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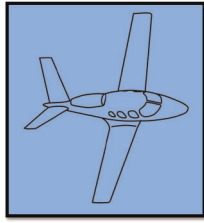
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## Airline Pilot Supply in the US: Factors Influencing the Collegiate Pilot Pipeline

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### Abstract

In the era following the First Officer Qualification (FOQ) rule change, regional airlines are struggling to meet hiring needs. Prior to the rule change, pilots were willing to fly for regional airlines at low pay as a stepping-stone to a career at major airlines. Since the rule change, higher minimum qualifications requiring a greater investment for aspiring pilots appear to have impacted the appeal of this career path. This study explores that claim with the purpose of understanding the impact of the FOQ rule change on the career aspirations of collegiate aviation flight students and examining student perceptions of the regional airline career path. To address these issues, a survey of collegiate aviation flight students was conducted. The results showed that the FOQ rule change has negatively impacted the airline pilot career plans of a portion of collegiate aviation students. The primary concerns voiced were the increased time and investment needed to meet the new requirements and the negative perceptions of the regional airline career path. Regarding perceptions of the regional airline path, pay was consistently the top concern of aspiring pilots, followed by quality of life factors and the desire for a clear path to the major airlines. In addition, large numbers of aspiring pilots indicated that they are willing to fly overseas for better career opportunities. These results provide new insight into multiple factors influencing the collegiate pilot pipeline.

*Keywords:* pilot shortage, Public Law 111-216, first officer qualifications, collegiate aviation flight programs, regional airline industry

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### Introduction

Since the First Officer Qualification (FOQ) regulatory change (FAR 121.436), regional airlines have struggled to meet hiring demands. Historically, the regional airline industry has been a stepping-stone for pilots pursuing major airline careers. Prior to the rule change, pilots could reach that goal with a commercial pilot certificate as the minimum qualification. Regional airlines have previously been able to meet hiring needs with such pilots willing to fly for relatively low salaries. Following the rule change, however, the minimum requirements increased significantly including a higher number of flight

hours, leading to a one- to two-year delay in reaching the regional airline minimum qualifications. In the post-FOQ rule environment, higher minimum pilot qualifications requiring a greater investment of time and money by the aspiring pilot, combined with the perception of low starting salaries, appears to have impacted the pilot supply. This study explores that claim and examines the impact of the FOQ rule change on the pilot supply from the perspective of collegiate aviation flight students. In addition, student perceptions of the airline pilot career path are explored through an examination of what motivates students to target one regional airline over another for employment. A survey of current students and recent graduates in US collegiate aviation programs belonging to the University Aviation Association (UAA) and Aviation Accreditation Board International (AABI) was the methodology developed to address these questions. Topics explored include pay, pilot pathway programs, role of bonuses, and willingness to fly overseas. The results provide new insight into the impact of the FOQ rule on the collegiate pipeline for the pilot supply and reveal student perceptions of the regional airline industry career path.

## Review of Literature

### *The First Officer Qualification (FOQ) Rule Change*

On July 15, 2013, the Federal Aviation Administration (FAA) published the final rule for FAA Pilot Certification and Qualification Requirements for Air Carrier Operations. The new regulation was issued in response to the Colgan Air 3407 crash in February 2009. The rule (FAR 121.436), commonly referred to as the First Officer Qualification or FOQ rule, requires all second-in-command pilots (first officers) to hold an Airline Transport Pilot (ATP) certificate, requiring that a pilot be 23 years of age and have 1,500 hours total flight time (FAA, 2013a). In addition, prior to completing the ATP, pilots must complete the newly added Airline Transport Pilot Certification Training Program (ATP CTP) (AOPA, 2013). Additional changes include 50 hours of multi engine experience for the ATP and a type rating is required for second-in-command pilots flying under FAR part 121 (AOPA, 2013). Prior to the rule, the requirement for a first officer was a commercial certificate with 250 flight hours.

The rule was issued with a compliance date of August 1, 2013. In addition, the rule provided for pilots to serve as first officers with “restricted” ATP (R-ATP) privileges under certain conditions. This allows for a pilot to be eligible to fly as a first officer under FAR part 121 with a reduction of the total time requirement of 1,500 hours and a reduction of age to 21. Total flight time requirements for an R-ATP are:

- 1,000 hours for a graduate from an approved university R-ATP bachelor’s degree program with at least 60 semester hours of aviation coursework
- 1,250 hours for a graduate from an approved university R-ATP associate’s degree program or bachelor’s degree with at least 30 semester hours of aviation coursework
- 750 hours for military pilots (FAA, 2013b)

As of March 2016, there were 74 approved R-ATP university programs in the US, with 55 schools offering R-ATP bachelor degree programs (FAA, 2016).

### *Pilot Supply in the US*

Multiple studies have been conducted to determine the state of the pilot supply in the US. Forecasts vary, with predictions from 1,900 to 4,500 pilots needed per year (GAO, 2014). The Boeing Market Outlook for 2015–2034 projects that 588,000 new commercial airline pilots will be needed around the world over the next 20 years; the report refers to this number as “unprecedented” (Boeing, 2015). The largest area for projected growth will be the Asia Pacific region, requiring 226,000 new pilots over the next 20 years, while Europe and North America will each require an estimated 95,000 new pilots over the same time frame (Boeing, 2015).

Concerns over the ability to meet such demand include factors such as major airline pilot retirement rates, high cost of training, decreasing number of new pilots, perception of the desirability of the airline pilot career path, and international competition for US talent. More than 18,000 pilots will be retiring at the top four major airlines in the US in the next ten years (RAA, n.d.). That is more than the number of pilots currently employed at regional airlines, the primary hiring source for major airlines (RAA, n.d.). According to Michael McGee, author of a 2015 RAND report on pilot supply “even if there is zero growth at the majors, you’re still going to see a significant hiring increase that will last for the next 15 years” (Tallman, 2015, para. 6). McGee further noted that the “longevity of this predicted hiring spree is something the industry has never experienced” (Tallman, 2015, para. 6). Since the major carriers traditionally hire from the ranks of regional airline pilots, this contributes to the pilot supply issues at regional carriers. For example, at American Airlines, 65% of newly hired pilots since 2010 came from Envoy (Airline Pilot Central, n.d.). The FAA data indicates a shrinking pilot population, with the number of student pilots expected to decrease at an annual average rate of 0.20 percent between 2014 and 2034 (FAA, 2014a). Further, it is estimated that nearly 50% of student pilots do not complete training (Pasztor, 2015). According to George Perry, Senior Vice President of the AOPA Air Safety Institute, general aviation is experiencing a pilot shortage (Perry, 2015), and the GAO (2014) noted in their report that the number of new Certified Flight Instructors (CFIs) remains flat. With the new FOQ rule, becoming a CFI to build the necessary flight hours remains the standard career path for civilian pilots pursuing airline

pilot careers. Additionally, the GAO (2014) noted that the military now only provides about 30% of airline pilots as compared to a previous high of about 70%.

Supply and demand concerns have led to an industry-wide discussion over the current and future potential pilot shortage. Some in the industry take a different view of the pilot supply problem. According to the Air Line Pilots Association (ALPA), “there is no current shortage of qualified pilots in this country. There is, however, a pay and benefits shortage for qualified pilots” (*Air Service to Small and Rural Communities*, 2014c, p. 2). In the Keep America Flying policy statement from ALPA, the organization clearly stated that it has long maintained “that the most immediate concern is simply a shortage of qualified pilots who are willing to work for the paltry wages and benefits offered by some of the regional airlines to first officer candidates” (ALPA, 2015, p. 6). ALPA bases this argument in part on the number of ATP pilots who are currently not flying for airlines. As of December 31, 2014, the FAA (2014b) reported that there were 152,933 active airline transport pilots in the US. US airlines employ approximately 75,000 pilots (Frank, 2015).

In the spring of 2015, GAO representative Dillingham still held fast to the position that the GAO “basically concluded we could not see a pilot shortage in the near term” (Tallman, 2015, para. 2). However, during that same presentation at The Ohio State National Pilot Supply Summit, he stated, “A shortage is a shortage. If you’re saying the regionals can’t fill their slots that’s a shortage” (Tallman, 2015, para. 4). That is exactly what the regionals are saying.

While forecasts vary and debate over the existence or cause(s) of a pilot shortage continues, there is no debate over the struggle that regional airlines are experiencing in meeting the demand for pilots. Regional airlines are defined by the RAA (2015b) as US certificate-holders providing scheduled passenger service under 14 CFR Parts 135 or 121 with aircraft capacities of fewer than 100 seats. In 2014, regional airlines conducted 47% of domestic departures, served 607 airports, and provided exclusive service to approximately 65% of those airports (RAA, 2015b).

In 2014, in his testimony to the House Subcommittee on Transportation and Infrastructure Subcommittee on Aviation, Republic Airways Chairman, President, and CEO Bryan Bedford referred to the pilot shortage as “very real and very significant” (*Air Service to Small and Rural Communities*, 2014a, p. 3). In the third quarter of 2015, Republic reported losing 60 pilots per month while hiring only 20 (Briggs, 2016). Republic filed for bankruptcy protection in February of 2016, citing pilot shortage as a contributing factor.

At the same 2014 hearing, which explored air service to small and rural communities, Cape Air CEO Daniel Wolf

stated that the main constraints on expanding the Cape Air model of small community service are a lack of suitable new aircraft and a lack of qualified pilots (*Air Service to Small and Rural Communities*, 2014b). At the 2015 RAA conference, Cape Air continued to report that they could not look for additional growth and reported that they were down 25 to 30 pilots (RAA, 2015c).

Piedmont Airlines reported that, although the hiring target for the first quarter of 2014 was 50 pilots, they hired only 28 pilots due to “an acute shortage of qualified, appropriate pilots on the market” (*Air Service to Small and Rural Communities*, 2014d, p. 1). In October 2013, Piedmont was forced to cancel a scheduled training class due to a lack of qualified candidates (*Air Service to Small and Rural Communities*, 2014d). The Piedmont CEO went on to state:

This year, instead of selecting the best pilots from a large pool of qualified applicants, Piedmont is competing with every other airline to attract the limited number of men and women permitted to fly for us under the FOQ rules. Instead of screening for candidates we believe will grow to have successful careers at our company, we spend a great deal of time and thousands of dollars on pilots who may not make it through training and if they do, are unlikely to remain with Piedmont for any significant length of time. (*Air Service to Small and Rural Communities*, 2014d, p. 2)

By 2015, RAA President Faye Malarkey Black stated, “now we are definitely in the middle of a pilot supply crisis” (RAA 2015d, p. 16). The COO of SkyWest, the second largest regional airline in terms of number of passengers enplaned (RAA, 2015b), reported that they were still filling classes, but it was becoming challenging, and expressed concern about the pilot shortage (RAA, 2015c). Meanwhile, at Endeavor Air, the fifth largest in terms of number of passengers enplaned (RAA, 2015b), the CEO reported that pilot classes are being filled. He noted that Endeavor Air provides a \$20,000 retention package, will pay for the ATP CTP course, and offers a \$2,000 bonus to any employee who recruits a pilot (RAA, 2015c), resulting in a first-year pay potential of \$50,000. By comparison, Great Lakes Airlines, 26 on carrier ranking (RAA, 2015b), went from 300 pilots in August 2013 to 78 pilots in March 2014 and reported having to end service to 18 cities “because we could not find crews” (RAA, 2015c, p. 4). According to the job posting for an ATP-qualified first officer at Great Lakes, the first-year salary, based on 75 flight hours a month, is just over \$25,000. The airline has recently added a possible bonus of \$3,000 depending on the aircraft assigned (Great Lakes Airlines, n.d.).

Entry-level pilot pay at regional airlines has become a focal point in the pilot shortage discussion. ALPA, for example, has been consistent in the opinion that given the

evidence, it's clear that today's safety rules have no bearing on why some companies may not be able to attract qualified pilots, because there are pilots available to fly for airlines that provide career growth and adequate work-life balance. (ALPA, n.d., para. 8)

One area of concern is the perceived return on investment for students. Collegiate aviation flight programs often run in excess of \$100,000 (GAO, 2014). Upon graduation, the most common path to build flight time to meet the new pilot hiring requirements is to be a flight instructor; the average salary for a flight instructor is \$20,000 a year (GAO, 2014). After one to two years of being a flight instructor, pilots on an airline path target regional airlines for employment, where the starting annual pay can span from the low- to mid-\$20,000 range to \$50,000 (with bonuses and retention payments).

There is little debate that entry-level pay at many regional airlines has been unacceptable. Even the CEO of a leading regional airline agreed. In public comments made at the National Pilot Supply Summit hosted by The Ohio State University, Brian Bedford, CEO of Republic stated, "there is no doubt entry level pilot pay at regionals is insufficient" (Bedford, 2015). However, pay has increased at many regional carriers in the past year. Since Mr. Bedford's comments, Republic Airways increased first-year pay from \$23 to \$40 per flight hour (Republic Airways, 2015). Trans States Airlines approved a new pilot contract, resulting in an increase to \$35.81 per flight hour (ALPA, 2015b). ExpressJet increased first-year pay to either \$37 or \$40 per hour, depending on aircraft type (ExpressJet, n.d.). Finally, Endeavor Air currently tops the first-year salary list with a potential for \$50,000 (Endeavor Air, n.d.).

#### *Prior Research on the Impact of the FOQ Rule on Collegiate Aviation Programs*

Previous research has been conducted on the impact of the FOQ rule change on collegiate programs. Bjerke and Malott (2011) found, based on a survey of flight instructors, that career aspirations of becoming an airline pilot had diminished, but suggested that more research is necessary to determine why. Depperschmidt, Bliss, and Casebolt (2015) explored the impact of the law on collegiate programs from the perspective of aviation faculty. From that study, a large majority (75%) of faculty respondents indicated a belief that the rule change (FAR 121.436) will discourage students from completing flight degrees (Depperschmidt et al., 2015). Faculty in that study also raised concerns related to pilot pay and students seeking career opportunities outside of the US. Although it was not the primary focus of the research, pay was also raised as a concern related to the pilot shortage in a recent article that explored the change in pilot background characteristics as a result of the FOQ rule change (Bjerke et al., 2016). In a study on pilot supply in the US, a career aspirations survey that targeted collegiate

aviation flight students was conducted prior to the implementation of the FOQ rule change (Higgins et al., 2014). The survey results indicated that the rule change had negatively impacted airline pilot career aspirations of a small population of collegiate flight students and revealed a willingness of such students to work abroad if better opportunities existed for new pilots (Higgins et al., 2014).

#### **Purpose**

The purpose of this research is to explore factors related to the pilot supply challenges in the US. The unit of analysis is collegiate aviation flight students. Since the enactment of FAR 121.436, no research has been conducted that draws directly from the perspective of collegiate aviation students. The goal is to examine the impact of the FOQ rule on career plans of collegiate aviation students now that the rule has been implemented. While areas such as pay, opportunities for employment abroad, and the diminishing appeal of airline flying careers have been raised in prior research, this study provides a means to explore the impact of such factors by focusing directly on the potential workforce: collegiate aviation flight students.

A new area of exploration provided by this study is to examine what motivates new entrants to the airline pilot career path to target one airline over another for employment. In a competitive environment where hiring is occurring at most regional carriers and competition for qualified pilots is steep, new candidates are in a position to be selective about the airline they target. While pay is expected to be a primary factor, students' perceptions on pay and other potential employment factors such as bonuses and pipeline programs have previously not been measured. Understanding the key criteria and desires of the current pool of potential airline pilots can provide insight to their perceptions of the airline pilot career path, assist airlines in recruiting pilots, and assist university programs in meeting the needs of students. To explore these issues, the following research questions were developed:

1. What, if any, impact has the First Officer Qualification (FOQ) rule change had on the career plans of collegiate aviation flight students?
2. What motivates a collegiate aviation flight student to pursue a flying position at a particular regional airline?

#### **Methodology**

The methodology selected to address the research questions was a survey. When planning a survey, several options exist. The researcher can use questions from a standardized instrument, modify an existing survey, or develop a new survey. For this study, an existing survey developed to gauge student career aspirations and the impact of the proposed FOQ rule on career goals was modified. The original survey was conducted for a previous study on pilot



supply (Higgins et al., 2014). The survey was modified for this study in order to add questions related to why career aspirations may have changed and to identify motivations for targeting a particular airline for employment. The result was a cross-sectional survey to gauge collegiate aviation students' attitudes. The target population was current students or recent graduates of US collegiate aviation professional flight programs. The survey was distributed online to the target population through the assistance of the University Aviation Association (UAA) and the Aviation Accreditation Board International (AABI). The Institutional Review Board of the University of North Dakota approved the procedures in this study. To minimize bias, no group was systemically under- or overrepresented (Folz, 1996). It is noted that many, but not all, aviation collegiate programs would belong to one or both of these organizations: the UAA has 105 institutional members including two- and four-year programs (UAA, n.d.), and the AABI has 58 US educator members (AABI, n.d.). Potential sources of sample error may include (1) university student lists that are not up-to-date, (2) multiple responses from a single individual, and (3) selection error (due to self-selection, only those highly interested in the topic respond). Researchers had no ability to correct for any university list errors that could contribute to undercoverage. The instructions were designed to reduce the occurrence of the next two errors to avoid overcoverage or multiplicity (Czaja & Blair, 1996). A pretest of the survey was conducted; this is considered an essential quality-control step (Czaja & Blair, 1996; Folz, 1996). Review of the pretest feedback resulted in no significant changes to the instrument.

## Results

A total of 820 individuals from 49 different institutions completed the survey. It was a 23-item survey with a Chronbach's alpha of .876. A review of the demographics revealed that 91% of respondents were male with 9% female. The mean age was 23.3. Average flight time for respondents was 388.45 hours total. Of the respondents, 24.7% held a certified flight instructor certificate (CFI). The majority of the respondents were upper-level students with 26% seniors, 24% juniors, 18% sophomores, 16% freshmen, and 9% recent graduates.

With regard to the first research question, participants were asked a series of questions about original career goals and the impact of the FOQ rule on their career plans. These questions were identical to those posed in a survey conducted in 2013 (Higgins et al., 2014), prior to the rule change. The 2013 survey, using a different sample of flight students from UAA member schools, was an 18-item survey with a Chronbach's alpha of .879. The 2013 results were compared to the period after the rule change.

Participants were asked about their original career goals. The results from the 2013 survey were nearly identical to

the 2015, survey with 67% of respondents in 2013 indicating that their original career goal was to be an airline pilot and 69% of respondents providing the same response in 2015. Corporate pilot was indicated as the original career goal for 14% in 2013 and 11% in 2015. Military pilots as a career goal also remained similar with 12% in 2013 and 11% in 2015.

To determine if career goals had changed, participants were then asked about their current career goal to compare to their original career goal. When asked about their current career goal, a shift away from the goal of becoming an airline pilot is evident. In 2013, the career goal of airline pilot had dropped from 67% (original career goal) to 54% (current career goal). In the 2015 survey, the drop was from 69% to 60%. While this may be perceived as a small increase in interest in airline careers, there is no statistically significant difference between the 2013 and 2015 results regarding both initial,  $t(689) = -1.398, p = 1.63$  (two-tailed), and long-term,  $t(684) = -1.228, p = .2209$  (two-tailed), career choices for an airline career.

To gain a better understanding of reported change in career goals, an opened-ended question was asked: If your career aspirations have changed since you began your flight training, why have they changed? These results were coded and three main categories emerged (see Figure 1). The most often cited reason given to why career plans changed related to the change in the FOQ rule. Within this category of FOQ rule change, concerns over increased costs to meet the requirements of the new rule were raised in 79 of the 157 responses (50%). The next highest areas of concern expressed were related to salary and quality of life.

Participants were also asked: How does the FAA rule, which resulted in increased hours to serve as a first officer in a Part 121 operation, affect your career aspirations? As noted in Table 1, 8% of respondents indicated they no longer plan to fly for the airlines due to the rule change, and another 28% are reconsidering the airline career path due to the rule change. In the 2013 survey, an identical 8% indicated they no longer planned to fly for an airline due to the rule change. There was no statistically significant difference between the 2013 and 2015 survey results regarding reconsidering the airline career path due to the rule change,  $t(682) = -.619, p = .54$  (two-tailed).

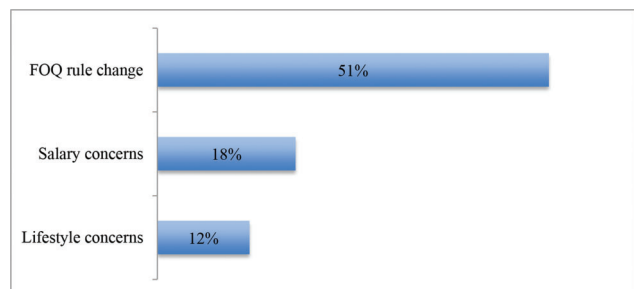


Figure 1. Student responses to why career goals have changed.

Table 1.  
Impact of FOQ rule on career goals.

	Frequency	Percent
No longer plan to fly for the airlines due to the rule change	61	8%
Starting to think twice about a career in the airlines based on the new rule	222	28%
Still plan to fly for an airline regardless of new rule	388	48%
Never planned to fly for an airline	130	16%
Total	801	100%

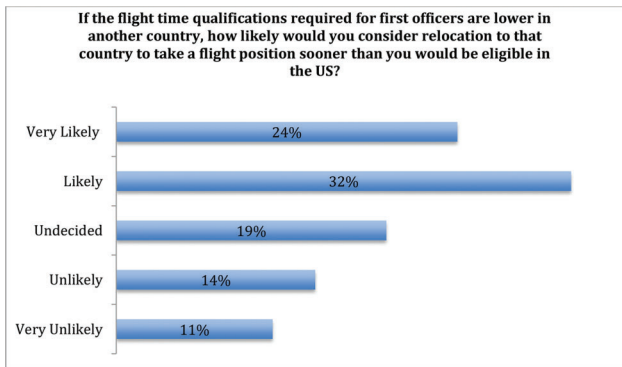


Figure 2. Student responses to impact of opportunities abroad on career plans.

In addition to competing with other US regional airlines for qualified pilots, regional airlines are also competing with foreign carriers for talent. Survey participants were asked about the impact of opportunities abroad on their career plans. Results presented in Figure 2 reveal that 56% of respondents ( $n = 779$ ) indicated they are likely (32%) to very likely (24%) to consider relocation to a foreign country if a flight position would be available sooner than it would in the US. By comparison, in 2013, 60% of respondents were likely to very likely to consider relocation to another country for airline employment if requirements in another country were lower.

When salary opportunities abroad are explored, the results increase, as noted in Figure 3. If offered a starting salary of \$10,000 a month or more, a total of 76% of respondents in the 2015 survey indicated they were likely (26%) to very likely (50%) to consider relocating to another country for an airline flying position.

To address research question two, a series of questions were developed to determine what motivates a new entrant to the airline industry to select one regional airline for employment over the others. Questions addressed multiple criteria including salary, hiring bonuses, location of bases, upgrade time, and pilot pathway programs.

To begin, participants were simply asked what would most influence their decision when selecting a regional airline to target for employment. They were asked to select

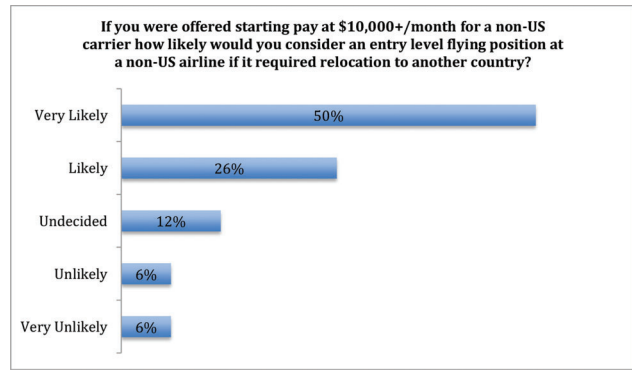


Figure 3. Student responses to impact of better pay opportunities abroad on career plans.

Table 2.  
Student responses to what will influence students' decisions to target a particular regional airline for employment as a pilot (students selected the top three choices).

	Frequency	Percent
Salary	542	68%
Location of bases	459	58%
Upgrade time	430	54%
Hiring agreement with a major airline	312	39%
Type of equipment flown	223	28%
University pathway program	153	19%
Hiring bonus	128	16%

their top three choices from a list of seven. The results (Table 2,  $n = 794$ ) show salary is the top response followed by location of bases and upgrade times. Pathway programs from a regional airline to a major carrier appear to hold more value to aspiring pilots than pilot pathway programs from a university to a regional carrier. Pilot pathway programs at universities and hiring bonuses were the least likely to influence the employment decision.

Additional questions were posed to further understand the impact of current or potential industry actions on student motivation to target an airline for employment. Participants were asked a series of four questions to determine how long one would be willing to guarantee employment based on a variety of options presented. Two questions focused on bonuses. For a \$5,000 bonus, the majority of respondents ( $n = 789$ ) were willing to sign a one-year letter of commitment. When the bonus is increased to \$10,000, the majority of respondents ( $n = 788$ ) were willing to sign a two-year letter of commitment. The next questions related to the potential for a flow through agreement or seniority number with a major carrier. Participants ( $n = 790$ ) were asked how long they would be willing to commit to a regional carrier if that carrier offered a guaranteed interview at a major airline. The top response was two years (28%), but no single response dominated this question. The range of responses were narrow, with 26% stating they would not sign a commitment for any reason and 20% stating they would

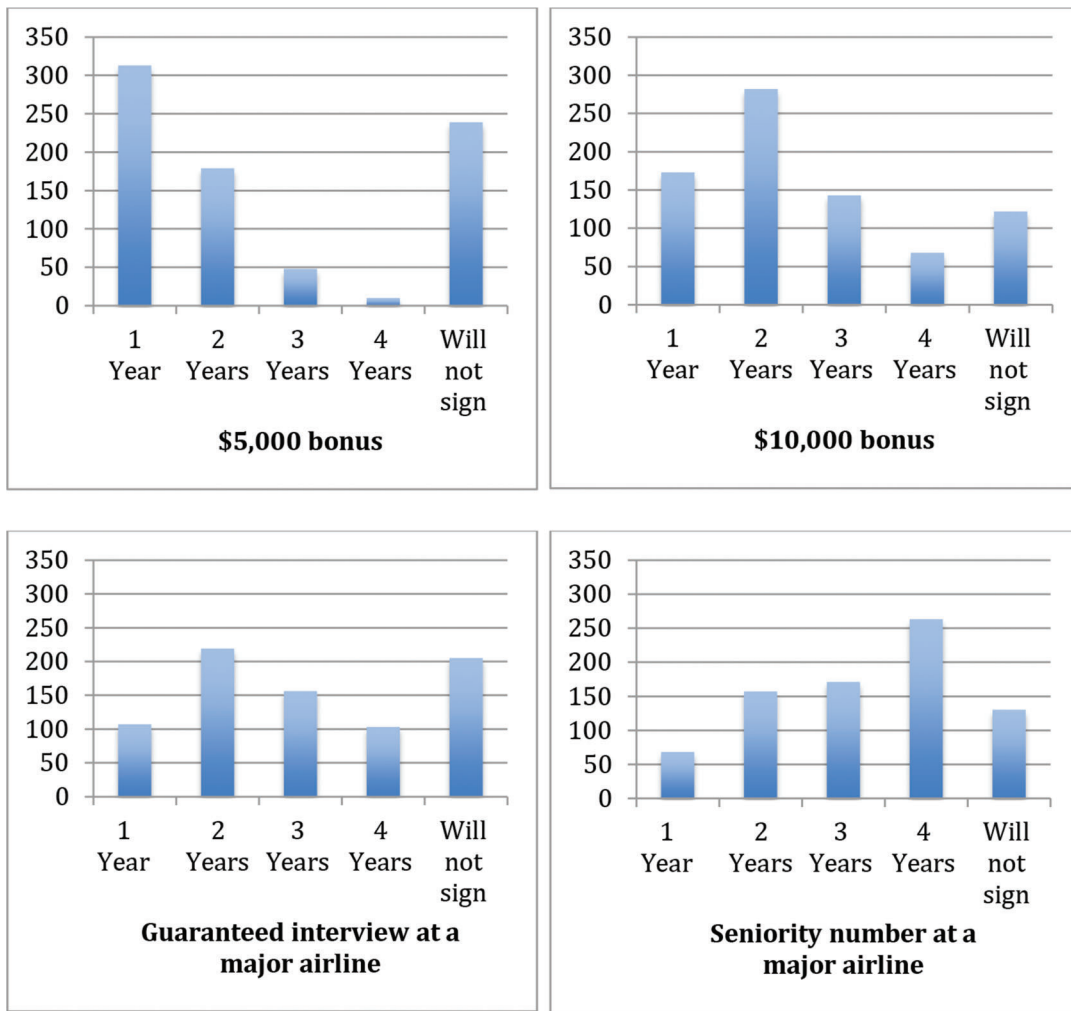


Figure 4. Student responses to willingness to sign an employment commitment as a pilot at a regional airline based on what the airline is offering.

sign a three-year commitment for a guaranteed interview. However, offering up a seniority number had greater appeal. Participants ( $n = 789$ ) were asked how long they would be willing to commit to a regional carrier if they were offered a seniority number at the regional airline that would flow through to a major airline. Receiving a seniority number dominated the category of willing to commit for four years. The results of these questions are summarized in Figure 4.

One open-ended question was posed: What is the single most effective action that regional airlines can take to recruit you as a pilot? This question was posed to allow for further input and to identify and include any other factors that participants wanted to communicate as important to their decision on targeting a regional airline for employment. It resulted in 640 responses, 78% of the participants who completed the survey. It appears the participants wanted to weigh in on this particular question, and the results for the top action were clear. The responses were coded and coding categories were developed. Figure 5 presents the top categories that emerged and the number of responses

that were included in those categories. It should be noted that some respondents included multiple factors in their responses. Those responses were counted in each related category.

Three themes emerged from the results: financial concerns, quality of life concerns, and the desire for a clear career path to the major airlines. Financial concerns prompted the largest response by a wide margin, with higher salary and financial support combining for 59% of the total responses. The responses were loud and clear in regard to the negative perceptions that aspiring pilots have of pay at the regional airline levels. In addition to the need for higher salaries, calls for financial support included such actions as money to pay off student debt, pay for the ATP CTP course, and financial assistance to build flight time or add on ratings. Some comments from the survey on the topic of financial concerns are included below:

- "A salary that I can use to both live off of and pay back loans at the same time."



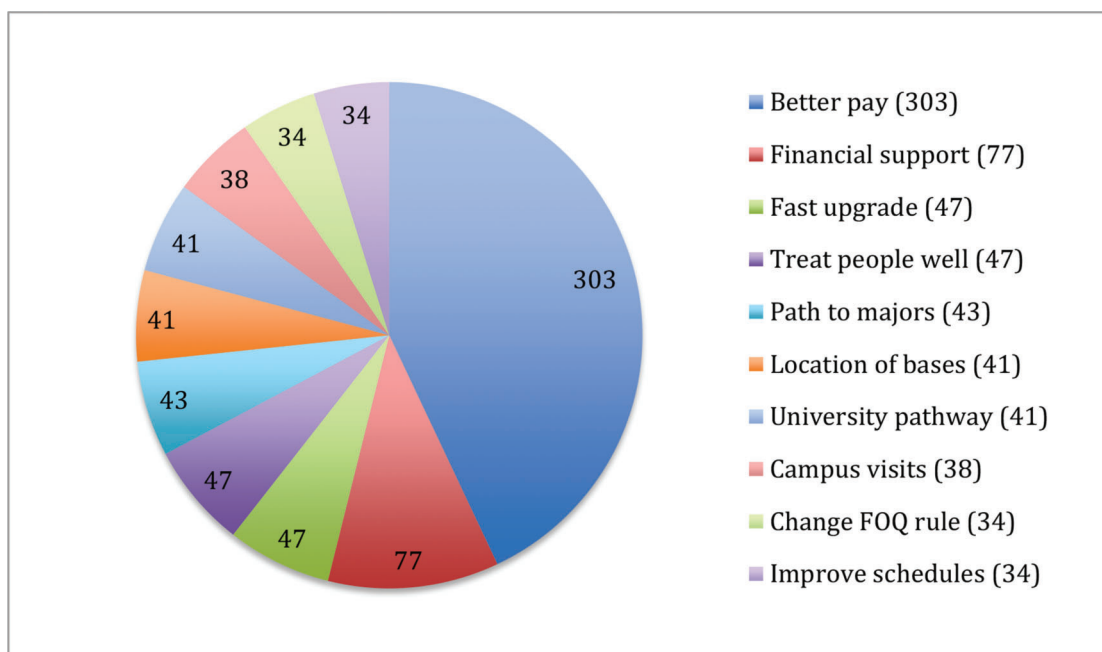


Figure 5. Student responses to the single most effective action regional airlines can take to recruit him/her as a pilot.

- “Pay me a livable wage.”
- “Provide a pay incentive that covers reasonable living expenses and justifies the extreme costs associated with pilot training.”
- “Regional airlines could provide the ATP-CTP course as part of their new-hire training programs. It’s just not feasible for students who have paid tuition and flight fees to also pay for an additional training course out of pocket.”

The theme with the second highest response rate was quality of life concerns. Three categories related to quality of life were identified: treating people well, location of bases, and improved schedules. Combining these categories resulted in a total of 122 comments representing 19% of the total responses. Of those three areas, treating people well received the most comments. Some comments from the survey on the topic of quality of life concerns are included below:

- “The most effective action a regional airline can recruit me with is having a location that I like with a good work environment and is likely to help me move to a major airline.”
- “Treat us how we would like to be treated. A valuable employee and not a number.”

A third theme that emerged was the desire for a clear pathway to a major airline. Two categories in this area included fast upgrade times (47 comments) and a pathway to a major airline (43 comments) for a combined total of 90 comments representing 14% of total responses.

Another interesting, but smaller, category (38 comments) that emerged was the call for campus visits. In this category, participants expressed a desire for regional airline representatives to come to campus and essentially sell them on why their airline was a better choice than others. Comments included:

- “They really need to work on selling it to people. Why this option is better than some other program and what it can do for those students.”
- “Personal recruitment. Coming to the school has always been a plus.”

#### Analysis and Impact on the Aviation Industry

In regard to research question one, results indicated that the FOQ rule had an impact on the career plans of the collegiate aviation students surveyed. As noted, 8% of respondents indicated that they no longer plan to fly for the airlines due to the rule change, and another 28% are reconsidering the airline career path due to the rule change. Given that the responses did not significantly differ between the 2013 and 2015 surveys, the results indicated that the impact of the rule change continues to have a negative influence on the career plans of a portion of aspiring pilots in the collegiate pipeline.

Not only has the FOQ rule caused some to question their choice of becoming an airline pilot, but it may also be pushing some potential US airline pilots overseas due to the ability to secure a position earlier. Receiving a higher salary was also a motivator for potential new US airline pilots to seek employment in a foreign country. The survey results

revealed that large numbers of aspiring pilots are willing to fly overseas. In 2012, FAA data indicated that about 5% of ATP pilots were potentially working overseas (GAO, 2014). In the post-FOQ rule change environment, the survey results indicated that this number may be expected to increase.

Research question two sought to examine what motivates an aspiring airline pilot to target one regional airline for employment over another. No matter how the question was presented or in what format, the results were clear—pay was the driving factor for potential new-hire pilots when targeting a regional airline for employment. By a wide margin, pay was consistently the top concern of aspiring airline pilots. Another theme that emerged, particularly in regard to why pilots on the collegiate pipeline are questioning the career choice, was concern over the increased amount of time and financial investment required with the new requirements versus the return of a low starting salary. Other concerns included quality of life issues and the desire for a clear path to a major carrier.

As noted, some regional airlines are responding to concerns over pilot pay, with Endeavor Air leading the industry by offering a \$20,000 retention payment to all pilots through 2018 (Endeavor Air, n.d.). Numerous other carriers are including hiring bonuses, often with a two-year commitment. Referral bonuses are also becoming more prevalent and offer an even higher first-year pay potential. For example, referral bonuses at Endeavor Air (\$2,000), GoJet Airlines (\$1,500), Trans States Airlines (\$1,500), and Piedmont Airlines (\$1,000) are paid to pilots for each new pilot they recruit. Multiple carriers including ExpressJet, SkyWest, Endeavor Air, Envoy Air, Mesa Airlines, Air Wisconsin, PSA Airlines, GoJet Airlines, Compass Airlines, Trans States Airlines, and Piedmont Airlines are paying for the ATP CTP course. These efforts appear to be in line with the concerns expressed by aspiring airline pilots in the survey. Base airline pay is also on an upward trend, a start at addressing the ALPA concerns of the temporary fix of bonuses. Regional airlines are on the right path to address the concerns of their future airline pilots, but continued efforts to raise pilot pay should be pursued.

Regional airlines are also beginning to respond to the quality of life concerns. Republic Airways has started a new initiative on employee engagement as a result of in-house survey results where the employees ranked the company as “just average in general” (RAA, 2015c, p. 4). As CEO Bryan Bedford stated, “We don’t strive to be average” (RAA, 2015c, p. 4). Carriers are also beginning to develop and market enhanced commuter policies (ExpressJet, n.d.; GoJet, n.d.; Piedmont, n.d.).

Formal arrangements between regional airlines and major airlines have been established to provide regional pilots with a path to the major airlines. Agreements with major airlines for automatic interviews, or even flow through

with no additional interview at all, are becoming more common. According to Ric Wilson, VP of flight operations at Envoy (personal communication, June 30, 2015), “a new hire at Envoy today is projected to make Captain at Envoy within 2.5 years and is projected to flow through to American within 6 years of date of hire.” Emphasis on factors such as upgrade times and agreements with major carriers are potentially strong recruiting tools.

## Conclusions

The survey results revealed that the FOQ rule change has impacted career plans of aspiring pilots. Some in the pipeline have changed their career goals due to the rule change, and a large number of pilots are willing to fly overseas if they have an opportunity for a first officer position earlier in a foreign country than they do in the US. Initial pay at regional airlines also impacts career plans. Large numbers of aspiring pilots indicated that they would be willing to fly overseas due to the opportunity to earn higher salaries. These results support the literature regarding concerns over the impact of first-year regional airline pay. They also documented that pay is the top motivating factor for targeting a specific regional airline for employment for the collegiate flight student in the pipeline. Responses to open-ended questions clearly revealed that aspiring pilots have negative perceptions of the regional airline industry. Although many regional airlines are increasing first-year pay for first officers through increased hourly wages and bonuses, this upward trend needs to continue. In addition, the results introduced two additional areas—quality of life factors and a pathway to a major carrier—that are high priorities for collegiate pipeline students when exploring regional airline options. Additional research that explores the larger pool of potential airline pilots, beyond the subset of the collegiate pipeline, could enhance this discussion.

It is suggested that more focus needs to be placed on the career earning potential of aspiring pilots versus a focus on first-year pay. Considering up and out time at regional airlines (upgrade to captain and moving on to major airlines), a collegiate aviation student today has the potential for a 30- to 35-year career at a major airline. Established pilots at major airlines can earn a salary of over \$240,000 per year (Wildes, 2015). Further, American Airlines pilots gained a 23% pay increase in their recent contract (Maxon, 2015). The earning potential for an aspiring pilot over his/her career is substantial. While the airline pilot career path may suffer from a negative image due to the focus on first-year pay, this may in fact be the best time in the history of the industry to pursue an airline pilot career. With airlines hiring at unprecedented levels, forecasts revealing a continued demand, and high career earning potential, now is an excellent time to pursue a professional airline pilot career. Perhaps that should be the message to aspiring pilots.

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