

4-2011

# A Critical Analysis of the Airline Safety and Federal Aviation Administration Extension Act of 2010

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A CRITICAL ANALYSIS OF THE AIRLINE SAFETY AND FEDERAL AVIATION  
ADMINISTRATION EXTENSION ACT OF 2010

by

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A.A.S., Southern Illinois University, 2008

B.S., Southern Illinois University, 2008

A Research Paper

Submitted in Partial Fulfillment of the Requirements for the  
Master of Public Administration Degree

Department of Political Science  
in the Graduate School  
Southern Illinois University Carbondale  
May 2011

RESEARCH PAPER APPROVAL

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April 8, 2011

AN ABSTRACT OF THE RESEARCH PAPER OF

KATIE M. LAKE, for the Master degree in PUBLIC ADMINISTRATION,  
presented on April 8, 2011, at Southern Illinois University Carbondale.

TITLE: A CRITICAL ANALYSIS OF THE AIRLINE SAFETY AND FEDERAL  
AVIATION ADMINISTRATION EXTENSION ACT OF 2010

MAJOR PROFESSOR: Dr. David NewMyer

The purpose of this research was to determine how collegiate aviation programs and the future pilot supply will be affected if the Airline Safety and Federal Aviation Administration Extension Act of 2010 is adopted in its entirety. This research builds on literature which suggests graduates from accredited aviation institutions possess the required aeronautical knowledge to competently serve as a first officer for part 121 air carriers. This hiring channel will suffer, safety may be compromised and the future supply of well-qualified pilots may dwindle if the FAA refuses to recognize the invaluable importance of collegiate aviation programs and the detriment of requiring 1,500 total flight hours.

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## CHAPTER 1

### INTRODUCTION

On February 12, 2009, Continental Connection, operated by Colgan Air, Inc. was involved in an accident while flying a Bombardier Dash 8 Q400, a twin-engine turboprop, between Newark International Airport and Buffalo Niagara International Airport. Sadly, the tragedy claimed the lives of all forty-five passengers, the four crew members and one individual on the ground. Pressure from the public resulted in the development of The Airline Safety and Pilot Training Improvement Act of 2009 (H.R. 5900). In H.R. 5900, the Air Transport Pilot certificate (ATP) is required for both the captain and the first officer positions at all Federal Aviation Regulation part 121 airlines within three years of the passage of the bill. The significance of this proposed requirement is that the ATP requires 1,500 hours of total flight time and that the holder of an ATP be at least 23 years of age. Currently, only captains for part 121 airlines are required to hold an ATP and air carriers are allowed to determine the amount of flight hours that they deem acceptable for their first officer applicants. Therefore, first officers are currently hired with less than 400 total hours up to 1,500 and earn their ATP once they build 1,500 hours and reach 23 years of age, as applicable. If the ATP-only provision is approved, this would no longer be allowed, which will have important impact on airline hiring practices, all flight training including collegiate training and the overall pilot supply. Therefore, this document poses two research questions:

1. What is the contribution of university aviation institutions to the supply of new pilots in the United States?
2. What are the implications on the future pilot supply if the proposed ATP-only provision of the Airline Safety and Federal Aviation Administration Extension Act of 2010 is implemented?

## CHAPTER 2

### METHODOLOGY

To better understand the implication of this legislation, I performed a literature review focusing on the contribution of university aviation to the supply of new pilots and the overall pilot supply. This review will utilize government documents including those from the Federal Register, House of Representatives and the Senate. In addition, I identified the previous and current pilot supply from Federal Aviation Administration Data, scholarly journals, documents from the University Aviation Association (UAA), the Aviation Accreditation Board International (AABI), studies completed by Embry-Riddle Aeronautical University (ERAU), Southern Illinois University, The National Science Foundation (NSF) and public hearings. These sources assisted in my determination of the implications of the pilot supply on the future aviation industry if the ATP-only provision of the Airline Safety and Federal Aviation Administration Extension Act of 2010 is fully adopted.

## CHAPTER 3

### LITERATURE REVIEW

Flight 3407, operated by Colgan Air, Inc. became the deadliest major aviation accident since American Airlines' Airbus A300 claimed 265 lives on November 12, 2001 in Bell Harbor, New York. The concerned public, the media and mostly the grieving families alleged inadequate training and experience on behalf of the captain and the co-pilot as the primary contributor to the accident and resulting fatalities. In response to the public's considerable attention to air carrier flight crews' experience, President Barack Obama signed into law the Airline Safety and Federal Aviation Administration Extension Act of 2010 on August 1, 2010 (H.R. 5900: Airline, 2010).

Section 216 of the act states that all flight crewmembers, captains and first officers, of part 121 air carriers must possess an Airline Transport Pilot Certificate (ATP) by July 29, 2011 or "...3 years after the date of enactment of the act" (Airline Safety and Federal Aviation Administration Extension Act of 2010, 2010). To obtain an ATP certificate, pilots must be at least twenty-three years of age, "have appropriate multi-engine aircraft flight time experience, as determined by the Administrator," (Airline Safety and Federal Aviation Administration Extension Act of 2010, 2010, p. 52) and possess at least 1,500 total flight hours. This provision suggests quantity exceeds quality meaning the number of flight hours is synonymous with experience and knowledge (Brady, 2009). A specific number of flight hours do not guarantee that the individual possesses other critical

attributes such as: ability to work in a team setting, easily trainable and good crew resource management (CRM) skills above and beyond flight hours and certification requirements. These skills were identified through various studies by a variety of researchers as "...predictive factors for success as an aviator" (Fanjoy, Young, & Suckow, 2006, p. 68).

A survey published in the *Collegiate Aviation Review* (2006) documented attributes regional carriers' value of their new pilot candidates more than flight hour and certification requirements. On a scale of 1 (low) to 5 (high), the most important traits were recognized as: being a team player (4.7), trainability (4.8), current flight experience (4.2) and good CRM (4.5) (Fanjoy et al., 2006).

According to the FAA, CRM is "...the application of team management concepts in the flight deck environment" (Federal Aviation Administration, 2008, p. G-8).

More conclusive, however, CRM allows flight crews to "...make effective use of all available resources; human resources, hardware, and information" to safely operate the aircraft (Federal Aviation Administration, 2008, p. G-8). This skill is highly important as part 121 carriers transport thousands of passengers in sometimes very stressful situations on a daily basis. Therefore, CRM is not only useful, but a necessity to maintain overall safety.

Albeit only moderately important traits, a college education (3.9) is valued more than total flight time (3.2) (Fanjoy et al., 2006). Studies have indicated that regional carriers view those who possess a college education as more trainable than their non-college educated counterparts. College-educated candidates are presumed to possess the ability to study, understand and apply training material

during the airlines' rigorous indoctrination program easier than those without degrees. Graduates from University Aviation Association (UAA) institutions typically possess the "most and moderately important" traits, but fall short on flight hour requirements.

The aviation industry's hiring practices are described as very cyclical as they parallel economic trends, but the demand for air travel is forecasted to increase steadily in the next decade as one billion passengers are estimated to be flown by 2021 (Federal Aviation Administration, 2011). Domestic passenger enplanements are expected to increase by 2.6% annually while revenue passenger miles are estimated to increase by 3.2% in response to the strengthening economy. The FAA predicts the amount of airline passengers will grow 3.5% in 2011 and "...continue with over one billion passengers traveling on US airliners by the year 2021" (Templeton, 2011, p. 1). To satisfy this significant demand in air transportation, the Bureau of Labor Statistics estimates an 8% increase of employment for airline pilots, co-pilots and flight engineers by 2018 (see table 1) (Bureau of Labor Statistics, 2010). The Boeing Aircraft Company forecasts airlines will require approximately 23,300 new pilots annually from 2010 to 2029 (Boeing, 2010).

Table 1

*Projected Employment for Aircraft Pilots in 2018*

Occupational Title	Employment, 2008	Projected Employment, 2018	Number Change, 2008-2018	Percent Change, 2008-2018
Aircraft pilots and flight engineers	116,000	129,700	13,700	12
Airline pilots, co-pilots, and flight engineers	76,800	83,300	6,400	8
Commercial pilots	39,200	46,500	7,300	19

Complicating the issue, the FAA raised the mandatory retirement age from 60 to 65 in 2007 (Federal Aviation Administration, 2007). The oldest pilots who continued to work under this new rule will be forced to retire at the end of 2012. In 2013, "...over one thousand additional airline pilots will retire...which will set the pace of increased retirements into the future" (Templeton, 2010, p. 1). This will allow many regional captains to upgrade to the major air carriers. Therefore, part 121 air carriers must rely on pilots from five training options to fulfill their hiring needs and satisfy their customers increasing demand for air travel: foreign hires, ab initio ("from the beginning") training, the military, generic flight schools and collegiate programs.

United States air carriers express no inclination to hire foreign-trained pilots and expect "...more exporting of American-trained personnel than importing of foreign-trained specialists" (National Research Council, 1997, p. 78). In fact, of an estimated 594,285 active pilot certificates held in the United States in 2009, 283,899 were student and private pilots and 144,600 held ATP certificates. Although the number of active pilot certificates including ATP certificates has declined since 2000, the United States has a decent pilot population, negating the need to recruit from overseas to fill pilot vacancies.

Ab initio training "...is a civilian, airline-sponsored version of what the U.S. military does, beginning with so-called no-time pilots and training them directly" (National Research Council, 1997, p.90). This technique is generally not used by United States air carriers due to their relative ease of recruiting former military pilots and expansive general aviation population.

Former military pilots offer air carriers easily verifiable quantity and quality training records, the documentation of the variety and complexity of their flying experiences and traceable track records. Since the 1980s, the military underwent serious downsizing by reducing aircraft fleet size and restructuring. The number of pilot recruits has dramatically decreased as the United States Air Force predicted a pilot shortage during FY2002 to FY2007. “About 25 percent of new airline pilots...come from the uniformed services, half as many as a decade ago” (Pilot Shortage: A Thunderhead, 2011, p.1). Former military pilots transition to major air carriers such as United Airlines, American Airlines and US Airways in lieu of regional carriers such as American Eagle, Trans States Airlines, Skywest and Colgan Air. This requires regional carriers, who are responsible for flying one in four passengers, to depend upon on-the-job- or collegiate-trained pilots to fill their vacancies (Federal Aviation Administration, 2011).

The Aircraft Owners and Pilots Association’s (AOPA) Flight School Directory indicates 3,500 schools nationwide provide flight instruction services. Flight schools are distinguished by two specific features: accountability and structure. Part 61 schools provide students with highly-flexible, individually-paced instruction not pursuant of associate or baccalaureate degrees. According to a survey by Future Aviation Professionals of America “...more than 90% of new hires have [a college degree] at the larger airlines” which is becoming required or highly preferred throughout the industry (National Research Council, 1997, p. 79). In addition, no element of a part 61 flight school, with the exception of their flight instructors, is certified by the FAA which results in reduced

accountability and lack of a structured curriculum (Aircraft Owners and Pilots Association, 2009).

Part 141 flight schools satisfy FAA standards regarding facilities, equipment, curriculum and personnel. According to the FAA, “Enrollment in a certificated school usually ensures quality and continuity of training” (FAA, 2006, p. 2). In 2009, the FAA certified approximately 600 part 141 schools (Bureau of Labor Statistics, 2011). Due to FAA approval and influence, collegiate part 141 institutions, either two-year or four-year colleges or universities, maintain a significant level of accountability and are highly structured. Of the approximate 300 part 141 collegiate institutions nationwide, UAA represents 105.

UAA is a professional association that strives to “...provide and nurture the linkage between college aviation education, the aviation industry, and governmental agencies” while providing a forum for “...students, faculty, staff and practitioners to share ideas, to enhance the quality of education, and to develop stronger programs and curricula” (University Aviation Association, 2011). Of those 105 UAA institutions, 29 are accredited by the Aviation Accreditation Board International (AABI). AABI provides accreditation to educational institutions and their programs that “...achieve and maintain a level of performance, integrity and quality that entitles them to the confidence of the educational community, the industry and the public they serve” (Aviation Accreditation Board International, n.d.). AABI-accredited UAA institutions are those that provide and uphold the highest standard of excellence to their aviation programs and students.

These institutions represent approximately 6,500 students enrolled in

various academic professional pilot programs, accounting for slightly less than 20 percent of the professional pilot workforce (Bureau of Labor Statistics, 2010).

According to UAA's Collegiate Aviation Guide (2008), approximately 416 students are enrolled in flight education associate degree programs and 6,092 in baccalaureate degree programs. Graduates from these institutions "...typically have earned their private, commercial, instrument, multi-engine and perhaps the certified flight instructor qualifications, have about 250 to 350 hours of flying time, and are not yet 23 years of age" (Brady, 2009, p. 2). If the ATP provision is approved, graduates will be required to log an additional 1,150 to 1,250 hours to qualify for a part 121 air carrier's entry-level first officer position which exacerbates the threat of a pilot shortage and places a severe strain on all hiring channels especially collegiate aviation.

The FAA established the First Officer Qualification Aviation Rulemaking Committee (ARC) in response to FAA Administrator J. Randolph Babbitt's Airline Safety Pilot Training Call to Action on June 15, 2009. The committee released an advanced notice of proposed rulemaking (ANPRM) in February 2010, requesting public comments (due by April of 2010) regarding new pilot certification requirements for part 121 operations. The following discusses responses for pertinent questions from several aviation trade associations<sup>1</sup>,

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<sup>1</sup> AOPA, ALPA, UAA, AABI, SAFE, RAA, PCI, IATA, NBAA, NATA, NAFI, ATA, CAPA and GAMA

airlines<sup>2</sup> and universities<sup>3</sup> that submitted comments on <http://www.regulations.gov>.

First, “Are aviation/pilot graduates from accredited aviation university degree programs likely to have more solid academic knowledge base than other pilots hired for air carrier operations? Why or why not?” (New Pilot Certification Requirements for Air Carrier Operations, 2010, p. 6165). Typically, respondents answered this question in the affirmative (see table 2).

Table 2

*Dispersion of Responses to First Question*

Respondent	Yes	No	No Answer	Total
Professional Organizations	8	2	4	14
Airlines	3	1	0	4
Collegiate Institutions	5	0	0	5
Total	16	3	2	23

The Air Line Pilots Association, International (ALPA) represents approximately 53,000 pilots who fly for 38 air carriers in the United States and Canada (Air Line Pilots Association, 2010). In their response they stated, “...an accredited university’s academic program will very likely be more in-depth on the knowledge requirements currently outlined in the regulations, provide more up-to-date instruction on technology, operations, and the operating environment, and

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<sup>2</sup> Continental Airlines, Cape Air/Nantucket Airlines, JetBlue Airways and Ameristar Air Cargo

<sup>3</sup> Southern Illinois University at Carbondale, ERAU, Parks College, University of Alaska Anchorage and Liberty University

produce a better-rounded individual” (Air Line Pilots Association, 2010, p. 5). The Regional Airline Association (2010) agreed by stating, “...a candidate with an aviation degree is better prepared to transition to the structured training environment of an air carrier” (Regional Airline Association, 2010, p. 5). Three of the four airlines witnessed better performance and a greater breadth of knowledge from their first officers who graduated from AABI-accredited institutions. “It has been Cape Air’s experience that the pilot candidates from AABI-accredited aviation university programs are better prepared to learn and achieve higher success than their peers from other training sources” (Cape Air Nantucket Airlines, 2010, p. 2).

The two professional organizations and one airline who disagree argue that graduates from other fields of study have just as much aeronautical knowledge and success after first officer training as those who completed an aviation university program. Ameristar Air Cargo contend their experience with graduates from accredited aviation university degree programs “...has not shown any advantages over pilots that have had a solid foundation in either a one or two-pilot crewed aircraft operating under part 135” (Ameristar Air Cargo, 2010, p. 3). The Coalition of Airline Pilots Associations (CAPA), a newly established organization, which represents pilots from air carriers including: Kalitta Air, Polar Air Cargo, Atlas Air and NetJets claims “Many of today’s senior airline pilots have post graduate degrees in fields such as medicine, law, finance and engineering and have approached their academic aeronautical training with the same vigor” (The Coalition of Airline Pilots Associations, 2010, p. 5).

Considering, university aviation program graduates have generally highly regarded knowledge bases, the FAA asked: “Should [we] consider crediting specific academic study in lieu of flight hour requirements? If so, what kind of academic study should the FAA accept, and to what extent should academic study (e.g., possession of an aviation degree from an accredited four-year aviation program) substitute for flight hours or types of operating experience?” (New Pilot Certification Requirements for Air Carrier Operations, 2010, p. 6165).

Table 3

*Dispersion of Responses to Second Question*

Respondent	Yes	No	No Answer	Total
Professional Organizations	10	2	2	14
Airlines	3	1	0	4
Collegiate Institutions	5	0	0	5
Total	18	3	2	23

Eighteen of the respondents (see table 3) agreed that the FAA should consider crediting graduates from accredited aviation colleges/universities in lieu of flight hour requirements. The Air Transport Association of America, Inc. (ATA) represents major air carriers including: American Airlines, Delta Airlines, Southwest Airlines and Alaska Airlines. They indicated that “...the FAA should grant a flight hour credit for aviation academic study, which should include military training, a degree granted by an accredited college, a degree granted by an accredited aviation college” (Air Transport Association of America, Inc., 2010, p. 4). The ARC was generally the entity the respondents found suitable to determine the specifics of the potential substitution.

The three respondents (see table 3) who disagree with offering academic credit argued "...no amount of theoretical or classroom-oriented study can serve as a substitute for practical experience" (The Coalition of Airline Pilots Associations, 2010, p. 5). It is possible, however, that some pilots are simply repeating the same flight 1,000 times to satisfy the flight hours requirement without gaining additional aeronautical knowledge and practical experience (Brady, 2009).

The FAA solicited comments on the minimum number of total hours that should be required. In the ANPRM the FAA put forth 750 total flight hours instead of 1,500 as the requirement for first officers in part 121 operations, so they asked: "Is this number too high, or too low, and why?"(New Pilot Certification Requirements for Air Carrier Operations, 2010, p. 6166).

Table 4

*Dispersion of Responses to Third Question*

Respondent	1,500 Hours	750 Hours	500 Hours	No Specific Number Given	No Answer	Total
Professional Organizations	1	2	1	9	1	14
Airlines	1	1	1	1	0	4
Collegiate Institutions	0	0	4	1	0	5
Total	2	3	6	11	1	23

Overall, it was agreed that an hour requirement was necessary (see table 4). However, most of the respondents rejected the 1,500 total flight hour requirement, stated 750 hours was too high, but refused to suggest a replacement number. Pilot Career Initiative (PCI) is a group composed of airline

executives and aviation educators. PCI stated, “Selecting an arbitrary number of flight hours is not appropriate. 750 hours might not reflect the competency-based training and education program that needs to be developed. Industry experience has shown that pilot candidates with as low as 250 – 350 hours have been successful in achieving excellent performance as new first officers” (Pilot Career Initiative, 2010, p. 5). Also, many respondents noted the lack of statistical evidence that would suggest a correlation between low flight time pilots and accidents and incidents (The General Aviation Manufacturers Association, 2010, p. 2). The National Association of Flight Instructors (2010) recognizes the scarcity of this data and suggests “...further collection, analysis, and refining of this type of data will be necessary to adequately provide an ability to appropriately address this question of raw flight hours in correlation to competency for operations in air carrier operations” (p. 5-6). Embry-Riddle Aeronautical University and Southern Illinois University based their responses from two recent pilot supply studies.

A pilot yield study was conducted by ERAU “...to determine the quality of new hire first officers entering an air carrier’s training program” (Embry-Riddle Aeronautical University, 2010). The study analyzed training records for 452 pilots at regional airlines from 2006 to 2007. These pilots were categorized as “best performers” or those who required no additional training or “worst performers” or those who required more than nine additional training events. The results indicated that over 70% of AABI graduates with CFIs and less than 500 hours of total flight time performed well in training (Embry-Riddle Aeronautical

University, 2008). Several AABI-accredited institutions offer various professional flight development courses not required by the FAA such as Airline Turbine Aircraft Operations (AF305) at Southern Illinois University and Airline Flight Crew Techniques and Procedures (FA420) at ERAU. These courses provide AABI-accredited program graduates with a greater depth and breadth of knowledge and skills unlike those pilots who train at fixed-base operators (FBO) and commercial flight schools under part 61 regulations such as Delta Connection Academy and Airline Transport Professionals. In lieu of providing and instilling quality piloting skills and unparalleled aeronautical knowledge, these programs offer to accelerate private pilots to multi-engine instrument instructors within a few months. The pilot yield study determined that 15% of these pilots were deemed “worst performers” or those that required more than nine additional training events (Embry-Riddle Aeronautical University, 2008).

In a second study, researchers from seven AABI-accredited UAA institutions analyzed the training performance of 2,156 new-hire pilots for six regional air carriers from 2005 – 2009. Findings indicated “...if pilots earned their college degree in an AABI Accredited Flight Program, they had fewer extra training events and fewer non-completions in initial training” (Smith, Bjerke, NewMyer, Niemczyk & Hamilton, 2010, p. 89). Also, candidates who completed their flight training in a collegiate setting performed better than non-collegiate flight training schools.

Moreover, 55% of the survey pilots were hired by a regional carrier with less than 1,500 hours (Smith et al., 2010). These pilots had the lowest extra

training events compared to those with ATP-level flight hours. In fact, those pilots with more than 1,500 total flight hours at the time of hire required significantly extra training events and had more non-completions in initial training (Smith et al., 2010). These findings suggest that quantity does not out-weigh quality. As such, “Many regional carriers...have lowered their minimum flight experience requirements to well below 1,000 [total flight hours]” (Fanjoy et al., 2006, p.68). In 2009 several regional carriers advertised total flight time minimums below 800 hours including: Comair (600), ExpressJet (600), Mesa Airlines (500), Trans States Airlines (500) and American Eagle Airlines (400) (Fiorino, 2009). In fact, American Eagle Airlines accepted lower than their posted 400 flight hours “...depending upon candidate experience” (Fiorino, 2009, p. 54).

Dr. Tim Brady, Dean of the School of Technology at ERAU and past president of AABI and UAA, testified against the ATP provision at the House Aviation Subcommittee hearing on June 6, 2009. He warns “...that the ATP requirement could work to ‘choke the system’ – that is, effectively knock out people with low time who might turn out to be excellent employees, in favor of someone who has logged the time, but who had a bad record and would have otherwise been rejected for employment” (Fiorino, 2009, p. 54).

On the other hand, Representative Jerry Costello (D-IL) who introduced the Airline Safety and Pilot Training Improvement Act of 2009, the basis for the Airline Safety and Federal Aviation Administration Extension Act of 2010 explicitly stated, “...Any modification of [the total flight hour requirement] has to be justified as making safety stronger than current ... requirements” (Lowy, 2010,

p. 1). Despite Costello's insistence, Colgan Air, Inc's records for the accident pilot and co-pilot clearly delineate that each exceeded the minimum flight hour requirement with 3,379 and 2,220 total flight hours respectively. In fact, AOPA conducted a review of all fatal part 121 air carrier accidents since 1990 and determined that, "...only one accident (out of 59) was attributable to Human Error in which the First Officer had less than the 1,500 hours total flight time" (Aircraft Owners and Pilots Association, 2010, p. 3).

## CHAPTER 4

### DISCUSSION

This exploratory research suggests that the 1,500 total flight hours mandate in H.R. 5900 will force airlines to reject high-quality AABI-accredited graduates from UAA institutions. This, in turn, may jeopardize the safety of commercial aviation. If this provision remains unchanged potential pilots may enroll in more quick certification schools in lieu of spending "...four years at a college or university paying tuition and flight fees when at graduation they still need to fly for another two years to be qualified to enter an air carrier as a first officer trainee" (Brady, 2009, p.4). As a result, aviation programs at colleges and universities where students build meaningful flight time and gain extensive aeronautical knowledge could close or suffer.

Moreover, if this legislative provision is adopted, a tremendous strain will be imposed on the pilot supply and thousands of well-qualified and highly trained potential first officers will be rebuffed. As indicated in the literature review, there are fewer military pilots available to part 121 air carriers. In addition, foreign hires are limited, ab initio training programs are underdeveloped in the United States and collegiate aviation graduates will be required to spend several years after graduation to complete the flight hour requirement. Therefore, part 121 carriers will be severely paralyzed in terms of pilot hiring once the demand for air transportation rises. Complicating this issue is the fact that airline pilot retirements will begin to accelerate again after 2012, when the first phase of the

“Age 65 Rule” will end. These retirements peak in 2019 as over 2,000 airline pilots will be forced to retire annually and over 38,000 must retire by 2030 (Templeton, 2010). Overall, the industry is in jeopardy of creating serious safety issues as the number of qualified first officer candidates continues to decline.

## CHAPTER 5

### CONCLUSION AND RECOMMENDATIONS

The tragedy of Colgan Air flight 3407 compelled the FAA to revise the dated pilot qualification requirements for part 121 air carriers. Requiring all flight crew members to possess an ATP certificate and the associated 1,500 total flight hours places a severe burden on collegiate aviation and the overall pilot supply. At the time of this writing, the first officer qualification ARC was still investigating the responses from the ANPRM, which concluded in April of 2010. Therefore, the FAA officially delayed the Notice of Proposed Rulemaking (NPRM) with the ARC's proposed recommendations until June of 2011. Despite the delay, there are important conclusions we can draw from the information available.

#### Conclusion 1:

Collegiate aviation programs significantly contribute to the overall pilot supply in the United States. Thousands of students are enrolled in hundreds of accredited programs domestically which require graduates to possess critical aeronautical knowledge and experience necessary for the safe execution of part 121 operations. If the ATP-only provision is adopted with the 1,500 total flight hour requirement, these students and collegiate institutions will undoubtedly suffer. This legislation will require students to endure severe financial setbacks as they will be forced to earn hundreds of additional flight hours after spending thousands of dollars at an accredited flight school. It is recommended that researchers determine prior to the passage of this legislation: (1) the financial

impact of requiring additional flight hours on behalf of the student and (2) appropriate flight time-building structures that further enhance the student's overall piloting competence, skill and knowledge and reduce the prospect of valueless flight hour repetition.

If this legislation is implemented, collegiate flight schools will need to alter their training structure and curriculum to comply with the proposed flight and non-flight requirements. Additional courses devoted to weather theory with greater emphasis on icing prevention, recognition and flight characteristics and human factors including pilot fatigue will be compulsory. It is recommended that researchers determine the financial impact and feasibility of this legislative change required of flight schools by performing the Government Accountability Office study of flight schools and flight education that was recommended in the original bill.

#### Conclusion 2:

Regardless of the passage of this legislation, the pilot supply in the United States is continuing to decrease at an alarming rate. This legislation only aggravates the problem by disqualifying collegiate aviation program graduates from assuming the roles of retiring airline pilots, the fewer volume of military pilots and lack of foreign hires. As a result, part 121 carriers will be forced to employ first officer candidates that did not experience the demand, excellence and rigor of a collegiate aviation program. Furthermore, the passenger demand for air transportation is forecasted to continually increase, but pilot supply levels will be unable to accommodate this expansion. It is therefore recommended that

the FAA continue to investigate the use of a new commercial pilot certificate endorsement which would be required for all part 121 air carrier pilots. Additional research should be conducted to determine if this would benefit commercial aviation by increasing first officer quality and experience.

Moreover, the FAA must recognize the detrimental effect this legislation will impose on collegiate aviation and the overall pilot supply if unchanged. The safety of commercial aviation could suffer and the United States could endure more tragic losses of life similar to those of flight 3407.

## REFERENCES

- Aircraft Owners and Pilots Association. (2010, April 9). *Comments on ANPRM, New pilot certification requirements for air carrier operations* [Public Submission]. Retrieved from <http://www.regulations.gov/#!documentDetail;D=FAA-2010-0100-1312.1>
- Aircraft Owners and Pilots Association. (2009). Let's Go Flying. In *How to choose a flight school/flight instructor*. Retrieved March 27, 2011, from <http://www.aopa.org/letsstoflying/ready/choose/howto.html>
- Air Line Pilots Association. (2010, April 9). *ANPRM on new pilot certification requirements for air carrier operations* [Public Submission]. Retrieved October 21, 2010, from <http://www.regulations.gov/#!documentDetail;D=FAA-2010-0100-1320.1>
- Airline Safety and Federal Aviation Administration Extension Act of 2010, H.R. 5900, 111th Cong. (2010).
- Air Transport Association of America, Inc. (n.d.). *Comments of the Air Transport Association of America, Inc.* [Public Submission]. Retrieved from <http://www.regulations.gov/#!documentDetail;D=FAA-2010-0100-1224.1>
- Ameristar Air Cargo, Inc. (2010, February 25). *Comments on NPRM FAA-2010-010 "new pilot certification requirement for air carrier operations"* [Public Submission]. Retrieved October 22, 2010, from <http://www.regulations.gov/#!documentDetail;D=FAA-2010-0100-0106.1>
- Aviation Accreditation Board International. (n.d.). About AABI. In *Rationale*. Retrieved March 17, 2011, from <http://www.aabi.aero/rationale.html>
- Boeing. (2010, September 15). *Boeing projects requirement for more than one million pilots and maintenance personnel over next 20 years* [Press Release]. Retrieved March 25, 2011, from <http://boeing.mediaroom.com/index.php?s=43&item=1424>
- Boeing. (2010, April 8). *Comments to Docket No. FAA-2010-0110* [Public Submission]. Retrieved October 22, 2010, from <http://www.regulations.gov/#!documentDetail;D=FAA-2010-0100-0934.1>
- Brady, T. (2009, September 23). *Quality not quantity*. Testimony presented at House Aviation Subcommittee, Washington, DC.
- Bureau of Labor Statistics, U.S. Department of Labor, *Occupational Outlook Handbook, 2010-11 Edition*, Aircraft Pilots and Flight Engineers. Retrieved

February 24, 2011, from <http://www.bls.gov/oco/ocos107.htm>.

Cape Air Nantucket Airlines. (2010, March 31). *Response to Advance notice of proposed rulemaking (ANPRM)* [Public Submission]. Retrieved October 22, 2010, from <http://www.regulations.gov/#!documentDetail;D=FAA-2010-0100-0565>

Embry-Riddle Aeronautical University. (2008, March 17). *2010 Pilot source study* [PowerPoint Slides]. Retrieved November 23, 2009, from <http://ntas.erau.edu/proceedings/proceedings-2010.html>

Embry-Riddle Aeronautical University. (2010, April 9). *Advanced Notice of Proposed Rulemaking: Docket No. FAA-2010-0100* [Public Submission]. Retrieved October 21, 2010, from <http://www.regulations.gov/#!documentDetail;D=FAA-2010-0100-1239.1>

Fanjoy, R. O., Young, J. P., & Suckow, M. W. (2006, September). The experience factor: A regional airline view of pilot candidate qualifications. *Collegiate Aviation Review*, 24(1), 67-72.

Federal Aviation Administration. (2011). FAA aerospace forecasts FY 2011-2031. Retrieved February 24, 2011, from [http://www.faa.gov/about/office\\_org/headquarters\\_offices/apl/aviation\\_forecasts/aerospace\\_forecasts/2011-2031/media/FAA%20Aerospace%20Forecasts%20FY%202011-2031.pdf](http://www.faa.gov/about/office_org/headquarters_offices/apl/aviation_forecasts/aerospace_forecasts/2011-2031/media/FAA%20Aerospace%20Forecasts%20FY%202011-2031.pdf).

Federal Aviation Administration. (2010, February 8). New Pilot Certification Requirements for Air Carrier Operations (ANPRM), Docket No. FAA-2010-0100; Notice No. 10-02). Washington, DC: Department of Transportation.

Federal Aviation Administration. (2008). Appendix. In *Pilot's handbook of aeronautical knowledge* (pp. A-1-l-10). Retrieved from [http://www.faa.gov/library/manuals/aviation/pilot\\_handbook/media/PHAK%20-%20Chapter%2001.pdf](http://www.faa.gov/library/manuals/aviation/pilot_handbook/media/PHAK%20-%20Chapter%2001.pdf)

Federal Aviation Administration. (2007, December 14). *FAA statement of pilot retirement age* [Press release]. Retrieved April 11, 2011, from [http://www.faa.gov/news/press\\_releases/news\\_story.cfm?newsId=10072](http://www.faa.gov/news/press_releases/news_story.cfm?newsId=10072)

Federal Aviation Administration. (2006). Choosing a flight school. In *Student pilot guide* (pp. 2-3) [Introduction]. Retrieved from <http://www.faa.gov/library/manuals/aviation/media/faa-h-8083-27a.pdf>

Fiorino, F. (2009, November 30). Quality or quantity. *Aviation Week & Space*

*Technology*, 52-55.

H.R. 5900—111<sup>th</sup> Congress: Airline Safety and Federal Aviation Administration Extension Act of 2010. (2010). In *GovTrack.us (database of federal legislation)*. Retrieved March 25, 2011, from <http://www.govtrack.us/congress/bill.xpd?bill=h111-5900>

International Air Transport Association. (n.d.). *Comments of the International Air Transport Association* [Public Submission]. Retrieved October 21, 2010, from <http://www.regulations.gov/#!documentDetail;D=FAA-2010-0100-1222.1>

Lowy, J. (2010, October 14). Airlines oppose law increasing pilot flight hours. *USA Today*. Retrieved from [http://travel.usatoday.com/flights/2010-10-14-airline-pilot-flight-hours\\_N.htm](http://travel.usatoday.com/flights/2010-10-14-airline-pilot-flight-hours_N.htm)

National Research Council. (1997). *Taking flight: Education and training for aviation careers* (J. S. Hansen & C. V. Oster Jr, Eds.). Washington, DC: National Academy Press.

Pilot shortage: A thunderhead pilots can't duck. (2011, February 15). *Airport Business*. Retrieved from <http://www.airportbusiness.com/online/article.jsp?siteSection=1&id=42833&pageNum=3>

Public Career Initiative. (2010, April 6). *Pilot Career Initiative ANPRM Response* [Public Submission]. Retrieved October 22, 2010, from <http://www.regulations.gov/#!documentDetail;D=FAA-2010-0100-0565>

Regional Airline Association. (2010, April 9). *ANPRM, New pilot certification requirements for air carrier operations* [Public Submission]. Retrieved from <http://www.regulations.gov/#!documentDetail;D=FAA-2010-0100-1222.1>

Smith, G. M., Bjerke, E., NewMyer, D. A., Niemczyk, M., & Hamilton, R. A. (2010, Summer). Pilot source study: An analysis of pilot backgrounds and subsequent success in US regional airline training programs. *International Journal of Applied Aviation Studies*, 10(1), 73-96.

Templeton, P. (2010, December 2). Why aren't there enough airline pilots? Part three [Web log post]. Retrieved from [http://pilotjobs.com/2010/12/02/why\\_arent\\_there\\_enough\\_airline\\_pilots\\_part\\_three/](http://pilotjobs.com/2010/12/02/why_arent_there_enough_airline_pilots_part_three/)

Templeton, P. (2011, February 16). FAA forecasts one billion US passengers flying by 2021 [Web log post]. Retrieved from <http://pilotjobs.com/2011/02/16/faa-forecasts-one-billion-us-passengers-flying-by-2021/>

The Coalition of Airline Pilots Associations. (2010, April 9). *Comments on*

*NMRPM FAA-2010-0100 "New pilot certification requirements for air carrier operations"* [Public Submission]. Retrieved October 22, 2010, from <http://www.regulations.gov#!documentDetail;D=FAA-2010-0100-0671.1>

University Aviation Association (Ed.). (2008). *Collegiate aviation guide: Reference of collegiate aviation programs* (5th ed.). Auburn, AL: University Aviation Association.

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