft and a multicrew environment. In addition, requiring an SIC to pass a practical test for the aircraft type rating would ensure the PIC and SIC have met the same level of qualification with regard to the aircraft to be flown. Because the practical test for the aircraft type rating would be conducted by FAA inspectors or FAA designees rather than check airmen, the proposed aircraft type rating would also provide an additional level of regulatory oversight of the pilots' skills and abilities.

This NPRM proposes to include in new § 121.436, the requirement that all SICs in part 121 operations hold an aircraft type rating by August 1, 2013. The FAA believes that this proposal would further the objectives of section 216 of the Act, which requires the Administrator to determine the appropriate multiengine airplane flight experience for pilot flightcrew members. In today's air carrier environment, the roles of pilot flying and pilot monitoring are shared by the PIC and the SIC. Requiring an SIC to train to the level of proficiency necessary to obtain a type rating would ensure the SIC has been evaluated to the same standard as the PIC with regard to handling a transport category multiengine airplane. The FAA believes the proposed aircraft type rating also addresses the requirements in section 217 of the Act by allowing pilots to gain some of the necessary academic and flight experience to operate in an air carrier environment. Specifically, the training and testing for a type rating requires a pilot to demonstrate proficiency in the handling of the airplane in difficult operating conditions, including adverse weather conditions and high altitude operations. The FOQ ARC members unanimously recommended that an SIC hold a type rating in the aircraft to be flown in part 121 air carrier operations.

This proposed amendment would impact any part 121 air carrier that does not currently provide an aircraft type rating to an SIC. The FAA estimates

that, for those air carriers that do not currently provide aircraft type ratings for their SICs, the impact of the proposed rule to an air carriers' training program would be low. Currently, all SICs in part 121 operations receive extensive training and a thorough proficiency evaluation at the end of the air carrier's initial training program, such as a proficiency check or line operational evaluation under an advanced qualification program. During the proficiency evaluation, SICs must demonstrate they can perform most of the maneuvers and tasks that would be required for an aircraft type rating. The FAA acknowledges that an SIC may need to receive some additional hours of training on those tasks and maneuvers that are required for a type rating but that are not currently required during the proficiency evaluation. The FAA believes, however, that the practical test for the aircraft type rating could be performed in the same simulator session currently used for the proficiency evaluation. The FAA acknowledges that, unlike a proficiency evaluation, which is typically conducted by a check airman, the practical test for an aircraft type rating would have to be administered by an FAA inspector or FAA designee.

The FAA seeks comment on the following:

(4) Should SICs in part 121 air carrier operations be required to hold an aircraft type rating? Why or why not?

(5) Should all SICs be required to hold an aircraft type rating if the aircraft currently requires a type rating for the PIC, regardless of the rule part the aircraft is operated under (e.g. part 91, 125, or 135)? Why or why not?

*D. ATP Certification Training Program for an Airplane Category Multiengine Class Rating or Type Rating*

The current regulations do not define any specific academic training or flight training requirements that a pilot must complete prior to being qualified to apply for an ATP certificate with multiengine class rating. An applicant for an ATP certificate with an aircraft type rating must receive and log an unspecified amount of ground and flight training specific to the aircraft type or provide a training record indicating completion of a part 121 or part 135 approved PIC training program for the aircraft type rating.

In the NPRM, the FAA proposes adding § 61.154, which would require pilots seeking an ATP certificate with an airplane category multiengine class rating or type rating to complete specific training requirements prior to taking the ATP knowledge test. The proposed

requirements would be completed as part of a training course that would include academic training and training in an FSTD. The course would establish broader foundational knowledge and understanding in areas critical to operating high performance aircraft in a high altitude and complex environment.

Section 217 of the Act indicates that, in order for an applicant to be eligible for an ATP certificate, he or she must have received academic training, flight training, or experience in a number of areas, including: operations in a multi-pilot [multicrew] environment; high altitude operations; and adverse weather conditions. The training and experience should prepare the pilot to function effectively in an air carrier operational environment. This section of the Act also requires the applicant to have experience in difficult operational conditions that may be encountered by an air carrier to enable a pilot to operate safely in such an environment.

The most effective way the FAA can ensure applicants for an ATP certificate have met the requirements of section 217 of the Act is to establish specific training requirements and then evaluate the pilot's understanding of those areas of instruction. Due to the specialized nature of the training, the FAA is proposing to require that the curriculum be completed through an approved training program that would incorporate both the training the Act envisioned and training the FOQ ARC identified as desirable competencies of a part 121 new hire. Due to the inherent risks associated with flying in difficult operational conditions, the FAA, consistent with the FOQ ARC recommendation, is not proposing that this training be accomplished in an actual aircraft. Additionally, due to the focus on air carrier operations, the FAA has proposed that the training be required only for those applicants for an ATP certificate with airplane category multiengine class rating or type rating. This training would not be applicable to single-engine airplane operations, rotorcraft operations, or powered-lift operations.

The academic portion of the training course incorporates most of the competencies identified by the FOQ ARC including: swept wing aerodynamics, automation, air carrier operations, adverse weather conditions, transport aircraft performance, high altitude operations, and navigation. Training in all topics would be taught with an air carrier perspective and focus on the unique characteristics of large transport category aircraft recognizing this would likely be the pilots' first

exposure to many of these aeronautical knowledge areas.

The FSTD portion of the training course would consolidate the knowledge gained from the academic portion of the course and include training in difficult operational conditions, as required by the Act. The areas to be trained in FSTDs also include seven of the nine competency areas identified by the FOQ ARC. Those areas are: convective activity, icing conditions, low-visibility conditions, maximum crosswind conditions, contaminated runways, areas of clear air turbulence, and areas of mountain wave activity. Many of the training topics, such as crew coordination, checklist/briefing items, collision avoidance systems, and performance calculations, could be taught in lower level devices such as Level 4 FTDs. However, the FAA is specifically proposing to require low energy states/stalls, upset recovery techniques, and adverse weather conditions, including icing, thunderstorms, and crosswinds with gusts, be conducted in a Level C or higher FFS. The FAA believes only Level C and higher FFSs can replicate the sensory perceptions necessary to allow the applicant the opportunity to fully grasp these critical concepts.

As a result of the FSTD requirement, the proposed ATP Certification Training Program could only be conducted by the following certificate holders: a part 141 pilot school, a part 142 training center, a part 121 air carrier, or a part 135 air carrier. To maintain consistency of the ATP Certification Training Program, each program would receive approval by a single source, the Air Transportation Division of the Flight Standards Service in Washington, DC. The FAA is making available in the docket for this NPRM a proposed advisory circular that provides information and courseware guidelines that would enable authorized providers to develop a training program that would meet the requirements of the proposed § 61.154.

The FAA proposes, for the ATP Certification Training Program, enhanced instructor requirements for parts 121, 135, 141, and 142. The proposal would require that each instructor of a § 61.154 training course must hold an ATP certificate with an airplane category multiengine class rating, meet the aeronautical experience requirements of § 61.159, and have at least 2 years of experience as a pilot in operations under § 91.1053(a)(2)(i) or § 135.243(a)(1), or in any operation conducted under part 121. The FAA is also proposing to require that instructors who provide training in an

FSTD have an appropriate aircraft type rating which the FSTD represents or have received training in the aircraft type from the certificate holder on those maneuvers they will teach. Although the training course contains academic subjects for which subject matter experts might be appropriate, the majority of the training course would focus on applying high level concepts to an air carrier environment. The FAA believes these concepts can only be properly conveyed through an instructor with operational experience. The FAA has consistently required instructors who provide training related to air carrier operations to have line operational experience. Therefore, the proposed instructor requirements for the ATP Certification Training Program would be consistent with current practice.

In light of the importance of the areas covered in the proposed training course, the FAA would also revise the current ATP knowledge test specifically for applicants who are seeking an ATP certificate with an airplane category multiengine class rating or type rating. To facilitate the transition to the proposed training requirement, those applicants who have not successfully completed the knowledge test prior to August 1, 2013, would be required to complete the training course before applying for the knowledge test. For applicants who pass the knowledge test before that date, the test results would be valid until July 31, 2015. Pilots failing to pass the practical test prior to July 31, 2015, would be required to complete the new training course and retake the knowledge test before applying to take the practical test. The FAA is also proposing that, for those applicants who pass the knowledge test after completing the ATP certification training program, the test results will expire 60 calendar months after the knowledge test was successfully completed. The FAA proposes to amend §§ 61.35, 61.39 and 61.155 to reflect these changes.

The FAA emphasizes that this ATP Certification Training Program would be a basic certification requirement, not an air carrier training program requirement. Although part 121 and part 135 air carriers may elect to offer this training for their pilots, it would remain separate from the air carriers' part 121 and part 135 training requirements. Because the proposed ATP Certification Training Program is foundational, air carriers who elect to offer this training would be required to provide the course to their pilots prior to beginning initial training. A principal operations inspector may approve a reduction of hours in an air

carrier's initial training program based on material taught in the ATP Certification Training Program. However, because the ATP Certification Training Program requirements are basic certification requirements, they may not be reduced based on the contents of an air carrier's initial training program. These requirements would also respond to NTSB Safety Recommendations identified in section II.C.3 of this preamble.

The FAA seeks comment on the following:

(6) Should pilots wanting to obtain an ATP certificate with airplane category multiengine class rating or type rating be required to take an additional training course prior to taking the knowledge test? Why or why not?

(7) If academic training is required in an ATP certification training course, what topics are appropriate? How many hours are appropriate for such a course?

(8) Should an ATP certification training course include non-type specific FSTD training on concepts that are generally universal to transport category aircraft? Why or why not?

(9) If FSTD training is required, what level of FSTD is appropriate? How many hours are appropriate?

(10) Based on the proposed content of the ATP Certification Training Program, what changes or reductions could be made to a part 121 air carrier training program?

(11) The FAA assumes parts 121, 135, 141, and 142 certificate holders will be able to provide the ATP Certification Training Program. What factors would these certificate holders principally consider in determining whether or not to offer the course?

#### *E. ATP Certificate With Restricted Privileges Based on Academic and Military Training*

Although section 217 of the Act mandates that an applicant for an ATP certificate must have "at least 1,500 flight hours," the section also permits applicants to obtain an ATP certificate with fewer than the minimum 1,500 hours if they have completed "specific academic training courses," as determined by the Administrator. Current regulations do not define the term "flight hours"; therefore, the FAA assumes that the 1,500 flight hours referenced in the Act represents the 1,500 hours total time as a pilot currently required by § 61.159. Under current rules, there is a provision that permits a flight engineer to obtain an ATP certificate with fewer than 1,500 hours. Section 61.159 allows a pilot with a commercial pilot certificate to credit up to 500 hours of experience

gained as a flight engineer toward the 1,500 hours total time as a pilot.

Based on the discretion afforded to the Administrator in section 217 of the Act, the FAA proposes a new section, § 61.160. The new section would provide for two alternative hour requirements for an ATP certificate with airplane category multiengine class rating or type rating based on academic experience. The FAA emphasizes that a pilot who obtains an ATP certificate under the aeronautical experience requirements of this new section would have restricted privileges. As specified in proposed § 61.168, a pilot holding an ATP certificate with fewer than 1,500 hours would not be permitted to perform the duties of PIC in any operation that currently requires an ATP certificate, namely, all part 121 operations and operations conducted under §§ 91.1053 and 135.243. A pilot holding a restricted privileges ATP certificate would be permitted to serve as SIC in part 121 operations that do not require three or more pilots. The FAA is proposing to amend § 61.167 in order to preclude a pilot who holds an ATP certificate with restricted privileges from providing instruction in accordance with that section. In addition, the FAA is proposing to modify the eligibility requirements of § 61.153 to establish a minimum age of 21 years for a restricted privileges ATP certificate.

The FAA is proposing the following alternative hour requirements for a restricted privileges ATP certificate with airplane category multiengine class rating or type rating:

- 750 hours for a military pilot; and
- 1,000 hours for a graduate of a four-year baccalaureate aviation-degree program who also received their commercial certificate and instrument rating from an affiliated part 141 pilot school.

Pilots who meet these alternative hour requirements would be required to pass the same ATP knowledge and practical tests as those pilots who obtain an ATP certificate at 1,500 hours. These pilots would have the following limitation placed on their certificates: "Restricted in accordance with 14 CFR § 61.168(a)" and "Holder does not meet the pilot in command aeronautical experience requirements of ICAO." The FAA proposes in new § 61.168 that the restriction may be removed from the ATP certificate once the pilot provides satisfactory evidence that the pilot has met the age requirements in proposed § 61.153(a)(1) and the aeronautical experience requirements of § 61.159. The proposal to allow military pilots and graduates of 4-year colleges and

universities with aviation-related majors to obtain a restricted privileges ATP certificate is based on the specific nature of the training that those pilots receive.

In order to be accepted into a pilot training program in one of the branches of the military, a person must undergo a rigorous screening process including an assessment of the individual's aviation aptitude. Depending on the branch of the military, an applicant for pilot training must hold an associate's degree or a bachelor's degree. Once accepted into a pilot training program, a person is 100 percent dedicated to aviation training. As an example, the United States Air Force Specialized Undergraduate Pilot Training (SUPT) includes 4 to 6 weeks of academic and preflight training on aerospace physiology, altitude chamber tests, aircraft systems, aviation weather, mission planning, and navigation. After academic and preflight training, the Air Force student pilot undergoes 22 weeks of primary aircraft training before transitioning to a track of advanced aircraft training that continues for another 24 to 28 weeks. An Air Force student pilot is committed to a 12-hour duty day while at SUPT, and his or her flight proficiency is continuously assessed throughout training. Additionally, during the flight training phases, an Air Force student pilot participates in flight training every day, normally either in a simulator or an aircraft. Based on the comprehensive and demanding nature of this academic training, the FAA proposes to allow military pilots to apply for the ATP practical test after obtaining 750 hours of flight time and meeting the other aeronautical experience requirements in § 61.160(a).

Based on averages provided by the military, the FAA believes that the majority of military pilots who complete their service obligations will have acquired the 1,500 hours required for an unrestricted ATP certificate. Army pilots, who average approximately 800 hours when they complete their service obligations, and pilots who are honorably discharged from the military prior to completing their service obligation would be most likely to benefit from the reduced hours provision. When applying for the practical test, military pilots would be required to present the documents listed in § 61.73(h) to substantiate their eligibility for a restricted privileges ATP certificate. These documents include an official U.S. Armed Forces record that shows the person graduated from a U.S. Armed Forces pilot training school and received a rating qualification as a

military pilot. The FAA has proposed to amend § 61.39 to reflect this documentation requirement.

With regard to graduates of 4-year colleges and universities with aviation-related majors who obtained their commercial pilot certificate and instrument rating from an affiliated part 141 pilot school, the FAA believes that these students also receive concentrated and focused aviation training. Students complete a course of academic study in an aviation-related major while concurrently training at the university's affiliated FAA-approved part 141 pilot school. Through their academic coursework, these students receive a solid foundation in various topics that may include aeronautical science and technology, aviation meteorology, air traffic operations, air transportation, aviation law, aircraft systems, and CRM. The coursework is comprehensive, structured, and focused on preparing the student, over the course of 4 years, for a professional career in the aviation industry. The flight training accomplished through the college or university's part 141 pilot school is integrated with in-depth academic ground training. The student is continuously evaluated with academic testing and flight evaluations throughout the courses that lead to pilot certificates and ratings. In addition, these aviation programs are specifically focused on preparing pilots for careers in aviation. Under the proposed rule, a graduate of an accredited 4-year college or university who received a bachelor's degree in an aviation-related field and a commercial pilot certificate with an instrument rating from an affiliated part 141 pilot school, would be allowed to apply for the ATP practical test with 1,000 hours total time as a pilot.

The FAA would recognize those postsecondary educational institutions that satisfy the definition of "accredited" as that term is used by the Department of Education in 34 CFR 600.2. The Department of Education maintains a database of accredited postsecondary institutions and programs (<http://ope.ed.gov/accreditation/>). Prior to taking the ATP practical test, pilots would be required to present an official transcript which validates their eligibility for a restricted privileges ATP certificate. The FAA has proposed to amend § 61.39 to reflect this documentation requirement.

The FOQ ARC recommended crediting academic training as well as aeronautical experience. The ARC developed a complex system that not only permitted flight-hour credit for a variety of academic training including both 2- and 4-year aviation degrees, but

also allowed weighted credit for various flight experiences. The weighted flight experience concept gave a multiplier effect to hours that were deemed more applicable to air carrier operations and therefore more valuable to a prospective air carrier flightcrew member. The weighted experiences valued hours such as providing instruction as a certified flight instructor and hours accrued in a multiengine turbine powered airplane. The FAA has reviewed and considered the FOQ ARC's crediting system, and to a limited extent adopted the academic crediting provision. While the FAA finds value in the weighted flight experience concept, the FAA does not believe the Act permits giving added flight hour credit to certain types of flight experience to reduce the minimum required flight hours for the ATP certificate.

The FAA seeks comments on the following:

(12) Should the FAA offer an ATP certificate with restricted privileges for pilots with fewer than 1,500 flight hours based on academic training and/or experience? Why or why not? If so, how many hours would be appropriate? Should anyone other than military pilots or graduates of 4-year colleges and universities with aviation-related degrees and commercial pilot certificates with instrument ratings obtained from an affiliated part 141 pilot school be eligible? Why or why not?

(13) Should military pilots be allowed to receive an ATP certificate with restricted privileges? Why or why not? If so, is the proposed 750 hours too high, too low, or adequate?

(14) Should graduates of 4-year colleges and universities with aviation-related majors and commercial pilot certificates with instrument ratings obtained from an affiliated part 141 pilot school be allowed to receive an ATP certificate with restricted privileges? Why or why not? If so, is the proposed 1,000 hours too high, too low, or adequate?

(15) Should military pilots and/or graduates of 4-year colleges and universities with aviation-related majors and commercial pilot certificates with instrument ratings obtained from an affiliated part 141 pilot school be allowed to receive an ATP certificate without restrictions with fewer than 1,500 hours? Why or why not? If so, how many hours would be appropriate?

(16) Should a pilot who obtains a degree with an aviation-related major from a 4-year college or university and a commercial pilot certificate with instrument rating from a part 141 pilot school not affiliated with the college or

university be eligible for a restricted privileges ATP certificate? Why or why not? If so, how many hours should they be required to have? And, should there be a time limit between the baccalaureate training and the flight training if they were not done concurrently?

(17) Should the FAA consider an alternative licensing structure for pilots who desire only to fly for a part 121 air carrier (e.g. multicrew pilot license)? Why or why not?

(18) If the FAA were to adopt a licensing structure for a multicrew pilot license, what would be the appropriate amount and type of ground and flight training?

#### *F. Minimum of 1,000 Hours in Air Carrier Operations To Serve as PIC in Part 121 Operations*

Under current regulations, a pilot may serve as PIC in part 121 operations with 1,500 hours total time as a pilot. There is no requirement that a pilot have a minimum number of hours as an SIC in air carrier operations prior to serving as PIC. Historically, such a provision was not required due to the number of pilots who had well in excess of 1,500 hours at the time they were hired by air carriers. In addition, these pilots often served as an SIC for several years before serving as PIC as a result of individual air carrier practices. Finally, under current regulations, commercial pilots must serve for a period of time as SIC before obtaining sufficient hours to apply for an ATP certificate and upgrade to PIC. In light of the fact that the SIC lacked sufficient hours to serve as PIC, a natural mentoring process occurred for less experienced pilots.

An unintended consequence of the Act's requirement for all part 121 pilots to hold an ATP certificate is that the natural mentoring of SICs may not occur. The FAA believes that the time that an SIC spends observing a PIC plays an important role in preparing the SIC for eventual upgrade to PIC. A PIC in air carrier operations is expected to possess leadership and command abilities including aeronautical decisionmaking and sound judgment necessary to exercise operational control of the flight. The PIC should serve as a mentor and assist in the professional development of the SIC.

Section 217 of the Act directs the Administrator to determine the sufficient flight hours "to enable a pilot to function effectively in an air carrier environment." The FAA is proposing to add a provision to new § 121.436 that would require a pilot to have 1,000 hours in air carrier operations prior to serving as PIC in part 121 operations.

This requirement would ensure that, prior to serving as PIC in part 121 operations, a pilot has obtained at least one full year of relevant operational experience. The 1,000 hours in air carrier operations may be a combination of time as PIC in operations conducted under § 91.1053(a)(2)(i) or § 135.243(a)(1) or as SIC in part 121 operations. The FAA is proposing to allow a pilot to count PIC time in operations conducted under § 91.1053(a)(2)(i) or § 135.243(a)(1) because these operations require an ATP certificate and type rating and are similar to operations conducted under part 121. A PIC in these operations has demonstrated leadership and command abilities including aeronautical decisionmaking and the judgment necessary to exercise operational control of the flight. Additionally, a PIC in these operations has served as a mentor and assisted in the professional development of SICs. The FAA believes that the training and experience gained in these operations aid in the professional development of a pilot and develop the competencies required to serve as a PIC in part 121 operations. This provision would also address, in part, many of the concerns surrounding pilot professionalism identified by the NTSB in its Safety Recommendation letter to the FAA on February 23, 2010, and address many of the concerns of the FOQ ARC members.

The FAA seeks comments on the following:

(19) If all pilots in part 121 air carrier operations are required to hold an ATP certificate, should there be additional requirements prior to operating as a PIC in part 121 air carrier operations? If so, what should those requirements be?

(20) Is the proposed flight hour requirement for serving as SIC before moving to PIC too long, too short, or adequate?

(21) Should the proposed PIC time in part 91 subpart K or part 135 operations count towards the part 121 PIC requirement? Why or why not?

(22) Should SIC time outside of part 121 operations count towards the proposed requirement? Why or why not?

#### G. Miscellaneous Amendments

The FAA has proposed several miscellaneous amendments to parts 61 and 142. These amendments are non-substantive technical amendments, mostly to define terms, remove obsolete provisions, and make minor conforming changes to existing regulations. One proposal would remove several references to SFAR No. 58 because that provision already was removed from

chapter 14 of the Code of Federal Regulations.

The FAA is also proposing to amend the definitions in § 61.1. The definitions of “flight training device” and “flight simulator” would be removed because those terms are defined in parts 1 and 60. New definitions of “accredited” and “nationally recognized accrediting agency” would be added in order to clarify which institutions’ graduates would qualify for an ATP certificate with restricted privileges.

Additionally, the FAA is proposing several minor conforming amendments to update cross-references in various sections of the regulations and to make other editorial corrections.

#### Paperwork Reduction Act

This proposal contains the following new information collection requirements. As required by the Paperwork Reduction Act of 1995 (44 U.S.C. 3507(d)), the FAA has submitted the information requirements associated with this proposal to the Office of Management and Budget for its review.

*Title:* Pilot Certification and Qualification Requirements for Air Carrier Operations.

*Summary:* This proposal would amend the requirements for obtaining an airline transport pilot (ATP) certificate by requiring pilot applicants for an ATP certificate with airplane category multiengine class rating or type rating to complete a new ATP Certification Training Program. Any part 142 training center, part 141 pilot school, or air carrier wishing to offer the new training program would be required to submit the curriculum to the FAA for approval.

*Use of:* This proposed information collection would ensure pilots seeking employment in an air carrier environment are adequately trained on the knowledge and skills they need to function in a multicrew environment in a variety of operating conditions. The requirement to submit the ATP Certification Training Program curriculum to the FAA for approval would provide greater oversight of the training programs and ensure consistency of both course and instructional quality among the training centers, pilot schools, and air carriers.

Part 121, 135, 141, or 142 certificate holders that wish to offer or provide the ATP Certification Training Program would be required to develop and submit a course for approval by the FAA. For those that provide this training, additional pilot training record keeping would also be required.

The following estimate corresponds to section IV of the economic evaluation.

#### Industry ATP Course Development Costs

Initial number of certificate holders offering the ATP course = 20.  
Time needed to develop the ATP course = 120 hours.  
Salary of a ground instructor = \$32.55.

#### First-Year Cost

*Cost:*  $20 \times 120 \times \$32.55 = \$78,120$ .  
*Time:*  $20 \times 120 = 2,400$  hours.

#### Subsequent Years: Per-Year Costs

*Cost:*  $1 \times 120 \times \$32.55 = \$3,906$ .  
*Time:*  $1 \times 120 = 120$  hours.

#### Total Over 10 Years

*Cost:* \$113,274.  
*Time:* 3,480 hours.

#### Average Per Year

*Cost:* \$11,327.  
*Time:* 348 hours.

#### Industry Recordkeeping Costs

Initial number of ATP applicants = 2910.  
Time needed for recordkeeping per pilot = 0.1 hours.  
Salary of a ground instructor = \$32.55.

#### First-Year Cost

*Cost:*  $2910 \times 0.1 \times \$32.55 = \$9,472$ .  
*Time:*  $2910 \times 0.1 = 291$  hours.

#### Subsequent Years: Avg. Per-Year Costs

*Cost:*  $3,580 \times 0.1 \times \$32.55 = \$11,652$ .  
*Time:*  $3,580 \times 0.1 = 358$  hours.

#### Total Over 10 Years

*Cost:* \$114,306.  
*Time:* 3,512 hours.

#### Average Per Year

*Cost:* \$11,431.  
*Time:* 351 hours.

#### FAA ATP Course Review Costs

Initial number of certificate holders requesting ATP course approval = 20.  
Time needed to review the ATP course = 4 hours.  
Salary of an aviation safety inspector = \$61.50.

#### First-Year Cost

*Cost:*  $20 \times 4 \times \$61.50 = \$4,920$ .  
*Time:*  $20 \times 4 = 80$  hours.

#### Subsequent Years: Per-Year Costs

*Cost:*  $1 \times 4 \times \$61.50 = \$246$ .  
*Time:*  $1 \times 4 = 4$  hours.

#### Total Over 10 Years

*Cost:* \$7,134.  
*Time:* 116 hours.

#### Average Per Year

*Cost:* \$713.  
*Time:* 11.6 hours.

**FAA Approval Letter Costs**

Initial number of certificate holders requesting ATP course approval = 20.  
Time needed to issue the approval letter = 0.5 hours.  
Salary of clerk/secretary = \$24.67.

**First-Year Cost**

*Cost:*  $20 \times 0.5 \times \$24.67 = \$246.70$ .  
*Time:*  $20 \times 0.5 = 10$  hours.

**Subsequent Years: Per-Year Costs**

*Cost:*  $1 \times 0.5 \times \$24.67 = \$12.34$ .  
*Time:*  $1 \times 0.5 = 0.5$  hours.

**Total Over 10 Years**

*Cost:* \$357.72.  
*Time:* 14.5 hours.

**Average Per Year**

*Cost:* \$35.77.  
*Time:* 1.45 hours.

The agency is soliciting comments to—

(1) Evaluate whether the proposed information requirement is necessary for the proper performance of the functions of the agency, including whether the information will have practical utility;

(2) Evaluate the accuracy of the agency's estimate of the burden;

(3) Enhance the quality, utility, and clarity of the information to be collected; and

(4) Minimize the burden of collecting information on those who are to respond, including by using appropriate automated, electronic, mechanical, or other technological collection techniques or other forms of information technology.

Individuals and organizations may send comments on the information collection requirement by April 30, 2012, and should direct them to the address listed in the **ADDRESSES** section at the end of this preamble. Comments also should be submitted to the Office of Management and Budget, Office of Information and Regulatory Affairs, Attention: Desk Officer for FAA, New Executive Building, Room 10202, 725 17th Street NW., Washington, DC 20053.

According to the 1995 amendments to the Paperwork Reduction Act (5 CFR 1320.8(b)(2)(vi)), an agency may not collect or sponsor the collection of information, nor may it impose an information collection requirement unless it displays a currently valid OMB control number. The OMB control number for this information collection will be published in the **Federal Register**, after the Office of Management and Budget approves it.

**International Compatibility**

In keeping with U.S. obligations under the Convention on International

Civil Aviation, it is FAA policy to conform to International Civil Aviation Organization (ICAO) Standards and Recommended Practices to the maximum extent practicable. The FAA has reviewed the corresponding ICAO Standards and Recommended Practices and has identified no differences with these proposed regulations except in the following limited respect. The FAA notes that, although pilots will be able to obtain a restricted privileges ATP certificate in fewer than the ICAO standard of 1,500 hours, those pilots will not have the pilot in command privileges of pilots who hold unrestricted ATP certificates. This pilot in command restriction will be reflected on the pilot's certificate. The experience and qualifications of the pilots who hold restricted privileges ATP certificates will exceed the ICAO standards for second-in-command.

**IV. Regulatory Notices and Analyses**

Changes to Federal regulations must undergo several economic analyses. First, Executive Orders 12866 and 13563 direct that each Federal agency shall propose or adopt a regulation only upon a reasoned determination that the benefits of the intended regulation justify its costs. Second, the Regulatory Flexibility Act of 1980 (Pub. L. 96-354) requires agencies to analyze the economic impact of regulatory changes on small entities. Third, the Trade Agreements Act (Pub. L. 96-39) prohibits agencies from setting standards that create unnecessary obstacles to the foreign commerce of the United States. In developing U.S. standards, this Trade Act requires agencies to consider international standards and, where appropriate, that they be the basis of U.S. standards. Fourth, the Unfunded Mandates Reform Act of 1995 (Pub. L. 104-4) requires agencies to prepare a written assessment of the costs, benefits, and other effects of proposed or final rules that include a Federal mandate likely to result in the expenditure by State, local, or tribal governments, in the aggregate, or by the private sector, of \$100 million or more annually (adjusted for inflation with base year of 1995). This portion of the preamble summarizes the FAA's analysis of the economic impacts of this proposed rule. Readers seeking greater detail should read the full regulatory evaluation, a copy of which has been placed in the docket for this rulemaking.

In conducting these analyses, the FAA has determined that this proposed rule: (1) Satisfies a Congressional requirement to improve aviation safety; (2) is an economically "significant regulatory action" as defined in section

3(f) of Executive Order 12866, (3) is "significant" as defined in the DOT's Regulatory Policies and Procedures; (4) would not have a significant economic impact on a substantial number of small entities; (5) would not create unnecessary obstacles to the foreign commerce of the United States; and (6) would not impose an unfunded mandate on state, local, or tribal governments, or on the private sector by exceeding the threshold identified above. These analyses are summarized below.

**Total Costs and Benefits of This Proposed Rule**

The proposed rule's requirements of an ATP certificate and aircraft type rating for part 121 SICs, 1,000 hours of flight experience in air carrier operations prior to serving as a part 121 PIC—and 50 hours of ME time and a foundational ATP Certification Training Program for pilots seeking an ATP certificate with airplane category and multiengine class rating or type rating—would, as a group of requirements, enhance the qualifications, experience, and seasoning of pilots. As a consequence, the FAA believes that the proposed rule would enhance safety by reducing the accident rate in air carrier operations.

The FAA estimates that the cost will be minimal for the requirement of 50 hours of multiengine time for applicants for the ATP certificate with an airplane category multiengine class rating or type rating. Multiengine hours are typically acquired while engaged in other commercial aviation activities such as flight instruction or part 135 air carrier operations. Airlines currently post minimums for multiengine time from 50 hours to as much as 1,500 hours.<sup>3</sup>

The FAA also estimates as minimal the costs of the requirement that a pilot have 1,000 hours of air carrier operating experience prior to serving as a part 121 PIC. According to information provided by industry,<sup>4</sup> the average number of years for an SIC to upgrade to a PIC is about five years for operators which use regional jet airplanes and/or turbopropeller airplanes and more than ten years for major airlines. Even without air carrier operating experience in part 135 or part 91, subpart K operations, at an average number of 750

<sup>3</sup> Kit Darby, President, [www.KitDarby.com](http://www.KitDarby.com), Aviation Consulting, LLC, Peachtree City, GA.

<sup>4</sup> Owing to the expedited nature of this proposed rule, questionnaires were sent to the Air Transport Association (ATA) and the Regional Airlines Association (RAA), who, in turn, distributed the questionnaire to selected members. Five responses were received from the major airlines and three from the regional airlines.

flight hours a year, an SIC will accumulate the required hours in 1½ years.

Accordingly, Table 1 shows the expected costs of the proposed rule based on the costs of the three remaining requirements—the ATP Certification Training Program, the type rating requirement for part 121 SICs, and the part 121 ATP Certificate requirement for SICs. Table 1 also shows the expected benefits of the proposed rule. Using a pre-statute baseline, the table shows the total costs of the proposed rule to be \$2,018.5 million, with present value cost of \$782.4 million and annualized present value cost of \$73.9 million. The total benefits of the proposed rule are \$896.0 million, with present value of \$384.1 million and annualized present value benefits of \$36.3 million. However,

since the FAA currently requires 1,500 hours for an ATP certificate, and the requirement for an SIC to hold an ATP certificate will take effect whether or not a regulation is issued, the cost of \$1,575.2 million (\$582.0 million in present value) associated with this provision are attributable to the statute, not the proposed regulation. Therefore, using a post-statute baseline, Table 1 shows that the proposed rule is cost beneficial as expected costs are \$443.3 million (\$200.4 million in present value), which are now less than the expected benefits of \$896.0 million (\$384.1 million in present value). In comparing costs and benefits, however, we must consider part 121 operators separately since all of the cost drivers apply to part 121 operators, while just the cost of the ATP Certification

Training Program applies to part 135 and part 91, subpart K, operators.

As the table shows, for part 121 operators the proposed rule is cost-beneficial since present value benefits, at \$225.1 million,<sup>5</sup> are greater than present value costs, at 179.0 million. For part 135 operators present value benefits are \$159.0 million, while present value costs are \$14.8 million, so for part 135 operators the proposed rule is overwhelmingly cost-beneficial. Although the FAA does not have an estimate of benefits for part 91, subpart K, operators, these operators have pilot certification and operating rules similar to part 135 operators. Given the overwhelming benefit-cost ratio for part 135 operators, we are confident that the proposed rule is cost-beneficial for part 91, subpart K, operators as well.

TABLE 1—SUMMARY OF COSTS AND BENEFITS OF PROPOSED FOQ RULE, 2013–2032

	Total cost (\$ mil.)	PV cost (\$ mil.)	Annualized PV cost (\$ mil.)
Part 121 ATP Certificate Requirement .....	\$1,575.2	\$582.0	\$54.9
ATP Practical Test .....	.....	23.3	2.2
ATP 1,500 Hour Requirement .....	2,520.4	901.8	85.1
Savings from 750-hour ATP Military Credit .....	(219.8)	(78.6)	(7.4)
Savings from 500-hour ATP Educational Credit .....	(725.5)	(264.5)	(25.0)
Type Rating (Part 121 Operators Only) .....	.....	3.4	0.3
ATP Certification Training Program .....	443.3	196.9	18.6
Part 121 Operators .....	396.6	175.6	16.6
Part 135 Operators .....	32.5	14.8	1.4
Part 91, Subpart K, Operators .....	14.3	6.5	0.6
<i>Total Social Cost—Part 121 Operators (Pre-statutory baseline)</i> .....	<i>1,971.7</i>	<i>761.0</i>	<i>71.8</i>
Total Social Cost (Pre-statutory baseline) .....	2,018.5	782.4	73.9
<i>Costs Attributable to Proposed Rule—Part 121 Operators (Post-statutory base- line)</i> .....	<i>396.6</i>	<i>179.0</i>	<i>16.9</i>
Costs Attributable to Proposed Rule (Post-statutory baseline) .....	443.3	200.4	18.9
	Total benefits (\$ mil.)	PV benefits (\$ mil.)	Annualized PV benefits
Part 121 Benefits .....	\$525.0	\$25.1	\$21.2
Part 135 Benefits .....	371.0	159.0	15.0
Total Social Benefit .....	896.0	384.1	36.3

**Notes:**

1. Although a social cost, the cost of the ATP certificate requirement is not a cost attributable to the proposed rule, as the requirement is specifically mandated by the Airline Safety Act of 2010.

2. Although incremental total costs of the ATP practical test and type rating are zero, incremental present value costs are positive. See discussion in the text below.

3. The same flight test qualifies a pilot for both the ATP certificate and the type rating. The incremental present value cost of the type rating requirement (\$3.4 million) occurs because more current pilots have ATP certificates than type ratings.

4. Owing to a requirement of a preliminary version of the regulatory evaluation, the incremental cost of the type rating requirement includes the cost of the ATP written exam. As this is an extremely small cost, it is not reallocated here to the cost of the ATP certification requirement.

5. Annualized PV Cost/Benefit is the annual cash flow of the 20-year annuity that yields the same present value as the cost/benefit item.

6. Column sums may be off one or more units from totals owing to rounding.

<sup>5</sup> Some of these benefits are presumably attributable to the statute's ATP requirement, but as noted in the following section, we find at most

\$23.0 million attributable to the statute, with the likely amount much less. As Table 1 shows part 121 benefits to be \$46.1 million greater than costs, the

proposed rule would still be cost-beneficial even if the maximum \$23.0 million were attributable to the statute.

### *Costs and Benefits of the ATP 1500-Hour Requirement*

As the ATP certificate requirement for part 121 SICs is mandated by the Airline Safety Act of 2010 and is self-executing,<sup>6</sup> the FAA attributes the cost of the requirement to the statute and not the proposed rule.

The FAA's Office of Accident Investigation and Prevention (AVP) found little relationship between the 1,500-hour requirement and airplane accidents. Only 7 of the 31 accidents used for the part 121 benefit analysis had SICs with less than 1,500 hours. Moreover, the NTSB reports on these seven accidents indicate other issues addressed by the proposed rule. Finally, the 7 accidents with SICs with less than 1,500 flight hours account for just 10.2% of the FAA's estimated \$225.1 million part 121 benefits, or \$23.0 million, which, accordingly, is the maximum that could be attributable to the statute's 1500-hour requirement.

As the 1,500-hour requirement is required by statute, the FAA did not further pursue the estimation of the requirement's benefits.

### *Who is potentially affected by this rule?*

The proposed requirements would most affect any individual seeking an ATP certificate with an airplane category multiengine class rating. The proposed requirements would also affect any person wanting to serve as pilot in command (PIC) in part 121 air carrier operations as well as an individual wishing to serve as PIC in part 91 subpart K operations or part 135 operations as defined by § 91.1053(a)(2)(i) or § 135.243(a)(1). In addition, persons wanting to serve as second in command (SIC) in part 121 air carrier operations would be affected by the proposed rules.

### *Principal Assumptions and Sources of Information*

- The FAA uses a 20-year period of analysis in order to more fully account for costs that will accumulate over time as new pilots replace retiring pilots unaffected by the proposed rule. As the final rule will become effective on August 2, 2013, the FAA uses the 20-year period of analysis, 2013–2032. As for the most part the FAA is using 2010 prices, in calculating present values discounted back to 2010.

- Discount rate is 7 percent (Office of Management & Budget, Circular A–4, "Guidelines and Discount Rates for

Benefit-Cost Analysis of Federal Programs," October 29, 1992, p. 8, [www.whitehouse.gov/omb/circulars/index.html](http://www.whitehouse.gov/omb/circulars/index.html)).

- VSL (\$6 million) and value of prevented injuries: United States Office of the Secretary of Transportation. Memorandum: Treatment of the Economic Value of a Statistical Life in Departmental Analyses—2009 Annual Revision, March 18, 2009.

- Number of rule-related accidents and associated number of fatalities, number of minor and serious injuries, aircraft model, and aircraft damage: FAA, Office of Accident Investigation and Prevention (AVP).
- Market value of aircraft and restoration costs: APO update to 2008 of data in Economic Values for FAA Investment and Regulatory Decisions, A Guide, Section 5. Office of Aviation Policy and Plans, U.S. Federal Aviation Administration, Wash., DC, Dec. 31, 2004.

- Number of part 121 PICs and SICs by airline and part 135 ATP pilots; and part 91, subpart K, fractional ownership program PICs: FAA, Flight Standards Service, National Vital Information Subsystem (NVIS) database (Nov. 22, 2010; Dec. 10, 2010).

- Pilot growth rate (0.6%): U.S. DOT, FAA, Aviation Policy & Plans. FAA Aerospace Forecast: 2010–2030. Table 29, "Active Pilots by Type of Certificate", Air Transport, Avg Annual Growth, 2009–2030.

- Cost of ATP Certification Training Program and cost of type rating: Industry survey and FAA Flight Standards Service.

- Percentage of SICs without PTC (major & cargo airlines and regional airlines): Estimated from industry survey.

- Percentage of SICs without type rating (major & cargo airlines and regional airlines): Estimated from industry survey.

- Typical number of years for upgrade from SIC to PIC (Major airlines: 10 years, Regionals: 5 years): Estimated from industry survey.

- Typical number of years after which PIC will move from regional airline to major airline (2 years): Industry survey.

- Pilot salary data by airline (2008): [www.airlinepilotcentral.com](http://www.airlinepilotcentral.com).

- Number of part 121 retiring pilots (minimum): Calculated using [www.faa.gov](http://www.faa.gov), Data and Research, U.S. Civil Airmen Statistics, Annual Statistics, 2009. Table 12, "Estimated Active Certificates Held As of December 31, 2009."

- Early and medical pilot retirement rate (0.5%): Email from Kit Darby, President, [www.KitDarby.com](http://www.KitDarby.com), Aviation

Consulting, LLC, Peachtree City, GA, dated 12/18/2010.

- Flight experience of military pilots leaving the service: FAA Flight Standards Service, Air Transportation Division (AFS–200), Air Carrier Training Branch (AFS–210).

- Hiring minimums by airline & airline group and percentage of pilots hired with military training: Kit Darby, President, [www.KitDarby.com](http://www.KitDarby.com), Aviation Consulting, LLC, Peachtree City, GA.

- Number of baccalaureates with aviation-related degrees: Aviation Accreditation Board International (AABI), Gary W. Kiteley, Executive Director, 3410 Skyway Drive, Auburn, AL.

- The FAA assumes safety benefits will grow at the annual growth rate of air carrier revenue passenger miles. Source: U.S. DOT, FAA, Aviation Policy & Plans. FAA Aerospace Forecast: 2010–2030. Table 5, "U.S. Commercial Air Carriers' Total Scheduled U.S. Passenger Traffic", Revenue Passenger Miles, System [Domestic + Int'l], Avg Annual Growth, 2009–2030.

### *Costs of This Proposed Rule*

As discussed above, the FAA estimates costs to be minimal for the requirement that holders of the ATP certificate have 50 hours of multiengine time and the requirement that a pilot have 1,000 hours of air carrier experience prior to serving as PIC in part 121 operations. The FAA estimates that the three remaining provisions of the rule—the ATP Certification Training Program, the type rating requirement for part 121 SICs, and the ATP certification requirement—could have cost implications, although, as already noted, since the latter requirement is mandated by the Airline Safety Act of 2010, the FAA attributes that cost to the statute, not the proposed rule. The costs of each of these three requirements is discussed further below.

### *Cost of ATP Certification Training Program*

The requirement for the ATP Certification Training Program applies to all new applicants for an ATP certificate with an airplane category multiengine class rating or type rating. Accordingly, the ATP Certification Training Program would apply to all pilots in part 121 operations, all PICs in part 91, subpart K, Fractional Ownership Operations, and all part 135 air carrier operations requiring the PIC to hold an ATP certificate. Part 135 operations requiring the PIC to hold an ATP certificate with an airplane category multiengine class rating are (1) commuter operations using multiengine

<sup>6</sup>More specifically, Section 217 of the Act requires that "The total flight hours required by the Administrator \* \* \* shall be at least 1,500 flight hours."

airplanes with nine or fewer passenger seats (“Scheduled 135”) and (2) on-demand operations using multiengine airplanes with 10 or more passenger seats or turbojets.

The FAA anticipates that the ATP Certification Training Program would be a 7-day course, typically conducted by

part 142 training center or a part 121 air carrier just prior to a pilot’s initial pilot training. The FAA anticipates the course would entail three days of ground school and four days of flight training—two days with an FTD and two days with a Level C or D simulator. Typically

two pilots train concurrently in a simulator and this is reflected in the simulator estimates of cost per pilot.

Table 2 reflects the estimated cost factors for the training program and Table 3 reflects the total cost per pilot calculations.

TABLE 2—COST FACTORS FOR THE ATP CERTIFICATION TRAINING PROGRAM

Cost factor	Rate	Period
Ground school instructor .....	\$33 .....	per hour.
Simulator instructor .....	130 .....	per hour.
Level C or D simulator .....	2,000 .....	4-hr simulator event.
FSTD .....	400 .....	4-hr simulator event.
Training pay .....	1,302 .....	per month.
Hotel .....	90 .....	per day.
Per diem .....	45 .....	per day.

**Sources:**

1. Pay rates incorporate a benefits factor of 1.302—Employee Benefit Research Institute, www.ebri.org (Benefit FAQs).
2. Other cost factors—Industry survey and FAA Flight Standards Service.

TABLE 3—COST PER PILOT OF 7-DAY ATP CERTIFICATION TRAINING PROGRAM

Item	Item cost
Ground school instructor (3 days) .....	\$39
Simulator instructor (four 4-hr events) .....	2,083
Level C or D simulator (two 4-hr events, 2 pilots) .....	2,000
FSTD (two 4-hr events, two pilots) .....	400
Training pay & benefits (7 days) .....	304
Hotel (7 days) .....	630
Per diem (7 days) .....	315
<b>Total Cost per Pilot .....</b>	<b>5,771</b>

**Notes:**

1. Ground school class sizes are assumed to average 20 pilots.
2. Simulator instructor, simulator, and FTD costs reflect the fact that flight training is typically done with two pilots concurrently.
3. As the FAA anticipates that the training would take place just prior to initial pilot training, there would be no incremental travel costs.

The FAA uses cost per pilot from Table 3 to estimate total and present value costs for new pilots over the 2013–2032 estimation period. (As indicated in the section on type rating costs below, current pilots without an ATP will be able to obtain one at no additional cost when fulfilling the requirements for a type rating.) The FAA estimates the total cost of the ATP Certification Training Program over the 20-year estimation period, 2013–2032 to be \$443.3 million with present value of \$196.9 million.

**Cost of an ATP Certificate/Aircraft Type Rating**

The rule proposes that all SICs in part 121 operations hold an aircraft type rating for the aircraft flown by August 2, 2013, the same date that the SICs are required to hold an ATP certificate by Congressional mandate. The ATP practical test standards are the same standards used for a type rating practical test. Given the statute’s requirement for an ATP certificate, the incremental cost of the proposed rule’s requirement for an aircraft type rating is zero. Some current SICs, however, already hold the ATP certificate. For

these pilots, there would be an incremental cost for the type rating.<sup>7</sup> Because of their close relationship, in this section the FAA estimates ATP certificate and type rating testing costs concurrently. Far more costly, however, is the requirement (retained by the proposed rule) that an applicant for an ATP certificate have a minimum of 1,500 hours of flight time. A later section entitled, “Cost of the ATP 1,500-hour Requirement”, will show the ATP 1,500-hour requirement to be orders of magnitude more costly than ATP testing costs. Table 4 below shows the cost factors for the ATP and aircraft type rating practical test.

TABLE 4—COST FACTORS FOR AN ATP CERTIFICATE/AIRCRAFT TYPE RATING

Cost factor	Rate	Unit
Ground school instructor .....	\$33 .....	per hour.
Simulator instructor .....	130 .....	per hour.
Check Pilot .....	130 .....	per hour.
Aircrew Program Designee (APD) .....	143 .....	per hour.

<sup>7</sup> Very few pilots hold a type rating without also holding the ATP certificate.

TABLE 4—COST FACTORS FOR AN ATP CERTIFICATE/AIRCRAFT TYPE RATING—Continued

Cost factor	Rate	Unit
Level C or D simulator .....	2,000 .....	4-hr event.
New hire training pay .....	1,302 .....	per month.
SIC pilot pay .....	78 .....	per hour.
Hotel .....	90 .....	per day.
Per diem .....	45 .....	per day.
ATP written test .....	150 .....	per test.

Sources: 1. Pay rates incorporate a benefits factor of 1.302—Employee Benefit Research Institute, www.ebri.org (Benefit FAQs).  
 2. Other cost factors—Industry survey and FAA Flight Standards Service.

These cost factors are now used to estimate the cost per pilot, enabling the cost for all affected pilots to be estimated. The cost estimation per pilot differs considerably between current and new SICs, therefore they are estimated separately.

Cost of ATP Certificate/Aircraft Type Rating per Pilot—New Pilots

The FAA believes that the ATP practical test/aircraft type rating for new pilots would be conducted at the conclusion of initial training, so that the

cost of the ATP/aircraft type rating for new pilots would be incremental to the initial training costs. Table 5 below shows the cost estimates per pilot for new pilots:

TABLE 5—INCREMENTAL COST OF AN ATP CERTIFICATE/AIRCRAFT TYPE RATING PER PILOT FOR NEW PILOTS

Item	Item cost
Level C or D simulator for flight training (4-hr event, 2 pilots—two hours each) .....	\$1,000
Simulator instructor for flight training (4-hr event, 2 pilots) .....	260
Incremental cost of type rating/ATP “Check ride” (Incremental cost of APD) .....	52
Training pay & benefits (1 day) .....	43
Hotel (negotiated rate) (1 day) .....	90
Per diem (1 day) .....	45
ATP written test .....	150
<b>Total</b> .....	<b>1,641</b>

**Note:** Column sums may be off one or more units from totals owing to rounding.

As summarized in the table, the FAA estimates that after initial training, pilots need two additional hours of simulator training to be prepared to take the aircraft type rating check ride (practical test). The same check ride qualifies as the practical test for the ATP certificate so the pilots will qualify for both the aircraft type rating and an ATP certificate simultaneously. Since a check ride is already required during

initial training, the incremental cost for the aircraft type rating/ATP check ride is just the incremental salary and benefits of the Aircrew Program Designee (APD) required to conduct an aircraft type rating or ATP practical test, compared to a check airman. The cost of the ATP written test is included here as it would be required for the ATP practical test.

Cost of an ATP Certificate/Aircraft Type Rating per Pilot for Current SICs

The FAA believes that the aircraft type rating for current SICs would be conducted most efficiently at the conclusion of recurrent training, so that the cost of type rating current SICs would be incremental to the cost of recurrent training. Table 6 below shows our cost estimates per pilot for current SICs:

TABLE 6—INCREMENTAL COST OF AN ATP CERTIFICATE/AIRCRAFT TYPE RATING PER PILOT FOR CURRENT PILOTS

Item	Item cost
Ground school instructor (2 days) .....	\$26
Level C or D simulator for flight training (Two 4-hr events, 2 pilots—4 hours each) .....	2,000
Simulator instructor for flight training (Two 4-hr events, 2 pilots) .....	521
Incremental cost of Level C or D simulator for “Check ride” for type rating/ATP (4-hr event) .....	1,000
Incremental cost of type rating/ATP “Check ride” (Incremental cost of APD) .....	52
Pilot pay (four 4-hr negotiated “training days”) .....	1,250
Hotel (4 days) .....	360
Per diem (4 days) .....	180
<b>Total</b> .....	<b>5,389</b>

**Notes:**

1. The FAA assumes ground school class sizes to average 20 pilots.
2. As the FAA anticipates that the aircraft type rating would be conducted at the conclusion of recurrent pilot training, there would be no incremental travel costs.

As summarized in the table, the FAA estimates that current SICs would need four hours of simulator training to be prepared for the aircraft type rating. The check ride for recurrent training is typically done with two pilots concurrently, whereas the aircraft type rating/ATP check ride is conducted with one pilot, so the incremental cost of a 4-hour simulator event is \$2,000 – \$1,000 = \$1,000. The cost estimate does not include a charge for the ATP written exam as the number of current SICs without the ATP written test completed is estimated to be minimal.

**Cost of an Aircraft Type Rating/ATP for New Part 121 Pilots, 2013–2032**

Under current rules and practice, virtually all part 121 pilots eventually upgrade to PIC, a position for which an aircraft type rating and ATP certificate are required. On average this occurs 5 years into the pilot’s career, often at a regional airline. Under the proposed rule, a new part 121 pilot will be required to have an aircraft type rating and an ATP certificate at the beginning of his or her career as SIC. Since the undiscounted costs are the same under the proposed rule as under the current rule, the incremental undiscounted cost attributable to the proposed rule is zero. Nevertheless, there is an incremental

present value cost stemming from the fact that the costs of the aircraft type rating would be incurred 5 years earlier under the proposed rule.<sup>8</sup> This incremental cost may be expressed as follows:  $C = PV_1 - PV_2$ , where C is the incremental present value cost of the proposed rule;  $PV_1$  is the present value cost of the requirement that new SICs have an aircraft type rating and an ATP certificate immediately upon entering into revenue service; and  $PV_2$  is the present value cost of upgrading in year 5 under the existing rule. When the 20-year cost stream is discounted with the usual discount factors and summed, the FAA obtains  $PV_1 = \$49.9$  million, the present value cost under the proposed rule. When the 20-year cost stream is discounted by an additional 5 years, the FAA obtains the present value cost,  $PV_2 = \$35.6$  million. The incremental present value cost of the proposed aircraft type rating requirement can then be calculated as the increase in present value cost:  $\$49.9 \text{ mil} - \$35.6 \text{ mil} = \$14.3$  million.<sup>9</sup>

**Cost of an ATP Certificate/Aircraft Type Rating for Current Part 121 Pilots, 2013–2032**

First, the cost of an ATP certificate for all current pilots without an ATP certificate is calculated and then,

independently, the cost for all current pilots without a type rating for the airplane flown to obtain an aircraft type rating is calculated. As already noted, the latter cost will be higher since there are fewer current pilots with a type rating than with an ATP certificate. The difference between the ATP certificate cost and the type rating cost will be the incremental cost of the proposed rule’s type rating requirement for current pilots.

The total cost and present value estimates for current pilots for the estimation period, 2013–2032, are shown in Table 7 below:

**Assumptions**

- 7% Discount rate
- 0.6% Pilot growth rate
- \$5,389 Estimated incremental cost of an ATP certificate/aircraft type rating for current pilots
- 9,986 No. of SICs, 2010—regional airlines
- 29,594 No. of SICs, 2010—majors & cargo airlines
- 25.2% of SICs at regional airlines
- 85% of SICs without an ATP certificate—regionals
- 15% of SICs without an ATP certificate—majors & cargo airlines
- 90% of non-type rated SICs—regionals
- 30% of non-type rated SICs—majors & cargo airlines

**TABLE 7—COST OF AN ATP CERTIFICATE/AIRCRAFT TYPE RATING FOR CURRENT PART 121 PILOTS**

Year	Number of part 121 SICs	Number of current part 121 pilots w/o an ATP cert.	Total cost of an ATP cert.	PV Factor	PV Cost of an ATP cert.	PV Factor (2.5 yrs add'l discount)	PV Cost of ATP (2.5 yrs add'l discount)	Net PV Cost of an ATP
<b>Cost of an ATP Certificate</b>								
2013 .....	40,177	13,161	\$70,924,078	0.816	\$57,895,174	0.689	\$48,885,882	\$12,413,978
Year	Number of part 121 SICs	Number of current part 121 pilots w/o an aircraft type rating	Total cost of an aircraft type rating	PV Factor	PV Cost of an aircraft type rating	PV Factor (2.5 yrs add'l discount)	PV Cost of type rating (2.5 yrs add'l discount)	Net PV Cost of type rating
<b>Cost of a Type Rating</b>								
2013 .....	40,177	18,189	\$98,018,226	0.816	\$80,012,070	0.689	\$67,560,999	\$12,451,071

As noted previously, currently only PICs are required to hold an ATP certificate and an aircraft type rating for the airplane flown in revenue service. Based on information provided by

industry, the FAA estimates that about 85% of the SICs for regional airlines and approximately 15% of the SICs of major and cargo airlines do not have an ATP certificate. The corresponding figures

for an aircraft type rating are 90% and 30%. With the additional estimate of 25.2% of SICs at regional airlines, more than 13,000 current (2013) SICs do not have aircraft type ratings.<sup>10</sup> As Table 9

<sup>8</sup> The FAA believes that a small percentage of new SICs (less than 5%) may leave part 121 operations prior to upgrading to PIC. By not taking this potential attrition into account, the FAA’s cost estimates for a type rating/ATP are understated by no more than \$1.8 million in present value. A similar underestimation is made in the analysis for

existing SICs who do not currently hold a type rating.

<sup>9</sup> Pilots will need one or more additional aircraft type ratings as they follow a typical career path from a regional airline to a major airline. However, the average number of years to upgrade for a major airline is more than 10 years, which added to an average 7-year regional airline career, is far into the

future. The low cost of the initial aircraft type rating, combined with heavy discounting, indicates the cost of future additional aircraft type ratings is minimal.

<sup>10</sup> A small percentage of SICs also have not passed the ATP written exam. The estimated total cost for these pilots is minimal.

shows, we estimate \$70.9 million to be the total cost to upgrade current SICs from commercial certificates to ATP certificates. (But, as in the case of new pilots, this is the total cost under both the current rule and the proposed rule, so the incremental total cost is zero.) When discounted with the usual discount factor, a present value cost of \$57.9 million is calculated under the proposed rule. As in the case of new part 121 pilots, however, the incremental present value cost owing to the proposed requirement that pilots must have the ATP certificate immediately when in revenue service must be calculated. Because the FAA has no information on the time in part 121 service of current SICs without an ATP certificate, it is assumed that, on average, they have been in service for 2.5 years and have, on average, 2.5 additional years to serve as SICs before they would upgrade and be required, under current rules, to have an ATP certificate (and aircraft type rating). As the table shows, an additional 2.5 years is discounted to obtain the present value cost of \$48.9 million under the current rule. The incremental PV cost of the earlier requirement for the aircraft type rating is then \$57.9 – \$48.9 = \$9.0 million.

The analogous independent calculation for the type rating cost yields an incremental PV cost of the earlier requirement for a type rating to be 12.4 million. \$12.4 – \$9.0 = \$3.4 million is then the incremental net present value cost of the proposed rule's requirement for a type rating in addition to the statute's requirement for an ATP certificate.

Cost of an ATP Certificate/Aircraft Type Rating for All Part 121 Pilots, 2013–2032

The table below summarizes the cost of an ATP certificate/aircraft type rating for new and current part 121 pilots:

TABLE 8—SUMMARY OF ATP CERTIFICATE/TYPE RATING COST FOR ALL PART 121 PILOTS, 2013–2032

	NPV Cost
ATP Cost—New Pilots .....	\$14.3
ATP Cost —Current Pilots w/o ATP Certificate .....	9.0
Cost of ATP Requirement .....	23.3
Cost of Type Rating .....	3.4
Cost of ATP Certificate/Type Rating .....	26.7

Notes:

1. “Cost Current Pilots w/o ATP” is the cost of providing an ATP certificate (and type rating) to all current pilots with neither.

2. “Cost of Type Rating” is the cost of type rating pilots already holding an ATP certificate.

Estimated Cost of ATP 1,500–Hour Requirement

As previously noted following the Congressional mandate of the Act, the proposed rule requires all SICs in part 121 air carrier operations to have an ATP certificate by August 2, 2013. The FAA proposes to retain the current requirement that ATP holders have at least 1,500 hours of total time as a pilot, except for a newly created restricted privileges ATP certificate under which (1) pilots with military training would require only 750 hours of flight time and (2) pilots with an aviation-related bachelor degree, who also obtained their commercial pilot certificate with instrument rating from an affiliated part 141 pilot school, would require only 1,000 hours of flight time. Holders of a restricted privileges ATP certificate would be allowed to operate as SICs only in part 121 operations and would be required to be at least 21 years old and hold a first class medical certificate.

In this section the cost of the increase in flight time that the ATP certificate requirement will entail is estimated. Only the cost for new pilots is estimated, as, given the depressed hiring environment for pilots in 2009 and 2010, the number of pilots currently with less than 1,500 hours appears to be small<sup>11</sup>, with corresponding minimal costs. For the future, the effect of the requirement would be to delay the careers of pilots in part 121 operations, so the cost of the increased flight hour requirement can be estimated by the reduced salary and benefits that the requirement engenders. From a social point of view, the reduced salary and benefits reflects the loss of pilot productivity the 1,500-hour restriction brings about by delaying the entrance of pilots into part 121 operations and, consequently, delaying their career path.

A common career path of a pilot in part 121 operations is to start out as an SIC (first officer) in a regional airline, upgrade to PIC (captain) at that airline and, subsequently, to become an SIC and a PIC at a major airline. Based on a survey of industry, the FAA estimates the career path of a “typical” pilot in part 121 operations as follows: Upgrade to regional airline PIC after five years, move to a position as SIC at a major airline after two years as PIC at the regional airline, and upgrade to PIC at the major airline after an additional ten years. Under current regulations, a pilot is eligible for part 121 operations with

<sup>11</sup> Industry survey. Confirmed by email from Kit Darby, President, [www.KitDarby.com](http://www.KitDarby.com), Aviation Consulting, LLC, Peachtree City, GA, dated 12/18/2010.

a commercial pilot's license, which requires just 250 hours of flight time.<sup>12</sup>

There is considerable cross-sectional variation in the hiring minimums of regional airlines, but the average total hours minimum appears to be about 750 hours. The number of flight hours the FAA assumes pilots can accumulate in one year is also about 750 hours. Accordingly, the FAA estimates that the proposed requirement for an ATP certificate with 1,500 hours of flight time would, on average, delay a new pilot's part 121 career approximately one year. As pilots with an aviation-related bachelor's degree, who also received their commercial pilot certificate with instrument rating from an affiliated part 141 pilot school, would be allowed to hold the restricted privileges ATP certificate with 1,000 hours, the FAA estimates that their careers will be delayed by only one-third of a year. The part 121 careers of Air Force, Navy, and Marine pilots appear not to be delayed by the proposed rule, as these pilots appear to typically have more than 1,500 hours of flight time when leaving the service, so they will be eligible for the unrestricted ATP certificate. Army pilots typically have at least 750 hours of flight time when leaving the military, so they will be immediately eligible for the restricted privileges ATP certificate under the proposed rule.

In order to calculate the cost of the ATP certificate 1,500-hour requirement, the FAA calculates the earnings and active benefits of a typical pilot in part 121 operations in a 35-year career and then calculates the loss in earnings and active benefits caused by the effect of the hours requirements in delaying that career. The regional airline earnings are estimated by averaging salary and active benefits data for Colgan Air and Mesa Airlines, as this provides a median estimate for the regional airlines included in a recent study.<sup>13</sup> The major airline earnings are estimated using salary and active benefits data for Delta Airlines as this was the median airline in the same study.<sup>14</sup> (Retirement benefits were not included as they greatly complicate the analysis with little effect on present value.) As pilots' salaries differ by type of airplane flown (as well as by airline), an average salary

<sup>12</sup> A graduate of a part 141 pilot school or a part 142 training center can obtain a commercial license with as few as 190 hours of flight time.

<sup>13</sup> [www.KitDarby.com](http://www.KitDarby.com) Aviation Consulting, U.S. Airline Pilot Job Market Overview, April 12, 2010. Peachtree City, Georgia.

<sup>14</sup> The active benefits factor for Colgan Airlines and Mesa Airlines is 1.233 and for Delta Airlines it is 1.15. Kit Darby Aviation Consulting, pp. 34–37.

for each airline was calculated as a weighted average using the number of aircraft of each type as weights. Hourly salary data by airline for 2008 were obtained from

*www.airlinepilotcentral.com* and were converted to monthly figures by multiplying hourly salary by the airline's average credit hours per month.<sup>15</sup>

Based on a 35-year career, the FAA estimated the total cost of a one-year delay in a part 121 pilot's career to be \$130,298, with a present value cost of \$67,598.<sup>16</sup> The FAA estimated the total cost of a one-third year delay in a part 121 pilot's career to be \$43,433, with a present value cost of \$21,226.<sup>17</sup> In order to put these results on a basis comparable to the 20-year estimates of the other costs and of the estimated benefits of this proposed rule, the present value cost is annualized to \$5,221 per year for a one-year delay and \$1,639 per year for a one-third year delay. With these estimates, the FAA calculated the total cost of the ATP certificate 1,500-hour requirement for the estimation period 2013–2032. These calculations are shown in Table 11 of the initial regulatory evaluation.

As the table shows, the total cost of the ATP 1,500-hour requirement for the estimation period, 2013–2032, is about \$1.6 billion, with present value cost of \$558.7 million. Since the FAA requires 1,500 hours for an ATP certificate, and

the requirement to hold an ATP certificate will take effect whether or not a regulation is issued, the costs associated with this provision are attributable to the statute, not this proposed regulation. The FAA further notes that this rulemaking contains a provision that would permit a pilot to obtain a restricted privileges ATP certificate at fewer than 1,500 hours. This allowance for a restricted privileges ATP certificate results in a reduction in the costs that would be incurred if the default provision of the public law went into effect without action by this Agency.

*Benefits of This Proposed Rule*

The FAA expects that this proposed rule would reduce the number of future accidents. The bulk of the benefits of the proposed rule, particularly with part 121 operations, would be the value of the averted fatalities and injuries. The value of averted fatalities and injuries is based on the value of a statistical life, which the Office of the Secretary of Transportation currently estimates to be \$6 million.

Effectiveness of the FOQ Rule in Preventing Accidents

For the 10 fiscal years from 2001 to 2010, the FAA's Office of Accident Investigation and Prevention (AVP) compiled a list of all part 121 accidents and part 135 commuter and on-demand

accidents over that period, along with the number of fatalities, the number of minor and serious injuries, aircraft model, and aircraft damage. From this list they determined the accidents that would have been affected by the proposed rule. AVP assessed that the package of requirements of the proposed rule would have had a likelihood of preventing some of these accidents. Based on NTSB accident reports, AVP assigned each accident a qualitative effectiveness rating and corresponding effectiveness score, which represents the likelihood that the proposed rule would have prevented the accident.<sup>18</sup> All scores were reviewed by a 3-person panel. The Initial Regulatory Evaluation contains a fuller discussion of accidents which may have been averted by the proposed rule and is available in the docket.

(23) The FAA is seeking comment on the effectiveness ratings for each of the accidents identified in Appendix 4 of the Initial Regulatory Evaluation, which is available in the docket.

Total Benefits of the Proposed Rule

Table 9 below shows the estimated cost of accidents that would have had some likelihood of being prevented had the proposed rule been in effect in the period 2001–2010, taking into account 30 part 135 accidents as well as the 31 part 121 accidents:

TABLE 9—ESTIMATED COST OF FOQ RULE-RELATED ACCIDENTS, FY 2001–2010

Operations	Number of accidents	Fatalities	Serious injuries	Minor injuries	Full cost of fatality/injuries (\$ mil.)	Full amt of AP dmge (\$ mil.)	Full accident cost (\$ mil.)	Wtd Ave. rule effectiveness (\$ mil.)	Effective accident cost (\$ mil.)
Part 121 ...	31	65	14	37	\$409.2	\$77.4	\$486.6	0.344	\$167.4
Part 135 ...	30	42	14	7	267.0	131.3	398.3	0.297	118.3
Total ..	61	107	28	44	676.2	208.7	884.9	0.323	285.8

Notes: Column sums may be off by one or more units from totals owing to rounding.

For the 61 accidents partially attributable to pilot qualification issues, over the 10-year sample period the FAA estimated the full accident cost to be \$884.9 million. As the table shows, the weighted average effectiveness (weighting by full accident cost) for all accidents is 0.323. Multiplying this

figure by the full accident cost yields the effective accident cost of \$285.8 that the FAA estimated to be attributable to pilot qualification issues. Appendix 4 of the regulatory evaluation shows the calculations by individual accident.

The FAA assumed the chance of an accident is equally likely in any year of

the 10-year estimation period, for an average effective cost of \$28.58 million per year. Without the proposed rule, the FAA assumed that effective costs would grow at an annual rate of 3.5%, the FAA's forecast average annual growth rate for air carrier revenue passenger miles for the period, 2009–2030.<sup>19</sup> With

<sup>15</sup> Kit Darby Aviation Consulting, pp. 26–27.

<sup>16</sup> Estimating the cost of a one-year delay is straightforward. For the year of delay, the FAA assumed the pilot is accumulating hours at the rate of 750 hours/year as a commercial pilot. The FAA assumed the pilot will earn the same salary as a commercial pilot as he or she will in their first year as a regional airline SIC.

<sup>17</sup> To calculate the cost of a one-third year delay, the FAA assumed that delayed pilots are paid for 1/3 of a year as commercial pilot. All other cash flows are identical to those of the undelayed pilot, with the exception of the last year when the pilot retires at age 65 two-thirds of the way through the 35th pay year.

<sup>18</sup> Federal Aviation Administration. Office of Accident Investigation and Prevention. "An

Assessment of the Effectiveness of Public Law 111–216 in Reducing Accident Risk," November 22, 2010.

<sup>19</sup> U.S. DOT, FAA, Aviation Policy & Plans. FAA Aerospace Forecast: 2010–2030. Table 5, "U.S. Commercial Air Carriers' Total Scheduled U.S. Passenger Traffic", Revenue Passenger Miles, System [Domestic + Int'l], Avg Annual Growth, 2009–2030

the proposed rule, these projected costs become, as avoided costs, benefits of the proposed rule, which are shown for the estimation period, 2013–2032 in the Table 10 below.  
 3.5% Estimated annual growth rate in benefits  
 20 Number of years of estimation period  
 7% Discount rate  
 13.880 20-year growing annuity factor

TABLE 10—ESTIMATED BENEFITS OF PROPOSED RULE, 2013–2032

2013 Benefits (\$ mil.)	Benefits, 2013–2032 (\$ mil.)	20-yr growing annuity factor, discounted 2 years	Present value benefits, 2013–2032 (\$ mil.)
\$31.68	\$896.0	12.12335	\$384.1

As the table shows, estimated total benefits for the estimation period, 2013–2032 are almost \$900 million. Multiplying the estimated \$31.68 million in benefits for 2013 by the 20-year growing annuity factor, discounted 2 years, yields present value benefits of about \$384 million.

The Number of Avoided Accidents and Avoided Fatalities

In this section the FAA calculated directly key primary variables underlying the expected benefits of the proposed rule—the number of accidents and the number of fatalities it expects the proposed rule to prevent. In Table

11, the FAA multiplied the sample number of part 121 and part 135 accidents (from Table 9) by their corresponding weighted average effectiveness rating to obtain the expected number of accidents and fatalities that would have been prevented had the proposed rule been in effect.<sup>20</sup>

TABLE 11—NUMBER OF ACCIDENTS AND FATALITIES PREVENTABLE BY PROPOSED RULE USING 2001–2010 SAMPLE PERIOD ACCIDENTS

Operations	Number of accidents	Fatalities	Weighted average effectiveness	Expected number of accidents avoided	Expected number of fatalities avoided
Part 121	31	65	0.344	10.7	22.4
Part 135	30	42	0.297	8.9	12.5
Total	61	107	0.323	19.7	34.6

Note: The sum of part 121 and part 135 accidents and fatalities avoided may not equal the “Total” number owing to the weighting scheme and/or rounding error.

In Table 12 the FAA used the average number of expected accidents and fatalities avoided per year from the Table 11 analysis to project the total number of accidents and fatalities that, with the proposed rule, would be

prevented over the 20-year estimation period, 2013–2032. As with benefits, the FAA assumed the number of accidents and fatalities would grow at the annual rate of 3.5%. Table 12 shows that 61.3 is the number of accidents that would

be prevented by the proposed rule over the 20-year period, 2013–2032 (33.4 for part 121 and 27.9 for part 135). For fatalities Table 12 shows that 109.2 is the number that would be prevented (70.1 for part 121 and 39.1 for part 135).

TABLE 12—NUMBER OF ACCIDENTS AND FATALITIES AVOIDED UNDER THE PROPOSED RULE, ESTIMATION PERIOD, 2013–2032

Year	Part 121 accidents avoided	Part 135 accidents avoided	Part 121 fatalities avoided	Part 135 fatalities avoided
2010	1.1	0.9	2.2	1.2
2011	1.1	0.9	2.3	1.3
2012	1.1	1.0	2.4	1.3
2013	1.2	1.0	2.5	1.4
2014	1.2	1.0	2.6	1.4
2015	1.3	1.1	2.7	1.5
2016	1.3	1.1	2.7	1.5
2017	1.4	1.1	2.8	1.6
2018	1.4	1.2	2.9	1.6
2019	1.5	1.2	3.0	1.7
2020	1.5	1.3	3.2	1.8
2021	1.6	1.3	3.3	1.8
2022	1.6	1.3	3.4	1.9
2023	1.7	1.4	3.5	2.0
2024	1.7	1.4	3.6	2.0

<sup>20</sup> What is calculated here is the “effective” number of accidents and fatalities avoided since the

most costly accidents (or, equivalently, the most

beneficial avoided accidents) have greater weight in determining weighted average effectiveness.

TABLE 12—NUMBER OF ACCIDENTS AND FATALITIES AVOIDED UNDER THE PROPOSED RULE, ESTIMATION PERIOD, 2013–2032—Continued

Year	Part 121 accidents avoided	Part 135 accidents avoided	Part 121 fatalities avoided	Part 135 fatalities avoided
2025 .....	1.8	1.5	3.7	2.1
2026 .....	1.8	1.5	3.9	2.2
2027 .....	1.9	1.6	4.0	2.2
2028 .....	2.0	1.7	4.2	2.3
2029 .....	2.1	1.7	4.3	2.4
2030 .....	2.1	1.8	4.5	2.5
2031 .....	2.2	1.8	4.6	2.6
2032 .....	2.3	1.9	4.8	2.7
Subtotal .....	33.4	27.9	70.1	39.1
Total .....		61.4		109.2

Note: Sums may not equal “Subtotal” or “Total” owing to rounding error.

*Initial Regulatory Flexibility Determination*

Introduction and Purpose of This Analysis

The Regulatory Flexibility Act of 1980 (Pub. L. 96–354) (RFA) establishes “as a principle of regulatory issuance that agencies shall endeavor, consistent with the objectives of the rule and of applicable statutes, to fit regulatory and informational requirements to the scale of the businesses, organizations, and governmental jurisdictions subject to regulation. To achieve this principle, agencies are required to solicit and consider flexible regulatory proposals and to explain the rationale for their actions to assure that such proposals are given serious consideration.” The RFA covers a wide-range of small entities, including small businesses, not-for-profit organizations, and small governmental jurisdictions.

Agencies must perform a review to determine whether a rule will have a significant economic impact on a substantial number of small entities. If the agency determines that it will, the agency must prepare a regulatory flexibility analysis as described in the RFA.

However, if an agency determines that a rule is not expected to have a

significant economic impact on a substantial number of small entities, section 605(b) of the RFA provides that the head of the agency may so certify and a regulatory flexibility analysis is not required. The certification must include a statement providing the factual basis for this determination, and the reasoning should be clear.

The FAA believes that this proposed rule would not have a significant impact on a substantial number of small entities for the following reason: The annualized cost of the proposed rule is less than 0.5% of operating revenues for all small firms that would be affected by the proposed rule.

Reasons Action by the FAA Is Being Considered

The purpose of this proposed rule is to meet pilot certification and qualification requirements imposed by Congress in Sections 216 and 217 of the Airline Safety and Federal Aviation Extension Act of 2010 (Pub. L. 111–216). This Act had its genesis in the crash of Colgan Air Flight 3407 that occurred in Buffalo, New York, on February 12, 2009, destroying the airplane, damaging residential homes, and resulting in 50 fatalities.

Objectives of, and Legal Basis for, the Proposed Rule

The FAA’s authority to issue rules on aviation safety is found in Title 49 of the United States Code. Subtitle I, Section 106 describes in more detail the scope of the agency’s authority. This rulemaking is promulgated under the authority described in Subtitle VII, Part A, subpart III, Section 447.

Description of the Small Entities to Which the Proposed Rule Will Apply and an Estimate of Their Number

The proposed rule would affect small firms in part 121, part 135, and part 91, subpart K, operations in the following North American Industry Classification System (NAICS) industries, which shows that the Small Business Administration (SBA) size standard is 1,500 employees for all four industries.<sup>21</sup> The SBA size standard is the largest size that a business (including its subsidiaries and affiliates) may be to remain classified as a small business for SBA.

<sup>21</sup> U.S. Small Business Administration. Table of Small Business Size Standards Matched to North American Industry Classification System Codes, July 21, 2006.

TABLE 13—SBA SIZE STANDARD FOR NAICS AIR TRANSPORTATION INDUSTRIES

NAICS Code	2002 U.S. NAICS Title	SBA Size standard
481111 .....	Scheduled Passenger Air Transportation .....	1,500 employees.
481112 .....	Scheduled Freight Air Transportation .....	1,500 employees.
481211 .....	Nonscheduled Chartered Passenger Air Transportation .....	1,500 employees.
481212 .....	Nonscheduled Chartered Freight Air Transportation .....	1,500 employees.

As the size standard is identical at 1500 employees for all four air transportation industries, the FAA does not attempt to classify each of the affected firms into one of these industries. The FAA identifies 93 part 121 air carrier operators, all of which would be affected by the proposed rule.

Using Department of Transportation employment data,<sup>22</sup> the FAA identified 32 part 121 operators as large and an identical number as small. The FAA identified 8 more part 121 operators as large, 7 as subsidiaries of a group with more than 1,500 employees and 1 known to be large (UPS). The FAA inferred 31 more operators to be small on the basis of pilot numbers. The largest small part 121 operator has 1,446 employees and 391 pilots, the largest number of pilots for any part 121 operator identified as small. In terms of pilot numbers, the largest operator that the FAA inferred to be small had 231 pilots. So in all, the FAA identified 40 of the part 121 operators as large and 53 as small.

The FAA had no corresponding employment data for part 135 and part 91, subpart K, operators. The largest part 135 operator, however, had just 55 PICs, so the FAA infers that all 1,106 part 135 operators are small. The FAA also identified seven of the eight part 91, subpart K, operators as small on the basis of pilot numbers, the largest part 91, subpart K, operator identified as small having 378 pilots.

Description of the Projected Reporting, Recordkeeping and Other Compliance Requirements of the Proposed Rule

Reporting and Recordkeeping Requirements

The proposed rule levies requirements that must be met by certificate holders who wish to offer or provide the ATP Certification Training Program. While requiring the gathering and maintaining of information and, in certain cases, the reporting of some of that information to the FAA, these sections require no additional burdens on the certificate holders beyond what is currently required by rule or that which is currently borne by certificate

holders in regular practice. Exceptions to this are the following:

a. One time development and submission of an ATP Certification Training Program to the FAA for approval.

b. One time recordkeeping costs for pilot training records pertaining to completion of the ATP Certification Training Program.

#### Other Compliance Requirements

Consistent with the requirements of the Act and based on some of the recommendations of the First Officer Qualifications Aviation Rulemaking Committee (FOQ ARC), this proposed rule would require the following:

1. An ATP certificate for all pilots operating in part 121. The proposed requirement will retain the 1,500 hours total time as a pilot required for an ATP certificate but allow an ATP certificate with restricted privileges to be held by military pilots with 750 hours of flight experience and by baccalaureates from an aviation program who obtained their commercial pilot certificate with instrument rating from an affiliated part 141 pilot school and who have 1,000 hours of flight experience. The ATP with restricted privileges would allow a pilot to serve in part 121 air carrier operations as an SIC only. A first class medical certificate will remain the requirement for exercising the privileges of an ATP certificate (restricted or unrestricted). The minimum age for an ATP certificate with restricted privileges would be reduced to 21 years of age. The current requirement for an ATP certificate will remain at 23 years of age.

2. A minimum of 50 hours of multiengine (ME) flight experience. This requirement would apply not just to pilots serving in part 121 operations, but for all pilots who apply for an ATP certificate with an airplane category multiengine class rating. This would include PICs in part 135 air carrier operations that require the PIC to hold an ATP certificate, and PICs in part 91, subpart K, Fractional Ownership Programs, which require the PIC to hold an ATP certificate. The FOQ ARC also recommended 50 hours of multiengine time.

3. An ATP Certification Training Program for applicants for an ATP

certificate with an airplane category multiengine class rating or type rating. The FOQ ARC made a similar proposal. This is a foundational course that the FAA believes should be required at the certification level to address the gap in aeronautical knowledge of a commercial pilot and the knowledge a pilot should have prior to entering an air carrier environment. The course would include academic study as well as simulator flight training, including training in difficult operational conditions. This requirement will necessitate changes in the ATP knowledge and practical tests. In addition to all pilots in part 121 operations, this requirement would apply to PICs in part 135 air carrier operations that require the PIC to hold an ATP certificate, and PICs in part 91, subpart K, Fractional Ownership Operations, which require the PIC to hold an ATP certificate.

4. An aircraft type rating for all SICs serving in part 121 operations. The FOQ ARC made the same recommendation. Current part 121 requirements require only the PIC to hold an aircraft type rating. The FAA has determined that this requirement would improve safety in part 121 operations by further exposing the pilot to an advanced multiengine aircraft and a multicrew environment. Also the training and testing for an aircraft type rating requires a pilot to be tested to the same standard as the PIC and demonstrate proficiency in difficult operational conditions, including adverse weather and high altitude operations.

5. A minimum of 1,000 hours in air carrier operations to serve as PIC in part 121 operations. An unintended consequence of the Act's requirement for all part 121 pilots to hold an ATP certificate is that the natural mentoring of SICs may not occur. The 1,000-hour requirement would ensure that a pilot would have at least one full year of relevant operational experience before upgrading to PIC. The FAA proposes to allow a pilot to count SIC time in part 121 operations as well as PIC time in part 135 operations and in part 91, subpart K, Fractional Ownership Operations, that require an ATP certificate per the operating rule part.

The FAA estimates that cost will be minimal for the requirement of 50 hours

<sup>22</sup> [www.bts.gov/programs/airline\\_information/number\\_of\\_employees/](http://www.bts.gov/programs/airline_information/number_of_employees/)

of ME time for the ATP with an airplane category multiengine class rating. As noted in the preamble above, multiengine hours are typically acquired while engaged in other commercial aviation activities such as flight instruction or part 135 air carrier operations on the way to obtaining the ATP. Airlines, currently post minimums

for multiengine time from 50 hours to as much as 1,500 hours.<sup>23</sup>

The FAA also estimates as minimal the costs of the requirement that a part 121 SIC have 1,000 hours of air carrier operating experience before upgrade from SIC to PIC. According to a survey of industry, the average number of years to upgrade is about 5 years for operators which use regional jet airplanes and/or

turboprop airplanes (hereafter referred to as regional airlines) and more than 10 years for major airlines. Even without air carrier operating experience in part 135 or part 91, subpart K operations, at an average number of 750 flight hours a year, an SIC will accumulate the required hours in 1 1/3 years.

The table below summarizes the costs of the three remaining requirements:

TABLE 14—SUMMARY OF COSTS OF THE PROPOSED FOQ RULE—PART 121 OPERATORS 2013–2032

	Regional airlines		Major & cargo airlines	
	Total cost (\$ mil.)	PV cost (\$ mil.)	Total cost (\$ mil.)	PV cost (\$ mil.)
ATP Certification Training Program .....	104.2	46.1	292.3	129.4
ATP (Practical Test) .....		9.5		13.8
Type Rating .....		1.7		1.7
1500-Hour Flight Time Requirement .....	1,575.2	558.7		
<b>Total .....</b>	<b>1,679.4</b>	<b>616.1</b>	<b>292.3</b>	<b>145.0</b>
<b>Annualized Cost (\$ Millions) .....</b>		<b>58.2</b>		<b>13.7</b>

These costs represent 98% of the total costs and 97% of the present value costs of the rule, as the ATP Certification Training Program is the only one of the three requirements that affect part 135 and part 91, subpart K operators as well as part 121 operators. Costs are shown separately for regional airlines and all other airlines because of the strong differential impact on regional airlines.

Costs of the ATP Certification Training Program are conservatively allocated by the percentage of pilots employed by the regional airlines (26.3%, 2010) even though the FAA believes that the impact of the program will fall heavily on the regionals. The cost of the ATP practical test and type rating for new pilots is allocated on the same basis. For current pilots, the cost of the ATP practical test and type rating is calculated separately for the regionals and the major and cargo airlines because the regionals have high percentages of SICs without ATP certificates (85%) and type ratings (90%), whereas the major and cargo airlines have correspondingly low percentages (15%, 30%). The FAA allocates all of the costs of the ATP 1500-hour requirement to the regional airlines as almost all major and cargo airlines have currently (and traditionally) minimum hiring requirements of at least 1500 hours of flight time.<sup>24</sup>

Economic Impact on Small Entities

Table 14 shows the annualized cost of the proposed rule to be \$58.2 million for regional airlines and \$13.7 million for major and cargo airlines. (These costs include the costs of the 1500-hour requirement that we attribute to the statute, not the rule.) In order to assess the economic impact of the proposed rule on small firms, the FAA allocates these annualized costs to small firms on the basis of pilot numbers and calculate small firms' annualized costs as a percentage of the firms' average 5-year, 2005–2009 operating revenues.<sup>25</sup> Of the 31 regional airlines, 10 are classified as small, but the FAA has operating revenue data for only one small regional airline, the economic impact for which is just 0.43%. For the 36 non-regional small firms for which the FAA has operating revenue data, the economic impact ranges from 0.00% to 0.08%.

For part 135 operators, the FAA has operating revenue data for only three firms, but as measured by number of PICs they encompass almost the entire size range of these operators (4 to 45 PICs). The economic impact on these firms is zero to at least two decimal places (0.00%). Similar results could be expected for part 91, subpart K, operators were data available.

Based on these economic impact results, the FAA concludes that the

proposed rule would not have a significant impact on a substantial number of firms. Therefore, the FAA certifies this proposed rule, if promulgated, would not have a significant impact on a substantial number of small entities. The FAA solicits comments regarding this determination. Specifically, the FAA requests comments on whether the proposed rule creates any specific compliance costs unique to small entities. Please provide detailed economic analysis to support any cost claims. The FAA also invites comments regarding other small entity concerns with respect to the proposed rule.

Duplicative, Overlapping or Conflicting Federal Rules

There are no current Federal rules that duplicate, overlap, or conflict with this proposed certification rule. The FAA acknowledges that there are concurrent rulemaking initiatives which involve pilot training that have some overlap. While this rule is a certification training rule, not a part 121 training rule, it does propose some aeronautical knowledge requirements for an ATP certificate that are also found in the proposed air carrier training requirements, which the FAA intends to allow for some relief in the air carrier training. The proposed ATP certification requirements have a broader scope and

<sup>23</sup> Kit Darby, President, [www.KitDarby.com](http://www.KitDarby.com), Aviation Consulting, LLC, Peachtree City, GA.

<sup>24</sup> As noted in the earlier section entitled "Total Costs and Benefits of This Proposed Rule", the costs of the 1500-hour requirement are not costs of the proposed rule, but rather costs attributable to the

Airline Safety Act of 2010 since the Act specifically requires the Administrator to maintain a minimum requirement of 1500 hours for an ATP certificate. The same point of course applies for the costs of the ATP test. Even including these costs in the regulatory flexibility analysis, however, we find

that the impact of the proposed rule on small firms would be minimal.

<sup>25</sup> Operating Revenue—[www.transtat.bts.gov](http://www.transtat.bts.gov), Air Carrier Financial Reports (Form 41 Financial Data), Schedules P1.1 & P1.2. We average for as many of the five years of data as is available.

applicability beyond those pilots who are flying only in air carrier operations. The concepts to be learned at the certification level will be a pilot's first exposure and will enable a knowledge base to be established. For those pilots that then choose to enter air carrier operations, the air carrier training program can focus on building on those concepts with information for their specific operation and aircraft type.

The proposed training rules referenced in the previous paragraph include a proposal to address pilot mentoring requirements required by Public Law 111–216 and an SNPRM for Qualification, Service, and Use of Crewmembers and Aircraft Dispatchers that proposes to amend the training requirements for crewmember and aircraft dispatcher training programs in domestic, flag, and supplemental operations. The SNPRM incorporates specific training areas identified in Public Law 111–216 as well. The FAA acknowledges that the requirements for these proposals must be coordinated prior to the issuance of any final rules.

#### Alternatives to the Proposed Rule

The FAA considered a number of alternatives to come up with the best proposal that will improve safety, meet pilot certification and qualification requirements imposed by Congress in Sections 216 and 217 of the Airline Safety and Federal Aviation Extension Act of 2010 (Pub. L. 111–216), and be reasonable in cost. A discussion of the alternatives for each of the provisions follows.

Section 216 requires all pilots in part 121 operations to hold an ATP certificate. This requirement will go into effect in August 2013 regardless of FAA action and the FAA cannot change public law. Therefore, there are no alternatives to this requirement.

Section 216 also requires that all flightcrew members in part 121 operations to “have appropriate multi-engine aircraft flight experience, as determined by the Administrator.” Given the existing regulatory structure and the statutory requirement to revise the ATP certification requirements in Section 217, the FAA determined it was most appropriate to require a specific amount of time in class of airplane (single engine or multiengine) as a prerequisite to applying for an ATP certificate. The alternative would have been to impose an operational experience requirement for part 121. The FAA believes that 50 hours as a minimum is appropriate and not unreasonable when compared to the total time required of 1,500 hours. Any cost associated with this proposal

would be minimal and would be borne by individual pilots rather than small entities.

In addition to the defined multiengine hour requirement in the proposal, the FAA proposes all SICs hold an aircraft type rating in the aircraft to be flown in part 121 operations. The FAA determined the most effective multiengine experience for a part 121 SIC would be the training required to achieve an aircraft type rating in the aircraft to be flown in revenue service. By requiring an aircraft type rating, the SIC would then be trained and checked in a multicrew air carrier environment to the same standard as the PIC. As noted above, the FAA anticipates that this provision would impose a minimal cost on all regulated entities.

In Section 217 of the Act, Congress directed the FAA “to modify requirements for the issuance of an airline transport pilot certificate” to ensure pilots have specific skills including the ability to “function effectively in adverse weather conditions” and “function effectively in an air carrier operational environment.” Currently, there are no training requirements for the ATP certificate. The public law allowed the FAA to consider academic training, flight training, or operational experience as a means of ensuring pilots have the identified skills. Given the existing regulatory structure and oversight capabilities, the FAA determined that validating operational experience would be overly burdensome on FAA inspectors and would require pilots to seek difficult operational conditions in an aircraft thereby increasing risk. Therefore, the FAA chose to do this by establishing training requirements for the ATP certificate, similar to those currently required for other airman certificates.

The FAA is proposing academic and flight training requirements and evaluation of the pilot on those requirements through an enhanced knowledge test and practical test. The FAA is proposing a structured ATP certification training program that includes training in FSTDs under parts 121, 135, 141, or 142 rather than permitting instruction to be accomplished by certified flight instructors (CFIs) under part 61. Typically CFIs do not have air carrier experience and are not required under current regulations to have the knowledge that teaching the required concepts demands. As such, the FAA would have to modify the requirements for CFIs in addition to modifying the ATP certificate requirements to enable CFIs to teach the proposed course.

The decision to propose the structured ATP Certification Training Program rather than permitting instruction to take place in actual aircraft under part 61 was also based on the fact that the areas identified in the public law are complex and involve difficult operational conditions including icing and high altitude operations. These complex environments are most safely trained through flight simulation. The FAA does not want pilots to seek potentially hazardous conditions in multiengine, multicrew aircraft just to obtain the experience requirements. In addition to the safety considerations, the FAA believes that the cost that would be incurred by pilots who received training from CFIs in part 61 would be prohibitively expensive due to the level of airplane that would be required for the training.

The program hours for the ATP Certification Training Program were based on an assessment of the quantity and complexity of the subject matter. The FAA considered as an alternative revising the areas of operation listed in part 61 for the ATP certificate and adding or modifying the questions on the ATP knowledge test to include the subject areas in the statute. While this is a less costly alternative, it does not capture the intent of the statute. The pilot would not be required to receive training in these critical areas and could likely get most, if not all, questions on those topic areas wrong and still pass the written test.

In addition, Section 217 of the Act permits the Administrator to allow “specific academic training courses” to be credited towards the 1,500-hour requirement for an ATP certificate if the FAA determines that the academic courses enhance safety more than full compliance with the total hour requirement for an ATP certificate. While the FAA had the option to not propose an allowance for academic credit towards the time required for an ATP certificate, the FAA believes a combination of training and flight experience is what makes a candidate qualified to fly in part 121 operations. The FAA chose to allow credit for academic coursework accomplished in the military and by students pursuing aviation-related majors at four-year colleges or universities. There are numerous alternate scenarios that could be considered here, including different levels of credit for academic coursework and expanding the credit beyond the military and four-year colleges and universities.

An applicant for an ATP certificate does not have to acquire any hours in

air carrier operations. Recognizing the potential loss of natural mentoring opportunities, the FAA proposed a requirement for a pilot to have at least 1,000 hours of air carrier experience prior to serving as PIC in part 121 operations. This provision is aimed at preventing two inexperienced pilots in air carrier operations from flying together in part 121 operations (e.g. PIC and SIC both have 1,500 hours and an ATP, but little experience in air carrier operations). The FAA could have chosen not to include this provision. As noted above, the FAA anticipates that this provision would impose a minimal cost on all regulated entities.

#### *Initial Trade Impact Assessment*

The Trade Agreements Act of 1979 (Pub. L. 96–39), as amended by the Uruguay Round Agreements Act (Pub. L. 103–465), prohibits Federal agencies from establishing standards or engaging in related activities that create unnecessary obstacles to the foreign commerce of the United States.

Pursuant to these Acts, the establishment of standards is not considered an unnecessary obstacle to the foreign commerce of the United States, so long as the standard has a legitimate domestic objective, such as the protection of safety, and does not operate in a manner that excludes imports that meet this objective. The statute also requires consideration of international standards and, where appropriate, that they be the basis for U.S. standards. The FAA has assessed the potential effect of this proposed rule and determined that it would have only a domestic impact and therefore would not create unnecessary obstacles to the foreign commerce of the United States.

#### *Unfunded Mandates Assessment*

Title II of the Unfunded Mandates Reform Act of 1995 (Pub. L. 104–4) requires each Federal agency to prepare a written statement assessing the effects of any Federal mandate in a proposed or final agency rule that may result in an expenditure of \$100 million or more (adjusted annually for inflation with the base year 1995) in any one year by State, local, and tribal governments, in the aggregate, or by the private sector; such a mandate is deemed to be a “significant regulatory action.” The FAA currently uses an inflation-adjusted value of \$140.8 million.

This proposed rule does not contain such a mandate. The requirements of Title II do not apply.

#### *Executive Order 13132, Federalism*

The FAA has analyzed this proposed rule under the principles and criteria of

Executive Order 13132, Federalism. The FAA has determined that this action would not have a substantial direct effect on the States, on the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of government, and, therefore, would not have federalism implications.

#### *Environmental Analysis*

FAA Order 1050.1E identifies FAA actions that are categorically excluded from preparation of an environmental assessment or environmental impact statement under the National Environmental Policy Act in the absence of extraordinary circumstances. The FAA has determined this proposed rulemaking action qualifies for the categorical exclusion identified in paragraph 308(c) and involves no extraordinary circumstances.

#### *Regulations that Significantly Affect Energy Supply, Distribution, or Use*

The FAA has analyzed this NPRM under Executive Order 13211, Actions Concerning Regulations that Significantly Affect Energy Supply, Distribution, or Use (May 18, 2001). The FAA has determined that it is not a “significant regulatory action” under the executive order because while it is a “significant regulatory action” under Executive Order 12866, and DOT’s Regulatory Policies and Procedures, it is not likely to have a significant adverse effect on the supply, distribution, or use of energy.

#### *Additional Information*

##### Comments Invited

The FAA invites interested persons to participate in this rulemaking by submitting written comments, data, or views. The FAA also invites comments relating to the economic, environmental, energy, or federalism impacts that might result from adopting the proposals in this document. The most helpful comments reference a specific portion of the proposal, explain the reason for any recommended change, and include supporting data. To ensure the docket does not contain duplicate comments, please send only one copy of written comments, or if you are filing comments electronically, please submit your comments only one time.

The FAA will file in the docket all comments we receive, as well as a report summarizing each substantive public contact with FAA personnel concerning this proposed rulemaking. Before acting on this proposal, we will consider all comments we receive on or

before the closing date for comments. The FAA will consider comments filed after the comment period has closed if it is possible to do so without incurring expense or delay. The FAA may change this proposal in light of the comments we receive.

#### Availability of Rulemaking Documents

You can get an electronic copy of rulemaking documents using the Internet by—

1. Searching the Federal Rulemaking Portal (<http://www.regulations.gov>);
2. Visiting the FAA’s Regulations and Policies Web page at [http://www.faa.gov/regulations\\_policies](http://www.faa.gov/regulations_policies); or
3. Accessing the Government Printing Office’s Web page at <http://www.gpoaccess.gov/fr/index.html>.

You can also get a copy by sending a request to the Federal Aviation Administration, Office of Rulemaking, ARM–1, 800 Independence Avenue SW., Washington, DC 20591, or by calling (202) 267–9680. Make sure to identify the docket number or notice number of this rulemaking.

You may access all documents the FAA considered in developing this proposed rule, including economic analyses and technical reports, from the Internet through the Federal Rulemaking Portal referenced in the **ADDRESSES** section.

#### List of Subjects

##### *14 CFR Part 61*

Aircraft, Airmen, Aviation safety.

##### *14 CFR Part 121*

Air carriers, Aircraft, Airmen, Aviation safety.

##### *14 CFR Part 135*

Air taxis, Aircraft, Airmen, Aviation safety.

##### *14 CFR Part 141*

Airmen, Educational facilities.

##### *14 CFR Part 142*

Airmen, Educational facilities.

#### The Proposed Amendment

In consideration of the foregoing, the Federal Aviation Administration proposes to amend Chapter I of Title 14, Code of Federal Regulations, as follows:

#### **PART 61—CERTIFICATION: PILOTS, FLIGHT INSTRUCTORS, AND GROUND INSTRUCTORS**

1. The authority citation for part 61 continues to read as follows:

**Authority:** 49 U.S.C. 106(g), 40113, 44701–44703, 44707, 44709–44711, 45102–45103, 45301–45302.

2. Amend § 61.1 as follows:

A. Remove paragraph designations (b)(1) through (b)(19);

B. Add new definitions of *Accredited* and *Nationally recognized accrediting agency* to paragraph (b) in alphabetical order to read as set forth below;

C. Revise paragraph (iii) of the definition of *Authorized instructor* in paragraph (b) to read as set forth below;

The additions and revisions read as follows:

**§ 61.1 Applicability and definitions.**

\* \* \* \* \*

(b) \* \* \*

*Accredited* means the same as defined by the Department of Education in 34 CFR 600.2.

\* \* \* \* \*

*Authorized instructor* means—

\* \* \* \* \*

(iii) A person authorized by the Administrator to provide ground training or flight training under part 61, 121, 135, or 142 of this chapter when conducting ground training or flight training in accordance with that authority.

\* \* \* \* \*

*Nationally recognized accrediting agency* means the same as defined by the Department of Education in 34 CFR 600.2.

\* \* \* \* \*

3. Amend § 61.35 by removing the word “and” at the end of paragraph (a)(1), redesignating paragraph (a)(2) as paragraph (a)(3), and adding a new paragraph (a)(2) to read as follows:

**§ 61.35 Knowledge test: Prerequisites and passing grades.**

(a) \* \* \*

(2) After July 31, 2013, for the knowledge test for an airline transport pilot certificate with an airplane category multiengine class rating or type rating, a certificate of completion for the ATP certification training program specified in § 61.154; and

\* \* \* \* \*

4. Amend § 61.39 by revising paragraph (b) to read as follows:

**§ 61.39 Prerequisites for practical tests.**

\* \* \* \* \*

(b) To be eligible for a practical test for an airline transport pilot certificate with an airplane category multiengine class rating or type rating issued under this part, an applicant must:

(1) After July 31, 2013, complete the ATP certification training program required by § 61.154;

(2) Pass the required knowledge test;

(i) For those applicants who pass the knowledge test prior to August 1, 2013,

those knowledge test results will expire on July 31, 2015;

(ii) For those applicants who pass the knowledge test after completing the ATP certification training program, the knowledge test results will expire 60 calendar months after the knowledge test was successfully completed.

(3) Present the knowledge test report and, if applicable, the certificate of completion for the ATP certification training program in § 61.154, at the time of application for the practical test;

(4) Have satisfactorily accomplished the required training and obtained the aeronautical experience prescribed by this part for the certificate or rating sought;

(i) If applying for the practical test under the aeronautical experience requirements of § 61.160(a), the applicant must present the documents required by that section to substantiate eligibility;

(ii) If applying for the practical test under the aeronautical experience requirements of § 61.160(b), the applicant must present official transcripts from an accredited 4-year post secondary institution substantiating eligibility;

(5) Hold at least a third-class medical certificate, if a medical certificate is required;

(6) Meet the prescribed age requirement of this part for the issuance of the certificate or rating sought;

(7) If applying for a type rating to be concurrently completed with an airline transport pilot certificate, have the endorsement required by § 61.157(b) in the applicant's logbook or training record; and

(8) Have a completed and signed application form.

\* \* \* \* \*

5. Amend § 61.55 by revising paragraph (a) introductory text and by removing the phrase “part 121,” from paragraph (e) introductory text to read as follows:

**§ 61.55 Second-in-command qualifications.**

(a) Except for pilots in part 121 operations after July 31, 2013, a person may serve as a second-in-command of an aircraft type certificated for more than one required pilot flight crewmember or in operations requiring a second-in-command pilot flight crewmember only if that person holds:

\* \* \* \* \*

6. Amend § 61.57 by revising paragraph (e)(2) to read as follows:

**§ 61.57 Recent flight experience: Pilot in command.**

\* \* \* \* \*

(e) \* \* \*

(2) This section does not apply to a pilot in command who is employed by an air carrier certificated under part 121 or 135 and is engaged in a flight operation under part 91, 121, or 135 for that air carrier if the pilot is in compliance with §§ 121.435 or 121.436, as applicable, and § 121.439, or §§ 135.243 and 135.247 of this chapter, as appropriate.

\* \* \* \* \*

7. Amend § 61.71 by redesignating paragraphs (b)(1) and (b)(2) as paragraphs (b)(2) and (b)(3), respectively, and by adding a new paragraph (b)(1) to read as follows:

**§ 61.71 Graduates of an approved training program other than under this part: Special rules.**

\* \* \* \* \*

(b) \* \* \*

(1) After July 31, 2013, satisfactorily completed the ATP certification training program specified in § 61.154.

\* \* \* \* \*

8. Amend § 61.153 as follows:

A. Revise paragraph (a);

B. Redesignate paragraphs (e) through (h) as paragraphs (f) through (i); and

C. Add a new paragraph (e).

The addition and revisions read as follows:

**§ 61.153 Eligibility requirements: General.**

\* \* \* \* \*

(a) Meet the following age requirements:

(1) For an ATP certificate obtained under the aeronautical experience requirements of § 61.159, be at least 23 years of age; or

(2) For an ATP certificate obtained under the aeronautical experience requirements of § 61.160, be at least 21 years of age.

\* \* \* \* \*

(e) After July 31, 2013, for an airline transport pilot certificate with an airplane category multiengine class rating or type rating, receive a certificate of completion from an authorized training provider certifying completion of the ATP certification training program specified in § 61.154 before applying for the knowledge test required by paragraph (g) of this section;

\* \* \* \* \*

9. Add § 61.154 to read as follows:

**§ 61.154 ATP Certification training program: Airplane category—multiengine class rating or aircraft type rating.**

After July 31, 2013, a person who applies for the knowledge test for an airline transport pilot certificate with an airplane category multiengine class rating or an aircraft type rating must

present a certificate of completion from an authorized training provider certifying the applicant has completed the following training in a course approved by the Administrator under part 121, 135, 141, or 142 of this chapter.

(a) *Academic training.* The applicant for the knowledge test must receive at least 24 hours of classroom instruction that includes the following:

(1) At least 5 hours of instruction on high altitude operations, including aerodynamics and physiology;

(2) At least 3 hours of instruction on meteorology, including adverse weather phenomena and weather radar; and

(3) At least 12 hours of instruction on air carrier operations, including turbine engines, transport category aircraft performance, automation, communications, checklist philosophy, and operational control.

(b) *FSTD Training.* The applicant for the knowledge test must receive at least 16 hours of training in a flight simulation training device qualified under part 60 of this chapter that represents a multiengine turbine airplane. The training must include the following:

(1) At least 8 hours of training in a Level C or higher full flight simulator on

(i) Low energy states/stalls;  
 (ii) Upset recovery techniques; and  
 (iii) Adverse weather conditions, including icing, thunderstorms, and crosswinds with gusts; and

(2) At least 8 hours of training in a Level 4 or higher flight training device or a full flight simulator on

(i) Aircraft performance;  
 (ii) Navigation;  
 (iii) Automation; and  
 (iv) Crew resource management.

10. Amend § 61.155 as follows:

A. Remove the word “and” after the semicolon in paragraph (c)(12);

B. Remove the period from the end of paragraph (c)(13) and add the phrase “; and” in its place; and

C. Add paragraphs (c)(14) and (d).

The additions read as follows:

**§ 61.155 Aeronautical knowledge.**

\* \* \* \* \*

(c) \* \* \*

(14) After July 31, 2013, for airplane category multiengine class rating or aircraft type rating, the approved training course in § 61.154.

(d) An applicant who successfully completes the knowledge test for an airline transport pilot certificate with an airplane category multiengine class rating or aircraft type rating prior to August 1, 2013, must successfully complete the practical test for that category and class by July 31, 2015. An

applicant who passes the knowledge test prior to August 1, 2013, but fails to successfully complete the practical test by July 31, 2015, must complete the ATP certification training program specified in § 61.154 and retake the knowledge test prior to applying for the practical test.

11. Amend § 61.157 as follows:

A. Remove the word “and” from after the semicolon in paragraph (a)(2)(i);

B. Remove the period from the end of paragraph (a)(2)(ii) and add a semicolon in its place; and

C. Add paragraph (a)(2)(iii).

The addition reads as follows:

**§ 61.157 Flight proficiency.**

(a) \* \* \*

(2) \* \* \*

(iii) After July 31, 2013, if applying for an airplane category multiengine class rating or aircraft type rating, the training requirements of § 61.154.

\* \* \* \* \*

12. Amend § 61.159 as follows:

A. Redesignate paragraphs (a)(3) through (a)(5) as paragraphs (a)(4) through (a)(6);

B. Add a new paragraph (a)(3);

C. Remove the phrase “paragraph (a)(3)(ii)” from newly redesignated paragraph (a)(4)(i) and add the phrase “paragraph (a)(4)(ii)” in its place; and

D. Remove the phrase “paragraph (a)(3)” from newly redesignated paragraph (a)(4)(ii) and add the phrase “paragraph (a)(4)” in its place.

The addition reads as follows:

**§ 61.159 Aeronautical experience: Airplane category rating.**

(a) \* \* \*

(3) 50 hours of flight time in the class of aircraft for which the rating is sought. An applicant may receive credit for not more than 10 hours in a full flight simulator that represents the class of airplane.

\* \* \* \* \*

13. Add § 61.160 to read as follows:

**§ 61.160 Aeronautical experience: Airplane category rating—restricted privileges.**

A person may apply for an airline transport pilot certificate with an airplane category multiengine class rating if they meet the following aeronautical experience requirements.

(a) A person who meets the eligibility requirements of § 61.153 and presents the evidentiary documents described in § 61.73(h)(1), (2), and (3), may apply for an airline transport pilot certificate with a minimum of 750 hours of total time as a pilot that includes at least:

(1) 250 hours of cross-country flight time.

(2) 100 hours of night flight time.

(3) 50 hours of flight time in a multiengine airplane. An applicant may receive credit for not more than 10 hours in a simulator that represents a multiengine airplane.

(4) 75 hours of instrument flight time, in actual or simulated instrument conditions, subject to the following:

(i) Except as provided in paragraph (a)(4)(ii) of this section, an applicant may not receive credit for more than a total of 25 hours of simulated instrument time in a flight simulator or flight training device.

(ii) A maximum of 50 hours of training in a flight simulator or flight training device may be credited toward the instrument flight time requirements of paragraph (a)(4) of this section if the training was accomplished in a course conducted by a training center certificated under part 142 of this chapter.

(iii) Training in a flight simulator or flight training device must be accomplished in a flight simulator or flight training device representing an airplane.

(5) 250 hours of flight time in an airplane as a pilot in command, or as second in command performing the duties of pilot in command while under the supervision of a pilot in command, or any combination thereof, which includes at least—

(i) 100 hours of cross-country flight time; and

(ii) 25 hours of night flight time.

(6) Not more than 100 hours of the total aeronautical experience requirements of paragraph (a) of this section may be obtained in a flight simulator or flight training device that represents an airplane, provided the aeronautical experience was obtained in an approved course conducted by a training center certificated under part 142 of this chapter.

(b) A person who holds a Bachelor’s degree with an aviation major from an accredited 4-year postsecondary institution, as defined in § 61.1, and holds a commercial pilot certificate with an airplane category and instrument rating obtained from an affiliated part 141 pilot school may apply for an airline transport pilot certificate with a minimum of 1,000 hours of total time as a pilot that includes at least:

(1) 325 hours of cross-country flight time.

(2) 100 hours of night flight time.

(3) 50 hours of flight time in a multiengine airplane. An applicant may receive credit for not more than 10 hours in a simulator that represents a multiengine airplane.

(4) 75 hours of instrument flight time, in actual or simulated instrument conditions, subject to the following:

(i) Except as provided in paragraph (a)(4)(ii) of this section, an applicant may not receive credit for more than a total of 25 hours of simulated instrument time in a flight simulator or flight training device.

(ii) A maximum of 50 hours of training in a flight simulator or flight training device may be credited toward the instrument flight time requirements of paragraph (a)(4) of this section if the training was accomplished in a course conducted by a training center certificated under part 142 of this chapter.

(iii) Training in a flight simulator or flight training device must be accomplished in a flight simulator or flight training device, representing an airplane.

(5) 250 hours of flight time in an airplane as a pilot in command, or as second in command performing the duties of pilot in command while under the supervision of a pilot in command, or any combination thereof, which includes at least—

(i) 100 hours of cross-country flight time; and

(ii) 25 hours of night flight time.

(6) Not more than 100 hours of the total aeronautical experience requirements of paragraph (a) of this section may be obtained in a flight simulator or flight training device that represents an airplane, provided the aeronautical experience was obtained in an approved course conducted by a training center certificated under part 142 of this chapter.

(c) A person who has performed at least 20 night takeoffs and landings to a full stop may substitute each additional night takeoff and landing to a full stop for 1 hour of night flight time to satisfy the requirements of paragraph (a)(2) of this section; however, not more than 25 hours of night flight time may be credited in this manner.

(d) An airline transport pilot certificate obtained under this section is subject to the pilot in command limitations set forth in § 61.168.

14. Amend § 61.165 as follows:

A. Revise paragraph (c)(2);

B. Redesignate paragraphs (c)(3) through (c)(5) as paragraphs (c)(4) through (c)(6);

C. Add new paragraph (c)(3);

D. Remove the phrase “§ 61.159 of this part” in newly redesignated paragraph (c)(5) and add the phrase “§ 61.159 or § 61.160” in its place;

E. Revise paragraph (e) introductory text and paragraph (e)(1);

F. Redesignate paragraph (f) as paragraph (g);

G. Add new paragraph (f);

H. Remove the phrase “paragraphs (a) through (e)” from newly redesignated paragraph (g) introductory text and add the phrase “paragraphs (a) through (f)” in its place; and

I. Remove the phrase “paragraph (f)(1)” from newly redesignated paragraph (g)(3) and add the phrase “paragraph (g)(1)” in its place.

The revisions and additions read as follows:

**§ 61.165 Additional aircraft class category and ratings.**

\* \* \* \* \*

(c) \* \* \*

(2) After July 31, 2013, successfully complete the ATP certification training program specified in § 61.154;

(3) Pass a knowledge test for an airplane category multiengine class rating or type rating on the aeronautical knowledge areas of § 61.155(c);

\* \* \* \* \*

(e) *Additional class rating within the same aircraft category.* Except as provided in paragraph (f) of this section, a person applying for an airline transport pilot certificate with an additional class rating who holds an airline transport certificate in the same aircraft category must—

(1) Meet the eligibility requirements of § 61.153, except paragraph (g) of that section;

\* \* \* \* \*

(f) Adding a multiengine class rating or type rating to an airline transport pilot certificate with a single engine class rating. A person applying to add a multiengine class rating or airplane type rating to an airline transport pilot certificate with an airplane category single engine class rating must—

(1) Meet the eligibility requirements of § 61.153;

(2) Pass a required knowledge test on the aeronautical knowledge areas of § 61.155(c), as applicable to multiengine airplanes;

(3) Comply with the requirements in § 61.157(b), if applicable;

(4) Meet the applicable aeronautical experience requirements of § 61.159; and

(5) Pass a practical test on the areas of operation of § 61.157(e)(2).

\* \* \* \* \*

15. Amend § 61.167 by revising paragraph (b) introductory text to read as follows:

**§ 61.167 Privileges.**

\* \* \* \* \*

(b) A person who holds an airline transport pilot certificate and has met the aeronautical experience

requirements of § 61.159 of this part may instruct—

\* \* \* \* \*

16. Add § 61.168 to read as follows:

**§ 61.168 Limitations.**

(a) A person who holds an airline transport pilot certificate and has not satisfied the age requirement of § 61.153(a)(1) and the aeronautical experience requirements of § 61.159 may not act as pilot in command in operations under § 91.1053(a)(2)(i) or § 135.243(a)(1) of this chapter, or in any operation conducted under part 121 of this chapter.

(b) An airline transport pilot certificate issued to a pilot who has not satisfied the requirements of § 61.159 must contain the following limitation, “Restricted in accordance with 14 CFR 61.168(a)” and “Holder does not meet the pilot in command aeronautical experience requirements of ICAO.”

(c) The pilot is entitled to an airline transport pilot certificate without the limitation specified in paragraph (b) of this section when the applicant presents satisfactory evidence of having met the aeronautical experience requirements of § 61.159 and the age requirement of § 61.153(a)(1).

**PART 121—OPERATING REQUIREMENTS: DOMESTIC, FLAG, AND SUPPLEMENTAL OPERATIONS**

17. The authority citation for part 121 continues to read as follows:

**Authority:** 49 U.S.C. 106(g), 40113, 40119, 41706, 44101, 44701–44702, 44705, 44709–44711, 44713, 44716–44717, 44722, 46105.2.

18. Amend § 121.403 by adding paragraph (c) to read as follows:

**§ 121.403 Training program: Curriculum.**

\* \* \* \* \*

(c) Each certificate holder required to have a training program under this part may elect to provide the training required by § 61.154 of this chapter. If a certificate holder elects to provide the training in § 61.154, that training must take place prior to initial training.

19. Amend § 121.409 by revising paragraph (b) introductory text to read as follows:

**§ 121.409 Training courses using airplane simulators and other training devices.**

\* \* \* \* \*

(b) Except for a training course approved to satisfy the requirements of § 61.154 of this chapter, a course of training in an airplane simulator may be included for use as provided in § 121.441 if that course—

\* \* \* \* \*

20. Amend § 121.412 by revising paragraphs (c) introductory text and (f)

introductory text and by adding paragraph (h) to read as follows:

**§ 121.412 Qualifications: Flight instructors (airplane) and flight instructors (simulator).**

\* \* \* \* \*

(c) Except as provided in paragraph (h) of this section, no certificate holder may use a person, nor may any person serve as a flight instructor (simulator) in a training program established under this subpart, unless, with respect to the airplane type involved, that person meets the provisions of paragraph (b) of this section, or—

\* \* \* \* \*

(f) Except for a training course approved to satisfy the requirements of § 61.154 of this chapter, a flight instructor (simulator) must accomplish the following—

\* \* \* \* \*

(h) A person providing instruction in a flight simulation training device in a course approved to satisfy the requirements of § 61.154 of this chapter must hold an airline transport pilot certificate with an airplane category multiengine class rating, meet the aeronautical experience requirements of § 61.159 of this chapter, and have at least 2 years of experience as a pilot in operations under § 91.1053(a)(2)(i) or § 135.243(a)(1) of this chapter, or in any operation conducted under part 121 of this chapter. Additionally, instructors must have an appropriate aircraft type rating for the aircraft that the FSTD represents or have received instruction from the certificate holder on any maneuvers or concepts they will demonstrate in the FSTD.

21. Amend § 121.414 by revising paragraph (a) introductory text to read as follows:

**§ 121.414 Initial and transition training and checking requirements: Flight instructors (airplane), Flight instructors (simulator).**

(a) Except for a training course approved to satisfy the requirements of § 61.154 of this chapter, no certificate holder may use a person nor may any person serve as a flight instructor unless—

\* \* \* \* \*

22. Add § 121.435 to read as follows:

**§ 121.435 Pilot qualification: Certificate and experience requirements.**

(a) No pilot may act as pilot in command of an aircraft (or as second in command of an aircraft in a flag or supplemental operation that requires three or more pilots) unless he holds an airline transport pilot certificate and an appropriate type rating for that aircraft.

(b) No certificate holder may use nor may any pilot act as a pilot in a capacity

other than those specified in paragraph (a) of this section unless the pilot holds at least a commercial pilot certificate with appropriate category and class ratings for the aircraft concerned, and an instrument rating. Notwithstanding the requirements of § 61.63 (b) and (c) of this chapter, a pilot who is currently employed by a certificate holder and meets applicable training requirements of subpart N of this part, and the proficiency check requirements of § 121.441, may be issued the appropriate category and class ratings by presenting proof of compliance with those requirements to a Flight Standards District Office.

(c) The requirements of this section will expire on July 31, 2013. After that date, the requirements of § 121.436 apply.

23. Add § 121.436 to read as follows:

**§ 121.436 Pilot qualification: Certificates and experience requirements.**

(a) No pilot may act as pilot in command of an aircraft unless he holds an airline transport pilot certificate, an appropriate aircraft type rating for the aircraft being flown, and has 1,000 hours as second in command in part 121 operations, pilot in command in operations under § 91.1053(a)(2)(i) or § 135.243(a)(1) of this chapter, or any combination thereof.

(b) No certificate holder may use nor may any pilot act as second in command unless the pilot holds an airline transport pilot certificate and an appropriate aircraft type rating for the aircraft being flown. A pilot type rating obtained under § 61.55 does not satisfy the requirements of this section.

(c) Compliance with the requirements of this section is required by August 1, 2013.

**§ 121.437 [Removed]**

24. Remove § 121.437.

**Appendix H to Part 121 [Amended]**

25. Amend Appendix H to Part 121 by removing the reference “§ 61.153(g)” from the last paragraph of the appendix and adding the reference “§ 61.153(h)” in its place.

**PART 135—OPERATING REQUIREMENTS: COMMUTER AND ON DEMAND OPERATIONS AND RULES GOVERNING PERSON ONBOARD SUCH AIRCRAFT**

26. The authority citation for part 135 continues to read as follows:

**Authority:** 49 U.S.C. 106(g), 41706, 40113, 44701–44702, 44705, 44709, 44711–44713, 44715–44717, 44722, 45101–45105.

27. Amend § 135.338 by revising paragraphs (b) introductory text, (c)

introductory text, and (f) introductory text, and by adding paragraph (h) to read as follows:

**§ 135.338 Qualifications: Flight instructors (aircraft) and flight instructors (simulator).**

\* \* \* \* \*

(b) Except as provided in paragraph (h) of this section, no certificate holder may use a person, nor may any person serve as a flight instructor (aircraft) in a training program established under this subpart unless, with respect to the type, class, or category aircraft involved, that person—

\* \* \* \* \*

(c) Except as provided in paragraph (h) of this section, no certificate holder may use a person, nor may any person serve as a flight instructor (simulator) in a training program established under this subpart, unless, with respect to the type, class, or category aircraft involved, that person meets the provisions of paragraph (b) of this section, or—

\* \* \* \* \*

(f) Except for a training course approved to satisfy the requirements of § 61.154 of this chapter, a flight instructor (simulator) must accomplish the following—

\* \* \* \* \*

(h) A person providing instruction in a flight simulation training device in a course approved to satisfy the requirements of § 61.154 of this chapter must hold an airline transport pilot certificate with an airplane category multiengine class rating, meet the aeronautical experience requirements of § 61.159 of this chapter, and have at least 2 years of experience as a pilot in operations under § 91.1053(a)(2)(i) or § 135.243(a)(1) of this chapter, or in any operation conducted under part 121 of this chapter. Additionally, instructors must have an appropriate aircraft type rating for the aircraft that the FSTD represents or have received instruction from the certificate holder on any maneuvers or concepts they will demonstrate in the FSTD.

28. Amend § 135.340 by revising paragraph (a) introductory text to read as follows:

**§ 135.340 Initial and transition training and checking: flight instructors (aircraft), flight instructors (simulator).**

(a) Except for a training course approved to satisfy the requirements of § 61.154 of this chapter, no certificate holder may use a person nor may any person serve as a flight instructor unless—

\* \* \* \* \*

29. Amend § 135.341 by adding a sentence to the end of paragraph (a), redesignating paragraphs (c) and (d) as

paragraphs (d) and (e), and adding new paragraph (c) to read as follows:

**§ 135.341 Pilot and flight attendant crewmember training programs.**

(a) \* \* \* This deviation authority does not extend to the training provided under paragraph (c) of this section.

\* \* \* \* \*

(c) Each certificate holder required to have a training program by paragraph (a) of this section may elect to provide the training required by § 61.154 of this chapter. If a certificate holder elects to provide the training in § 61.154, that training must take place prior to the training curriculums set forth in paragraph (b) of this section.

\* \* \* \* \*

**PART 141—PILOT SCHOOLS**

30. The authority citation for part 141 continues to read as follows:

**Authority:** 49 U.S.C. 106(g), 40113, 44701–44703, 44707, 44709, 44711, 45102–45103, 45301–45302.

31. Amend § 141.33 by adding paragraph (a)(4) to read as follows:

**§ 141.33 Personnel.**

(a) \* \* \*

(4) For a training course approved by the Administrator to satisfy the requirements of § 61.154 of this chapter—

(i) Each instructor used for ground training must hold an airline transport pilot certificate with an airplane category multiengine class rating.

(ii) Each instructor used for training in a flight simulation training device must hold an airline transport pilot certificate with an airplane category multiengine class rating, meet the aeronautical experience requirements of § 61.159 of this chapter, and have at least 2 years of experience as a pilot in operations under § 91.1053(a)(2)(i) or § 135.243(a)(1) of this chapter, or in any operation conducted under part 121 of this chapter. Additionally, instructors must have an appropriate aircraft type rating for the aircraft that the FSTD represents or have received instruction from the certificate holder on any maneuvers or concepts they will demonstrate in the FSTD.

\* \* \* \* \*

32. Amend Appendix E to part 141 by revising section 1 to read as follows:

**Appendix E to Part 141—Airline Transport Pilot Certification Course**

1. *Applicability.* (a) Except as provided in paragraph (b) of this section, this appendix prescribes the minimum curriculum for an airline transport pilot certification course under this part, for the following ratings:

- (1) Airplane single-engine.
- (2) Airplane multiengine.
- (3) Rotorcraft helicopter.
- (4) Powered-lift.

(b) In addition to the requirements set forth in this appendix, an applicant for an airline transport pilot certificate with airplane category multiengine class rating must also satisfy the training requirements of § 61.154 of this chapter.

\* \* \* \* \*

**PART 142—TRAINING CENTERS**

33. The authority citation for part 142 continues to read as follows:

**Authority:** 49 U.S.C. 106(g), 40113, 40119, 44101, 44701–44703, 44705, 44707, 44709–44711, 45102–45103, 45301–45302.

34. Amend § 142.1 by revising paragraphs (a) and (b)(2) to read as follows:

**§ 142.1 Applicability.**

(a) This subpart prescribes the requirements governing the certification and operation of training centers. Except as provided in paragraph (b) of this section, this part provides an alternative means to accomplish training required by parts 61, 63, 65, 91, 121, 125, 135, or 137 of this chapter.

(b) \* \* \*

(2) Approved under subpart Y of part 121 of this chapter, Advanced Qualification Programs, for the authorization holder's own employees;

\* \* \* \* \*

35. Amend § 142.3 by revising paragraph (3) of the definition of *Course* and the definition of *Flight training equipment* to read as follows:

**§ 142.3 Definitions.**

\* \* \* \* \*

*Course* means—

\* \* \* \* \*

(3) A curriculum, or curriculum segment, as defined in subpart Y of part 121 of this chapter.

\* \* \* \* \*

*Flight training equipment* means full flight simulators, as defined in § 1.1 of this chapter, flight training devices, as defined in § 1.1 of this chapter, and aircraft.

\* \* \* \* \*

36. Amend § 142.47 as follows:

A. Redesignate paragraphs (a)(3) through (a)(5) as paragraphs (a)(4) through (a)(6);

B. Add new paragraph (a)(3);

C. Add the phrase “of part 61” after the words “subpart H” in newly redesignated paragraph (a)(4);

D. Remove the phrase “paragraph (a)(5)(ii)” from newly redesignated paragraph (a)(6)(i) and add in its place the phrase “paragraphs (a)(6)(ii) and (a)(6)(iii)”;

E. Remove the phrase “flight simulator or flight training device” from newly redesignated paragraph (a)(6)(ii) and add in its place the phrase “flight simulation training device (FSTD)”;

F. Revise newly redesignated paragraph (a)(6)(iii); and

G. Add paragraph (a)(6)(iv).

The additions and revision read as follows:

**§ 142.47 Training center instructor eligibility requirements.**

(a) \* \* \*

(3) For a training course approved by the Administrator to satisfy the requirements of § 61.154 of this chapter, each instructor used for ground training must hold an airline transport pilot certificate with multiengine class rating.

\* \* \* \* \*

(6) \* \* \*

(iii) If instructing in an FSTD for a curriculum approved under § 61.154 of this chapter, holds an airline transport pilot certificate with an airplane category multiengine class rating, meets the aeronautical experience requirements of § 61.159 of this chapter, and has at least 2 years of experience as a pilot in operations under § 91.1053(a)(2)(i) or § 135.243(a)(1) of this chapter, or in any operation conducted under part 121 of this chapter. Additionally, instructors must have an appropriate aircraft type rating for the aircraft that the FSTD represents or have received instruction from the certificate holder on any maneuvers or concepts they will demonstrate in the FSTD; or

(iv) Is employed as an FSTD instructor for a training center providing instruction and testing to meet the requirements of part 61 of this chapter on August 1, 1996.

\* \* \* \* \*

37. Amend § 142.49 by revising paragraph (c)(3)(iv) to read as follows:

**§ 142.49 Training center instructor and evaluator privileges and limitations.**

\* \* \* \* \*

(c) \* \* \*

(3) \* \* \*

(iv) If instructing or evaluating in an aircraft in flight while serving as a required crewmember, holds at least a valid second class medical certificate; and

\* \* \* \* \*

**§ 142.55 [Amended]**

38. Amend § 142.55 as follows:

A. In paragraph (a)(2), remove the phrase “part 187” and add in its place the phrase “part 183”; and

B. In paragraph (d), remove the phrase “SFAR 58” and add in its place the

phrase “subpart Y of part 121 of this chapter”.

Issued in Washington, DC, on February 22, 2012.

**John W. McGraw,**

*Deputy Director, Flight Standards Service.*

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