THE NEW FAA ATP REQUIREMENT AND PILOT STAFFING
CONSIDERATIONS FOR COMMERCIAL AIRLINES
AND TRAINING INSTITUTIONS

By

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An Abstract
Of a thesis submitted in partial fulfillment
Of the requirements for the degree of
Education Specialist
In the Department of Aviation
University of Central Missouri

January 2012
ABSTRACT

By

Jeanyves D. Preudhomme

Regional and major US airlines have, in the past, hired their pilots from a variety of backgrounds, requiring varying degrees of experience, based mainly on their immediate staffing needs. Addressing a public demand for greater levels of professionalism in the cockpit, the US Congress and the Federal Aviation Administration have recently raised the commercial pilot flight experience minimums, with which airlines have to comply, to 1,500 hours of total time. This new rule, which also requires pilots applying at airlines to hold an Airline Transport Pilot Certificate, presents airlines around the world with an unprecedented dilemma: a shortage of qualified pilots at a time when a record number of pilot retirements are taking place. Airlines, the FAA and training institutions offering professional pilot degree programs are working together to adjust to this rule and provide the pilots necessary to staff the flights.
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ACKNOWLEDGEMENTS

I would like to thank my committee for their support and kindness in helping me complete this thesis. Specifically, I am grateful for the Chair of my committee, Dr. William B. Rankin II, A.A.E for his guidance, Dr. John Horine for his valuable inputs and readiness to share his experience, James T. Wrigley for his friendship, his coaching, and his enthusiasm in sharing his expertise in his undertaking. I would like to thank Dr. Bart Washer for his belief in my abilities, Dr. David Kreiner, of the UCM Psychology Department, and Ms. Carmen Dotson for their professional assistance. I am grateful for my father, Max Preudhomme for his continual encouragement and support, my brother, Eric Preudhomme, professor of the ISEL statistical engineering institute of Le Havre, France, for his invaluable help in the field of data, statistics, and graphs. I would like to thank my son, Kody Preudhomme, whose positive energy, unwavering support, and friendship inspires me daily to do my best.
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CHAPTER 1
INTRODUCTION

Background of the Study

Starting in 2013, the FAA will be implementing HR 5900, passed by the US Congress in 2010, requiring airline pilots to hold an Airline Transport Pilot Certificate, implying that even pilot applicants at regional and major airlines will have to have accumulated 1500 hours of flight time before being considered for employment. While this rule may not present a challenge in times where airlines are experiencing moderate growth levels, the current situation of unprecedented retirements and expansion is expected to cause severe shortages of qualified pilots in hiring pools of regional airlines, the primary employers of low time pilots. This could result in massive reductions of flights, leaving passengers with minimum travel options, and stunted growth for the airline industry. The financial implications of extended flight training for pilots are also significant (FAA 2010).

Statement of the Problem

The problem is how to remedy the unprecedented shortage of qualified pilot applicants in the face of historical retirement levels and industry growth expectations, with the simultaneous implementation of the new rule.

Purpose of the Study

The purpose of this study is to shed light on this new rule for enhanced pilot experience in the cockpit and to address ways for the industry to match their flight schedules with the availability of qualified pilots. To provide regional and major airlines with experienced cockpit crews at a time when retirements at major airlines are historically high, pressure is put on training institutions to produce qualified applicants...
and on student pilots to invest thousands of additional dollars in flight training. This study will examine how this unprecedented demand for relatively high time pilot applicants will be addressed by airlines and training institutions.

Research Questions

This study will address two questions regarding upcoming pilot staffing challenges.

1. How are regional airlines planning to adjust to the immediate shortage of qualified pilot applicants?

2. How are training institutions with professional degree programs preparing for an expected substantial increase in pilot training?

The Hypotheses

1. Regional airlines will be unable to staff some of their flights and will have to resort to substantial reductions in flight schedules.

2. Training institutions will have to develop the use of FAA approved Flight Training Devices and Simulators to expedite training and minimize costs for students.

Definitions of Terms

The following terms and definitions will be used in this study:

*FAA Commercial Certificate*: License issued to a pilot who has passed an oral and practical exam in a single engine or multi-engine aircraft and has accumulated 250 hours of total flight time including a specific combination of cross country flights, basic instrument training and complex systems (FAA 2011).
**Flight Training Device (FTD):** A replica of aircraft instruments, equipment, panels, and controls in an open flight deck area or an enclosed aircraft cockpit replica. It includes the equipment and computer programs necessary to represent aircraft (or set of aircraft) operations in ground and flight conditions having the full range of capabilities of the systems installed in the device as described in part 60 of the Federal Aviation Regulations, and the qualification performance standard (QPS) for a specific FTD qualification level (FAA 2011).

**Flight Deck Crew:** Pilots

**Load Factor:** The amount of passengers or cargo an aircraft carries as a percentage of total possible capacity.

**Simulator:** Enhanced Flight Training Device with motion in three axes (FAA 2011).

**Scope and Delimitations of the Study**

The following delimitations are presented for this study:

1. Airlines surveyed are all headquartered within the United States.
2. The Survey instrument asks management at chosen airlines to submit expectations of the need for pilot seats to be filled in the coming years, based on the airline’s expected growth.

**Assumptions**

The following assumptions are presented in this study:

The major airlines have already efficiently trimmed their fleets to increase load factors and profits, following the economic downturn of 2008. Major airlines are now
operating at record capacity levels, and will not reduce seat capacity significantly in the next ten years.

Potential mergers and bankruptcies will not significantly decrease the seats available to passengers

Summary

The pilot training facilities in the United States, within university programs or at various flight academies have, for decades, been able to cater to the airline industry’s cockpit staffing needs. Recent changes in the Federal Aviation Regulations, aimed at preventing accidents attributed to inexperienced flight crews, are significantly increasing the entry-level minimums for airline pilots. These raised minimums engender an increase in the need for training facilities, a significant increase in the student pilot budget, and a challenging dilemma for airlines seeking to replace their retiring groups of aging pilots. If we are to meet the flying public’s needs effectively and safely, we must be able to concurrently respond to the airlines staffing demands while enhancing the flight crews’ professionalism.
CHAPTER 2
REVIEW OF RELATED LITERATURE

Pilot Shortage

The FAA is anticipating an increasing shortage of qualified commercial pilots, those holding an Airline Transport Pilot certificate, in the United States. This shortage is estimated to reach 10,000 in 2013 and 44,000 in 2028 (Duggar et al. 2010). These estimates, confirmed by Boeing and Airbus are likely to cause severe disruptions and even cancellations of flight schedules on a large scale. Australia, Brazil, Russia, Saudi Arabia are experiencing shortages of pilots, due to extensive route expansions and retirements of older pilots, Flight International (2007, 2008, 2009, 2010, 2011). China is developing its economy and its transportation system along with it. Its need for thousands of additional commercial pilots and air traffic controllers is unprecedented and cannot be met by the training facilities currently in place (Zanger 2006). Since 2003, the airlines have worked diligently to remain afloat, some declaring bankruptcy in order to re-organize and resume business under more favorable conditions, some avoiding such fate at the expense of voluntary sacrifices among employee groups. In order to trim excess expenditures, increase fuel savings and fill up aircraft, schedules are being improved and fine tuned, adjusting more flexibly to specific market demands. Models can be developed to ensure greatest possible adjustability to markets and minimize disruptions to the flying public, Rosenberger, et al. (2003). Maximizing the efficiency of the National Airspace System (NAS) is also a work in progress requiring the establishment of models and consideration of various elements facing flight operations such as weather constraints, military airspace limits, airport curfews, air traffic controller workloads and safety issues (Sherali et al. 2003).
Major airlines have generally hired their pilots from a steady supply of regional airline captains and first officers having acquired enough experience and flight time to meet the minimums imposed by the majors. Regional airlines, however, are about to face a drying supply of high time pilots, generally flight instructors, who previously accumulated hours at flight schools, waiting for the aviation industry to improve and jobs to open up. With the newly anticipated FAA requirement for all airline pilots to hold an Airline Transport Pilot certificate with a minimum of 1,500 of flight time, however, regional airlines will not be able to staff their flights adequately. Eventually, regional airlines will be unable to supply the major airlines with their dwindling pilot numbers. Majors will then be confronted with the need to train pilots themselves in Ab Initio (from the beginning) pilot programs, which train a pilot from having little to no flight time, all the way up to an Airline Transport Pilot certificate, an extremely expensive proposition for the airline. Some airlines, mainly overseas, are currently opting for this type of training, principally for quality control and consistency of pilot experience. While some charge the pilots for a portion or the entirety of the flight fees, the upcoming rising demand for pilots will likely place the entirety of the training costs on the airlines themselves (Duggar et al. 2010).

Training institutions which normally cater to regional airline hiring needs, such as 4-year accredited aviation colleges have been sensitive to the increases in flight training costs, due primarily to rises in fuel and liability insurance costs. To lower the financial burdens on students, some colleges have invested in the acquisition of simulators and Flight Training Devices. The use of these devices as a substitute for actual flight time enables a certain amount of flight training requirements to be completed at reduced cost.
Flight Training Devices are also immune to inclement weather and ensuing flight training cancellations. Not all of the pilot experience requirements however can be obtained in a Flight Training Device. There is ultimately no substitute for actual flight time and exposure to reality (Duggar et al. 2010).

**Training qualified pilots**

In their research, Vasigh and Helmkay (2000) discovered that safety standards at regional and major airlines varied widely. Following the Colgan Air Crash of February, 2009 in Buffalo, New York, which was largely attributed to inadequate cockpit procedures, the FAA has been looking at improving safety via flight and duty time enhancements for flight deck crews, Fiorino (2009, 2010). Flight Crews need to have guaranteed and adequate rest periods, as well as a voluntary reporting program with no negative impact. This particular accident highlighted the need for improvement in working conditions for pilots as well as increase scrutiny into pilot training records. It also brought about the call for consistency of standards for all commercial airlines in the US, whether regional or major. Sparaco (2009) mentions that the International Civil Aviation Organization, or ICAO, the governing body for all airlines around the globe is focusing on propagating a safety culture for all air carriers. While most airlines share similar operating rules, the necessary focus on safety is not consistently obvious.

Phillips (2002) explains how the FAA has been changing the way pilots are trained by using a wide range of products from PC based to full motion simulators. According to Lynch (2011), the FAA is now requiring that training curricula include simulation training with an emphasis on application of skills and judgment, not simply performance of maneuvers. This degree of maturity and improved decision-making
comes with greater practice of realistic scenarios, which can be tailored in the simulators or Flight Training Devices. Loss of Control as the leading cause of crashes has replaced controlled Flight Into Terrain (CFIT) in recent year, Flottau (2011). While it is obviously impossible to replicate out of control scenarios in the actual aircraft, for safety reasons, the simulators and training devices lend themselves particularly well to this type of event.

Distractions, widely present in the day-to-day operations of an airline, are negatively affecting the quality of training. Allerton (2002) and Dahlstrom (2008) point out the importance and relevance of simulation in flight training curricula in order to focus on skills acquisition and practice of complex and sometimes unusual maneuvers. Dahlstrom also states that the simulator instructor’s options to stop a lesson, repeat a maneuver and review procedures make the training device a superior tool when compared to the limited scope of the actual aircraft for training purposes. At some point in the course of simulator training, stress can be purposefully introduced to develop stress coping mechanisms that enhance flight performance during unusual attitude or upset recovery training, Crider (2010). According to McClernon et al. (2011), introducing unusual situations in the simulator result in consistent performance improvements among pilots. This finding applies to general aviation operations as well as to professional settings.

Rolfe and Hampson (2003) caution simulator users to keep the training device’s limitations in mind. While the tool affords ample opportunities for scenario based events and maneuvers, the stresses and distractions, inherent to line flying can be altogether different to the controlled environment of the rehearsed simulator experience. Line Operation Safety Audits (LOSA), conducted in the aircraft during normal operations will
always be an integral part of accident prevention and study of risks, Tullo (2010). Cioffi (2010) indicates that expensive full motion simulators are not superior to their fixed, less expensive counterparts when it comes to stall recovery maneuvers. Even considering the simulator’s limitations, flight training in a controlled environment, which allows set up for abnormal maneuvers, enables research and discovery of weaknesses not easily revealed in actual situations, Huttunen et al. (2011).

In its New Pilot Certification Requirements for Air Carrier Operations, FAA (2010), the Federal Aviation Administration outlines the new requirements for pilot experience in Part 121- Air Carrier- operations. The new requirement was the direct result of the Colgan Air crash in Buffalo, NY in February of 2009. Following the crash, the FAA questioned whether the co-pilot at a regional carrier, typically a pilot with relatively low flight time, can adequately respond to challenging weather situations. To address this lack of exposure and experience, the FAA rule mandates that pilots be in possession of an Airline Transport Pilot Certificate when they begin their work for any airline operating under Part 121. Co-pilots of air carriers are currently only required to hold a commercial license with an instrument rating, both of which can be obtained at 250 hours of flight time. According to FAR 61-159, Gleim (2011), to obtain the Airline Transport Pilot Certificate, a pilot needs to have accumulated 1,500 hours of flight time, 500 hours of cross-country flight time, 100 hours of night flight time. 75 hours of instrument flight time, in actual or simulated instrument conditions. A maximum of 50 hours of training in a flight simulator or flight training device may be credited toward the instrument flight time requirements if the training was accomplished in a course conducted by a training center certificated under part 142. Training in a flight simulator
or flight training device must be accomplished in a flight simulator or flight training
device, representing an airplane. A pilot already working for an airline can also log 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 100 hours of cross-country
flight time and 25 hours of night flight time. In this case, not more than 100 hours of the
total aeronautical experience requirements 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. At this time, the FAA is considering the possibility of granting waivers to
pilots who have graduated from accredited 4-year aviation degree programs, certified
flight instructors, and for pilots currently working at an airline. The waivers would be
dependent upon an additional amount of instruction received with the commercial
certificate. The commercial certificate would include an endorsement specifying that the
training received included additional exposure to more demanding situations. The latter
waiver would only be valid for the specific airline as long as the pilot’s hours total less
than 1,500. If the pilot left that airline, the waiver would no longer be valid.

Cost benefits of Flight Training Devices and simulators

Considering the upcoming shortage of qualified pilots available for initial hire
positions with airlines, FTDs provide training institutions with relatively low acquisition
and upkeep costs. With increased focus on safety and experience, as evidenced by the
new ATP requirement for all pilots of air carriers, it is evident that airlines will expect
new hires to be familiar with the transport aircraft category systems and operations.
Simulators and Flight Training Devices can affordably bridge the experience gap between college and the professional environment, Macchiarella, Arban, Doherty (2006). To respond more quickly and to meet industry’s demands more accurately, collegiate professional pilot programs can position themselves to offer their students the tools to succeed in today’s demanding and dynamic aviation marketplace.

Flight Simulators have been ranked as one of the five leading technologies that has affected the aviation industry over the last 50 years (Gormley, Garvey 2008). With the increasing fixed and variable cost associated with aircraft operation, the use of simulation will continue to be an attractive alternative to training in the aircraft itself. Portable simulators were already used early in the decade, Fiorino (2004), for their obvious training benefits and cost advantages.

Because of the relatively high initial expenditure and ensuing low variable cost, when compared to an aircraft, the training device makes even greater financial sense with the high use. The 737-800 aircraft costs an average of $80,000,000, Boeing (2010). According to ICAO, the baseline hourly cost of operation for the average 737 model is $2,000.00 (ICAO 2000). In comparison, full motion simulators cost from one to more than 15 million dollars based on the specific aircraft demand, while a 737 Flight Training Device averages $350,000 to $500,000 and can rent out for about $100 per hour per seat.

Most airlines training departments, staffed with dedicated maintenance crews operate several full motion simulators 20 hours a day, seven days a week. Some carriers rent out their devices to other airlines with or without instructors. Such maximized use enables operators to generate substantial return on their devices while fulfilling their own
training needs. An hour of full motion simulator rents out for an average of $400 varying with the aircraft.

Summary

Substantial growth in commercial aviation traffic is uniformly and universally anticipated for the upcoming decade (Zanger 2006). Several technical and logistical improvements are taking place in airline scheduling, Air Traffic Control procedures and the National Airspace System, in order to better utilize the human resources available (Rosenberger et al. 2003). Coupled with this significant expansion is a looming shortage of qualified pilots for the traditional commercial pilot training grounds: the Regional carriers and the flight schools (Duggar et al. 2010). This shortage is brought upon by unprecedented retirements of older pilots, and the upcoming enactment of a rule proposed by the US Congress. This rule, initiated as HR5900, inspired by a public demand for greater experience in the cockpit, proposes to increase the flight time minimums for pilot applicants at commercial airlines (Fiorino 2009, 2010).

To adequately meet this anticipated shortage of qualified pilots, some major training institutions are taking ownership of the problem and looking into financially viable solutions for pilot training (McClernon et al. 2011). The use of simulation partly offsets the costs of flight training, which have increased greatly in the last decade mainly due to increases in the cost of fuel (Gormley, Garvey 2008). The growing use of Flight Training Devices at various stages of training allows students to study scenarios that cannot be replicated in the actual aircraft for safety reasons, such as unusual attitude recovery, multiple emergencies, fires, etc. In their study, Allerton (2002) and Dahlstrom (2008) point out the usefulness and practicality of the simulator in the course of an airline
pilot’s training. Crew Resource Management emphasis is the collateral benefit of the use of simulation. With realistic scenarios in Line Oriented Flight Training events, replications of actual airline flights expose pilots in training to various situations that demand greater reliance on standardized crew procedures. Crews can study complex scenarios and events in greater depth, repeating maneuvers and critique their performance, without the pressures of maintaining a schedule of flights.

Simulation also represents a significant cost savings for operators and users alike. Tullo (2010) and Cioffi (2010) indicate that non-motion Flight Training Devices, which are more affordable for aviation colleges and medium size flight schools than their full motion counterparts at major airlines. Flight Training Devices offer high quality training options, however, by enabling exposure to any scenarios faced by pilots in the course of their career. While the final check ride has to be taken in a full motion simulator, Flight Training Devices can be used for the bulk of the preliminary training and require only a fraction of maintenance upkeep, when compared to the full motion simulators.

Bearing in mind the usefulness of simulation, time in the actual aircraft is a necessity for a well-rounded training curriculum (Duggar et al. 2010). In their study, Rolfe and Hampson (2003) explain that the stresses and demanding situations present only in actual operations cannot be completely replicated in simulators, which tend to remove the element of reality in the mind of users.

With the significant increase in pilot time required to fly for an airline, from an average of 500 hours to the proposed 1,500 hours, the use of simulation is expected to be increasingly attractive financially and logistically for pilots, training institutions and airlines (Macchiarella, Arban, Doherty, 2006).
CHAPTER 3
METHODOLOGY

Overview

The purpose of this thesis is to study the consequences of the new rule, HR 5900, requiring airline pilot applicants to possess an Airline Transport Pilot Certificate. In a continuing effort to promote safety, and to respond to public pressure for more experience in the cockpit, Congress is asking the FAA to mandate higher levels of experience for pilot applicants at all airlines operating under U.S. regulations, starting in 2013. Simultaneously, airlines are faced with an unprecedented amount of retirements from aging pilots. The staffing challenges pose a significant scheduling problem for the regional airlines, which traditionally hire low time pilots. It also offers training opportunities for flight academies and colleges, which strive to keep the additional training and flight time requirements within the financial reach of student budgets. This thesis offers insights on the airlines and training institutions’ plans to produce qualified crews.

Population and Sample

The population was selected U.S. regional airlines and institutions with professional pilot degree programs. The five regional airlines selected are operating under the US Federal Aviation Regulations Part 121 rules, applying to scheduled air carriers, and having at least 150 pilots actively employed. The six institutions selected are six four-year accredited colleges or universities with at least 100 students enrolled in their professional pilot program.

Research Design

A quantitative research design was used based on the descriptive model.
Data Collection Instrument

The data collection instrument used was a descriptive survey, emailed to the airlines and training institutions. This survey was designed to evaluate the specific airline’s plans to meet their staffing needs, and the institution’s actions to cater to the increased training requirements.

Data Collection Methodology

Data were collected by email surveys to specific airlines and institutions providing professional pilot degree programs.

Data Analysis Methodology

The analyzed data should confirm or disprove the research hypotheses. As only a sample group of airlines and a sample of institutions are being surveyed, descriptive analyses are drawn. Data are analyzed in the form of a frequency distribution.

Summary

This study is a quantitative, descriptive research. A selected sample was chosen for the study. The data collection instrument was a survey using frequency distribution. The data were collected by emails to selected regional airlines, and U.S. institutions that offer professional pilot degree programs. The results of the survey were collected and analyzed statistically to support or not support the hypotheses. No test of significance was performed.
CHAPTER 4
RESULTS

To test the hypothesis that regional airlines will be unable to staff some of their flights and will have to resort to substantial reductions in flight schedules, data were collected from five regional airlines and displayed as a frequency distribution.

The airlines were asked about their staffing needs. Specifically, they were asked how many of their pilots were expected to retire in the next year, how many new pilots they planned to hire, how many hours of flight time their new hires had on average, what percentage of their current pilots already had the 1,500 hours and Airline Transport Pilot certificate soon to be required by law. Airlines were also asked where most of their pilot recruits came from and whether they expected to have to cancel flights in the next year, due to potential pilot shortages.

The results indicated that the majority of these typical regional airlines anticipate hiring at least 100 pilots in the next year. All of them expected less than 50 of their pilots to retire. They indicated that most of their new hires have less than 1500 hours of flight time, and therefore do not have an Airline Transport Pilot Certificate. Despite this, 80% do not expect having to cancel flights due to pilot shortages in the next year.
**Number of Pilots Expected to be Hired Within the Next Year**

![Bar chart showing the frequency of pilots hired within the next year.](chart1)

**Number of Pilots Expected to Retire in the Next Five Years**

![Bar chart showing the frequency of pilots retiring in the next five years.](chart2)

**Average New Hire Pilot Flight Time**

![Bar chart showing the average flight time for new hire pilots.](chart3)
**Percentage of Pilots on Staff with an Airline Transport Pilot Certificate**

![Bar chart showing the percentage of pilots on staff with an Airline Transport Pilot Certificate.

**Current Recruitment Sources for Pilot Staffing**

![Bar chart showing the current recruitment sources for pilot staffing.

**Likelihood of Canceling Flights in the Next Year Due to Pilot Shortage**

![Bar chart showing the likelihood of canceling flights in the next year due to pilot shortage.
To test the hypothesis that training institutions will have to develop the use of FAA approved Flight Training Devices and Simulators to expedite training and minimize costs for students, data were collected from six training institutions and displayed as a frequency distribution.

The institutions were asked about their number of students enrolled in the Professional Pilot Degree Program and their number of pilots who will have an Airline Transport Pilot Certificate upon graduation. Institutions were also asked whether they were working with the FAA on an ATP waiver program, whether they were offering training in Flight Training Devices to optimize output and minimize cost. They were asked if students were encouraged to go into flight instruction to build additional flight hours, and whether the institution was doing anything else to increase their professional pilots’ flight time before graduation. Results showed that most training institutions will not graduate professional pilots with an Airline Transport Pilot Certificate in the next year, but that within the next five years, most institutions expected to graduate ATP certificate holders. Results also showed that while most institutions are not working with the FAA to obtain waivers for flight time reductions, they are actively encouraging their pilots to flight instruct. Most institutions are involved in other activities aimed at increasing student flight time and 83% are currently using flight-training devices in their training curriculum.
**Number of Pilots Enrolled in the Professional Pilot Program**

<table>
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<th>100-200</th>
<th>200-300</th>
<th>300+</th>
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**Number of Students in the Professional Pilot Program Expected to Have an ATP upon Graduation by Next Year**

<table>
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<th>Frequency</th>
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<th>10-50</th>
<th>50-100</th>
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<td>1</td>
<td>6</td>
<td>2</td>
<td>1</td>
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**Number of Students in the Professional Pilot Program Expected to Have an ATP upon Graduation within the Next Five Years**

<table>
<thead>
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<th>Frequency</th>
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<th>10-50</th>
<th>50-100</th>
<th>100+</th>
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<tr>
<td>0</td>
<td>2</td>
<td>1</td>
<td>1</td>
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Efforts Underway to Obtain Waivers from the FAA for Graduates of Professional Pilot Programs

Use of Simulator or Flight Training Device to Offset Cost and Optimize Training

Encouraging Students to Engage in Flight Instruction to Increase Hours
Institution Involvement in Other Activities to Increase Professional Pilot Flight Time upon Graduation
CHAPTER 5
DISCUSSION

The first hypothesis was that regional airlines would be unable to staff some of their flights and would have to resort to substantial reductions in flight schedules.

The airlines were asked about their staffing needs. Specifically, they were asked how many of their pilots were expected to retire in the next year, how many new pilots they planned to hire, how many hours of flight time their new hires had on average, what percentage of their current pilots already had the 1500 hours and Airline Transport Pilot Certificate soon to be required by law. Airlines were also asked where most of their pilot recruits came from and whether they expected to have to cancel flights in the next year, due to potential pilot shortages.

The results indicated that the majority of these regional airlines anticipate hiring at least 100 pilots in the next year. This confirms the expansion expected industry wide. All airlines expected less than 50 of their pilots to retire. This can be explained by the fact that Regional carriers typically have younger pilots in the early stages of their careers. The airlines indicated that most of their new hires have less than 1500 hours of flight time, and therefore do not have an Airline Transport Pilot Certificate. Despite this, 80% do not expect having to cancel flights due to pilot shortages in the next year. In my 20 years of professional flying for various airlines, I have witnessed a consistent reluctance among airline management to make long-term predictions. Flexibility and timely response to public travel demand is paramount to the airline’s survival. This situation is unprecedented however, and the survey results clearly betray a flight time gap between the new average hire total flight hours and the soon to be required ATP minimums. This hypothesis must be rejected.
The second hypothesis was that training institutions would have to develop the use of FAA approved Flight Training Devices and Simulators in order to expedite training and minimize costs for students. This hypothesis must be accepted.

The institutions were asked about their number of students enrolled in the Professional Pilot Degree Program and their number of pilots who would likely have an Airline Transport Pilot Certificate upon graduation. Institutions were also asked whether they were working with the FAA on an ATP waiver program, whether they were offering training in Flight Training Devices to optimize output and minimize cost. They were asked if students were encouraged to go into flight instruction to build additional flight hours, and whether the institution was doing anything else to increase their professional pilots’ flight time before graduation. Results showed that most training institutions would not graduate professional pilots with an Airline Transport Pilot Certificate in the next year, but that within the next five years, most institutions expected to graduate ATP certificate holders. This reflects an awareness of the upcoming challenge in flight time requirements. Universities with college flight programs are anticipating the flight time gap and are attempting to increase their students’ flight time to meet the requirements outlined in HR 5900. Results also show that while most institutions are not working with the FAA to obtain waivers for flight time reductions, they are actively encouraging their pilots to flight instruct. Most institutions are involved in other activities aimed at increasing student flight time and 83% are currently using flight-training devices in their training curriculum. In the past decade, the airline industry has experienced hiring booms and massive furloughs in rapid successions. Multiple factors such as fuel costs, economic health, consolidations, mergers, bankruptcies, are influencing their staffing
needs. In order to remain competitive in a post-deregulation world, airlines must adapt quickly in an ever-changing environment. The Federal Aviation Administration is in the process of modifying rest rules for pilots, which will also have a significant impact on pilot staffing. At major US carriers, it is expected that 1,000 additional pilots will be needed to simply fly the current schedule with the new rest requirements.

The author suggests expanding this study to an international scope. It is expected that US airlines will gradually resort to Ab-Initio training now widely in use at foreign airlines (Duggar et al., 2010). This process guarantees the consistency, quality and standardization of the training curriculum, but also provides the airlines with a predictable source of qualified pilots. While such training costs are initially borne by the airlines, contracts with trainees are usually established to offset the company’s investment in the pilot.
REFERENCES


Cioffi, M. (2011, June 13). Motion is better? There is no proof. Aviation Week & Space Technology v. 173 no. 21, 58.


APPENDIX A

IRB Approval Letter
APPENDIX B

Airline Survey

This survey will ask you to estimate your company’s cockpit crew staffing needs and the crew qualifications of current new hires. Please read each individual question and circle the answer that fits best.

How many pilots total do you anticipate needing to hire next year?

- <50
- 50-100
- 100-300
- 300+

How many of your pilots are expected to retire in the next 5 years?

- <50
- 50-100
- 100-300
- 300+

What is the average number of flight hours of your new pilots?

- <300
- 300-500
- 500-1000
- 1000+

What percentage of your new pilots already have an ATP?

- <10%
- 10-30%
- 30-75%
- 75%+

Where do you recruit most of your new pilots from?

1. Other US airlines
2. Foreign airlines
3. Flight Instructors
4. Military

Do you expect to have to cancel flights in the next few years due to shortage of pilots?

1. yes
2. no
APPENDIX C

Training Institution Survey

This survey will ask you to gauge how your institution is planning on training pilots to meet the new FAA rule requiring all airline crewmembers to possess an ATP. Please read each individual question and circle the answer that fits best.

How many pilots are currently enrolled in your professional pilot degree program?
100-200  200-300  300+

How many of your professional pilot students will have an ATP upon graduation next year?
<10  10-50  50-100  100+

How many of your professional pilot students do you expect will have an ATP upon graduation in the next 5 years?
<10  10-50  50-100  100+

Is your institution working with the FAA to obtain flight hours reduction waivers for professional pilot students of university affiliated flight schools?

Is your institution offering simulator or Flight Training Device sessions for students as reduced cost options to fill some ATP hour requirements?

Is your institution actively encouraging professional pilot students to go into flight instruction in order to acquire needed hours and to train more students?

Is your institution doing anything else to increase pilot hours before graduation?