

Response to FAA ANPRM – Docket FAA-2010-0100; Notice 10-02

Re: 14 CFR Parts 61 & 121 – New Pilot Certification Requirements for Air Carrier Operations

**Background:** The Society of Aviation and Flight Educators (SAFE) is a member driven organization of over 360 aviation educators from all areas of aviation. SAFE polled its members regarding the ANPRM issues, and consolidated those ideas, both pro and con, into this response. Members were passionate and outspoken in their views. Credentials of these members included Master Instructors, flight instructors, ground instructors, FAR121 instructors, Director of Training, aviation business owners, pilot examiners, FAR141 chief pilot, FAA Team representatives, US Air Force instructor, airline transport pilots, a non-profit aviation safety organization, aircraft owners, Navy captain, Civil Air Patrol check pilot and check pilot examiner, flight school owner, and university professors.

**General:** The quite uniform consensus was that a requirement for an Airline Transport Pilot certificate (ATP)/1500 hours would not help resolve the problem which caused the issue to arise in the first place – the Colgan Air crash. Specifics will be dealt with more in the responses to the itemized questions, but the overwhelming number of responses indicated that hours or a rating in and of itself was not the answer. One particular response noted that the Colgan crash was the result of inappropriate actions taken in an attempt to recover from a stall, and noted that this is a basic requirement of the Private Pilot Certificate. While one response indicated that anyone operating in the Part 121 environment should hold an ATP, most argued that the true indicator was the type and quality of training received in the environment – i.e. the training provided by the airline after the person was hired but before that person went to work on the line. The same was true for those making upgrades to the captain position – that the training be relevant and of sufficient duration to insure competency.

There was no disagreement with the idea that a pilot's full background, including check ride history, should be fully available and properly investigated prior to hiring into the Part 121 environment.

The most significant comment stated in various ways in other responses said, "The problems are not with the [regulations - CFRs] but with the individual air carriers and their operational training of their new 2<sup>nd</sup> officers and how fast they move up to the captain's seat. .... They seem to be rushing the process too much and the air carriers are not testing their pilots before upgrading. The FAA is not supervising or regulating carriers enough."

**Question #1** – Requirement for all pilots employed in Part 121 Air Carrier Operations to hold an ATP with the appropriate category, class, and type rating, or meet the aeronautical experience requirements of an ATP Certificate.

**1A – Should the FAA require all pilot crew members engaged in Part 121 air carrier operations to hold an ATP certificate?**

One succinct response was, “An ATP certificate, as currently specified, requires 1500 hours of flight time and a minimum age of 23. Both of these requirements are arbitrary and do not reflect specific competencies acquired and demonstrated beyond the passage of a written and flight test administered by the FAA or its designee.” For example, a person could obtain a commercial certificate, spend the next months flying banners along the coast of New Jersey, and then, by taking a cram course, pass the ATP written – which is an outdated test in many ways. Then, by taking a cram flight course, prepare and take the FAA flight test, thus gaining an ATP and be eligible to be a Part 121 Air Carrier crew member.

Another response goes on to say that, “Public Safety is better served by requiring the aforementioned ARC [Aviation Rulemaking Committee] to define specific skills and competencies [KSAC’s – Knowledge, Skills, Attitudes, and Competencies] which candidate first officers should acquire and demonstrate in order to operate safely and successfully under Part 121 air carrier operations.” In other words, it is the content, not the quantity, of time and training that are important – do they have the skills?

SAFE members have flown with pilots who do not meet the ATP requirements but who were highly qualified to operate within the environment, but they have also flown with ATPs who were in no way ready to operate in the Part 121 air carrier environment.

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

Comments indicated that knowledge was definitely a prerequisite but that hours were not. The big question was what knowledge and how to determine it. As previously noted, an ARC determination of specific knowledge would be beneficial, and that the ATP knowledge test needed to be revised to keep with updated and current information in that regard. Further, however, it was stressed by a majority that the responsibility of the air carrier to carry out additional training and experience (such as IOE and crew pairing exercises) was a must prior to the assumption of Part 121 first officer duties.

One SAFE member proposed an “ATP-lite” certificate to be obtained at 750 hours with appropriate knowledge testing and flight testing for entry level competencies, and a significant number of hours in an FAA approved flight simulator which accurately represented the type of aircraft to be flown – not type specific, but general type, such as multi-engine jet. While that suggestion again put an hour limit in place with which many disagreed, it did stress the issue of knowledge and relevant experience in a specific manner.

Perhaps the most succinct response was, “You can’t gain that competence by flight hours alone.” And, we know from a long history of educational experience and testing, that some people can acquire knowledge and skills in a shorter time than others.

**Question #2 – Academic Training as a Substitute for Flight Hours Experience:**

**2A – Are aviation/pilot graduates from accredited aviation university degree programs likely to have a more solid academic knowledge base than other pilots hired for air carrier operations?**

General responses indicated that graduates from accredited programs did have a more solid knowledge base, and also cited that that knowledge usually came in a study process rather than in a “how to pass a test” environment. Thus it was felt that the programs demonstrated a depth of knowledge which also indicated an “ability to learn” and grasp. However, this alone was not sufficient, and that proper additional training in multi-crew operation and cockpit management was needed as well. The most concise statement was, “All other things being equal, the most solid academic knowledge and ability to apply it in a practical situation is likely to emerge from academically-based programs” especially those accredited by a recognized accrediting agency.

There was a concern that the term “accredited aviation university degree program” is a really vague term. Accredited by whom? Which degree programs? There are flight and non-flight aviation degree programs within many aviation colleges. The Aviation Accreditation Board International (AABI) they must be accredited by them. This is great for the large schools, but many university aviation degree programs are not accredited by AABI, they are accredited by the general agency that accredits the college of university. Meeting the standards of AABI is an admirable requirement, but the specific details of accreditation need to be worked out before a law is passed.

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

On the topic of academic credit, the answer was, “It depends” on the type of academic training that was received. While someone might hold a bachelor degree in Flight Education, Aviation Management, Aviation Safety, or Aviation Science, for example, the question is, if they were to be serving as a flight deck officer, what part of that training was relevant to the environment? Again, content rather than “time” (the attainment of a four year degree) was cited. Also, it was not universal that a “four year” degree was the only choice, as there are excellent two year programs, at both 4 year colleges and universities as well as at 2 year colleges. Content and relevance was the issue, whether the program/college/university had the ability to train and provide simulation in the areas most needed and determined by the aforementioned ARC process. Meeting these requirements would be acceptable in lieu of flight hours.

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

While there was general agreement that credit should be given, there was some divergence on how much. Some indicated 500 hours with and 750 hours without, while

others took the aforementioned competencies approach. It was cited, for example, that some might be able to demonstrate the competencies in 250 to 350 hours, while others might take significantly longer. However, only with an expert panel such as the ARC to determine the training and competency required, would they be in a position to determine specific minimum hour requirements.

### **Question #3 - Endorsement for Air Carrier Operations:**

The FAA requests comments on the following issues regarding the possibility of establishing an endorsement for SIC privileges in part 121.

SAFE members provided two general comments to this topic. One suggestion was a “Transport Pilot Privileges” endorsement to the commercial certificate based on passing the ATP written and oral. It was also suggested that altitude chamber training be required to be successfully completed. The other SAFE member felt that Part 61 was not the place to find this kind of requirement – that, instead, it should be addressed in Parts 119, 121, 135, and 136 operational training requirements. This would, of course, place the burden on the operator to insure that the candidate would meet certain standards before assignment to the appropriate crew position.

### **3A – Should the FAA propose a new Commercial Pilot Certificate endorsement that would be required for a pilot to serve as a required pilot in part 121 operations?**

Responses here were split between “no” and “yes, but...” On the “yes, but” side, reference was again made to the ARC, or some other body, to determine what items would be appropriate for such an endorsement. A question was also raised as to whether or not all of such endorsement items should be “pre-hire” or whether some should be “pre-hire” with a second endorsement level to be done by the airline in a “post-hire” environment. The reason for the distinction was the availability of some of the higher level training equipment such as higher level simulators that would be appropriate for such endorsements.

One SAFE member also suggested that the current certification process is based strictly on the attainment of certain discrete steps that prepare pilots “generally” for a multiple number of possible career directions and are not focused on any specific career path. Reference was made to the ICAO Multiple Crew Pilot License process for ab-initio type training for a specific career path – airline pilot, in this case a Part 121 air carrier pilot career. Significant evidence exists to support the concept that skills attainment, rather than hours attainment, is a viable alternative. It was suggested that the Administrator include this consideration in the charge to the ARC.

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

Answers here ranged from “An increase in minimum hours” to very specific pre-employment items – see the list that follows:

1. Turbine engine theory

2. High altitude airspace and the characteristics of high altitude operations
3. Jet transport navigation and approach procedure chart interpretation
4. Typical air carrier aircraft flight guidance systems
5. The effects of high altitude physiology
6. Air carrier and business aviation flight planning
7. High altitude weather
8. Weather radar
9. Severe weather avoidance procedures
10. Aircraft icing, anti-icing, de-icing, and the consequences of airframe, engine and other forms of icing
11. FAR Part 121 – Certification and Operations: Domestic Flag and Supplemental Air Carriers and Commercial Operators of Large Aircraft
12. Typical air carrier flight management systems
13. Jet engine monitoring systems such as EICAS
14. Air carrier operating procedures
15. Air carrier safety programs and issues
16. Hydroplaning
17. Wind shear detection and avoidance
18. Jet aircraft systems, including typical air carrier avionics.
19. Jet transport aircraft emergency procedures
20. Air carrier aircraft performance, weight and balance
21. Pilot professionalism, authority and responsibility, and ethics.
22. The elements of good customer service
23. Aviation safety concepts including FOQA, ASAP, and SMS
24. Crew Resource Management (CRM)
25. Typical air carrier crew procedures including flows and other forms of checklist usage
26. Line-Oriented Flight Training (LOFT).
27. Stalls and upset recovery training.

While the inclusion of all of these items in “pre-hire” might not be practical, it does illustrate the fact that it is competencies, not hours, that are the issues that will lead to public safety. Some of the items shown might, more appropriately, be in a “post-hire” training environment.

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

The arguments here are the same as already stated. To generalize, some felt 500 hours with an academic degree and 750 hours without. However, others felt strongly that competencies were the issue and that some might well be able to attain those in far less hours. Industry experience has shown, for example, that some pilot candidates with as low as 250 to 350 hours successfully demonstrated competencies necessary to serve SIC in part 121 operations, especially in the multiple crew pilot license environment.

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

One answer was “none”. However, a question was raised about how one gets operating experience “in icing conditions” or “at high altitude” short of being inside the airline environment unless one is fortunate enough to get employment in a corporate jet environment. Again the conversation came back to competencies, and indicated that an ARC convened by the Administrator should focus on what those competencies would be and how they would be demonstrated, “in an airplane” or “in a simulator”, for example. Another topic raised was fatigue countermeasures and alertness management, because fatigue due to commuting was a significant part of the Colgan crash.

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

Answers here ranged from “no opinion” to references back to the ARC process. It is not “obvious” how academic training would substitute for these specific items, with the possible exception of multi-crew training which could be done in some form of classroom simulation. However, in all cases, standardization is a major problem in equating classroom academics with practical experience.

#### **Question #4 – New Authorization on an existing pilot certificate**

First, these are 3 specific comments by SAFE members. Answers to the specific questions follow.

Member #1 - I would not be comfortable with an air-carrier-specific authorization for current pilot certificates as the possibility exists whereas a particular carrier may “pencil in” a particular airman’s experience or training record without any FAA oversight. I would rather the FAA and only the FAA be responsible for any specific pilot authorizations regarding pilot training and certification outside the auspices of an FAA 121 or FAA 135 air carrier. The airman MUST demonstrate his/her knowledge of the

same subjects covered in the ATP written exam with additional systems knowledge of the aircraft of which they operate. An in-depth written exam (200 or more questions) relating to the particular aircraft's systems such as electrical, fuel, pneumatics, flight controls, fire suppression, hydraulics, pressurization as well as all published aircraft limitations. The question bank may be written by the air carrier or aircraft manufacturer however testing administered by the FAA or any FAA-authorized testing center. (Stephen Gatlin)

Member #2 - I don't believe this is a viable option due to standardization and training resources available to air carriers. I believe the standard (and authorization) should remain with the FAA. Aeronautical Knowledge and Flight Experience requirements have already been established by the FAA. This should be applied to the appropriate certificates. If the FAA should determine additional requirements exist then that should be added to the current requirements. (Michael Davis)

Member #3 - As to other proposals in the ANPRM (4A, 4B, 4C), there is an undertone of indentured servitude. I am opposed to any limitation added to a pilot certificate that is carrier specific. The carrier is free to institute whatever internal training requirements it desires, subject to the purview of the FAA over its Operating Certificate. To place a carrier specific-limitation on a certificate is to tell the pilot, "Your certificate is good only as long as you work for your current employer." This is contrary to the American precept of freedom of employment.

**4A – Would air carrier-specific additional authorization on an existing pilot certificate improve the safety of Part 121 operations? Why or why not?**

Under current US licensing regulations it would not. Air carriers are already required to provide this level of training for new first officers and it is not clear that an additional endorsement would serve any benefit. In the case of Colgan, the training should have been given, and is already specified, so it is unlikely that such an endorsement would have made any difference. The issue is not endorsement or authorization on existing certificates but effective, documented, and properly supervised training on the part of the airline and the FAA.

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

As noted above, the principal issue is training, not endorsement. However, if an additional endorsement is to be used, it should apply to any relevant certificate held by the airline employee at the time. It should apply to both in this case.

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

Again, as previously expressed in this document response, hours are not the issue. The endorsement/authorization, if it is to be used at all, should be competency based.

**Question #5 – The FAA is seeking comments on whether existing monitoring, evaluation, information collection requirements, and enforcement associated with current pilot performance could be modified to achieve improved pilot performance.**

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

The general response was that existing tools provide the FAA with the necessary tools to accomplish this function and assure public safety. This is contingent, of course, on two things. First, that the information on performance history is, in fact, available, and accurate, to the FAA, their designees, and to employers.

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

Given the statement provided in 5A, there must be a way to insure that the entire airman examination, accident, and incident record is disclosed whenever pilot candidates present themselves for a new rating, endorsement, or for Part 121 employment – in fact it should be accurate and available when applying for ANY form of employment in which the pilot would be working for “compensation or hire”. If any modifications are necessary, they are in the record keeping protocols themselves and the means of distribution and access.

**Conclusions**

From the SAFE member responses, several conclusions can be drawn:

- 1) Hours alone are not an indicator of competency or public safety.
- 2) Competency is the indicator that should be emphasized to insure public safety.
- 3) Responsibilities are with both the FAA and air carriers to insure that the proper training and competencies are achieved prior to placing pilots into the Part 121 aircrew environment.
- 4) The Administrator should convene a panel of experts to determine the specific competencies that should be included in pre-hire decision making and also in post-hire training and certification of Part 121 aircrews.
- 5) The FAA should be more aggressive monitoring and assuring that the competencies and training are being carried out and met.

The incident that sparked the current concern for public safety was truly unfortunate, and was the result not of an insufficiency of hours by the pilots involved. It was the result of poor training, failure to adhere to standards of procedures, poor airmanship, and failure to maintain proper discipline in the cockpit environment. There were indicators of potential problems in the captain’s training and checkride history. The lack of professionalism in the cockpit was indicated by the lack of commitment to the procedures which also should have been known. We have seen other incidents recently including the Northwest Airlines over-flight, in which the crew’s professionalism did not assure public safety. In that case, many hours of experience existed, yet the over-flight happened, and could have been a major disaster had not the non-pilot crew questioned why they were not descending. What is needed is emphasis on competencies and professional behaviors, and those do not come with hours but rather with proper assessment of the competencies of

the pilots by both the FAA and the air carriers, and the proper and complete training, testing, and monitoring of those crews by both entities.