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A Review and History of the Air Traffic-Collegiate Training Initiative Program

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The Air Traffic-Collegiate Training Initiative (AT-CTI) has been in existence for over twenty years. The program started out as a demonstration based on a number of studies that looked at off-loading training costs from the Federal Aviation Administration (FAA). The use of selected collegiate institutions was the venue that was recommended from the studies to participate in the program. The program started small, with 5 collegiate institutions and has grown to 36 schools. During that time, the FAA has tried several methods of evaluating the different collegiate programs to ensure they were meeting the requirements initially established by the FAA. Graduates from each of the institutions had to meet the FAA requirements and after completing the academic requirements, they were recommended for FAA employment as air traffic controllers by the different schools. Graduates of the Collegiate Training Initiative (CTI) schools were never guaranteed employment with the FAA but if they were selected for employment, were allowed to skip the first five weeks of training at the FAA Academy. The first five weeks of training at the academy covered air traffic basics. The CTI graduates were just one source for employment for the agency, along with veterans and general publication announcements. This process was used until February 2014 when the FAA changed the hiring process for air traffic controllers. The CTI hiring source was eliminated and all students who had previously qualified now had to compete in one national hiring announcement. The announcement in February reverted back to the general requirements for air

traffic controllers: (a) be a U.S. citizen; (b) start training before you 31st birthday; (c) pass a medical examination; (d) pass a security investigation; (e) three years of progressively responsible work experience, or a Bachelor's degree, or a combination of post-secondary education and work experience which equal three years; (f) pass FAA pre-employment tests, and (g) speak English well enough to be understood in an air traffic environment (Federal Aviation Administration, 2014a). This paper will outline the history of the CTI program, the participants and the current state of the hiring process.

History of the Air Traffic-Collegiate Training Initiative Program

The history of the FAA-Collegiate Training Initiative program dates back to the mid 1980's when several studies (Means et al., 1988; Northern NEF, Inc., 1988; Schultz & Marshall-Mies, 1988) suggested that the FAA rely more heavily on collegiate education's experience in the two and four year schools. This prompted an FAA initiative, the Flight Plan for Training (U.S. Department of Transportation, 1991) which sought new training ideas as a precursor to hiring air traffic controllers. This initiative was seen both as a cost effective method of providing highly motivated and qualified air traffic control specialists and a pilot program was established in 1989. The first two institutions in the pilot program were the Minnesota Air Traffic Control Training Center (MnATCTC), as administered by the Mid-America Aviation Resource Consortium in Eden Prairie,

MN and Hampton University in Hampton, VA. Within three years, FAA Order 3120.26 formally established the Collegiate Initiative for Air Traffic Control Specialists (CTI/ATCS) as a process of improving recruitment and training. The test program provided for the selection of a few select educational institutions involving a five year test period. As stated in the FAA Order (FAAO), the objective of the test program was to:

> Determine if the post-secondary educational institutions can develop and validate an innovative selection process and training curriculum that encompasses the knowledge, skills, and abilities required of the air traffic control occupational field (terminal and en route options) under the current air traffic cooperation and forthcoming advanced automation system. Institutions must also be able to develop a valid method assessing the competency of all who complete the training. (U.S. Department of Transportation, Federal Aviation Administration, 1991, p. 1)

The criteria used to select institutions were (U.S. Department of Transportation, FAA, pp. 2-3):

a. Demonstrated capability to develop an air traffic control curriculum, experienced faculty, and appropriate facilities and equipment;

b. Methodology to prepare students for the air traffic control occupation;

c. Strategy to aggressively recruit minorities and females;

d. Willingness to select and screen students in accordance with the provision of Title IX of the Civil Right Act of 1964;

e. History of producing graduates of relevant programs who have achieved the full performance level of an air traffic controller; and

f. Willingness to allow FAA to evaluate the total program.

In 1992, a total of five institutions were participating in the CTI/ATCS program (FAA, 2014c):

a. Minnesota Air Traffic Control Training Center, Eden Prairie, MN;

b. Hampton University (HU), Hampton, VA;

c. Community College of Beaver County (CCBC), Monaca, PA;

d. University of North Dakota (UND), Grand Forks, ND; and

e. University of Alaska at Anchorage (UAA), Anchorage, AK.

At the end of the five-year evaluation period, two studies were conducted to determine if the test program had achieved its objectives. The report's results indicated that the CTI program was a viable method of developing and delivering air traffic control curriculum and therefore a source the FAA could utilize for new controllers.

In 1997, the CTI program was expanded from five to fourteen schools. The schools added in 1997 were (FAA, 2014c):

a. Vaughn College of Aeronautics, Flushing, NY

b. Daniel Webster College, Nashua, NH

    c. Dowling College, Oakdale, NY

    d. Embry-Riddle Aeronautical University, Daytona Beach, FL

    e. Inter-American University of Puerto Rico, Bayamon PR

    f. Miami-Dade College, Homestead, FL

    g. Middle Tennessee State University, Murfreesboro, TN

    h. Mt. San Antonio College, Walnut, CA

    i. Purdue University, West Lafayette, IN

Hiring of air traffic controllers was reduced dramatically in the 90's until about 2006. As the hiring needs increased in 2006, the FAA solicited new schools to join the CTI program. Schools were asked to submit packages which were evaluated by the FAA for selection. Ultimately, a total of twenty-two schools were added to reach a total of thirty-six schools in the current AT-CTI program. As a result of the submittals, 9 schools were added in 2007, 8 in 2008, and 5 in 2009 (FAA, 2014c).

Schools added in 2007:

    a. Arizona State University

    b. Florida State College at Jacksonville

    c. Green River Community College

    d. Kent State University

    e. Lewis University

    f. Middle Georgia College

g. The Community College of Baltimore County

h. University of Oklahoma

i. Metropolitan State College of Denver

Schools added in 2008:

a. Aims Community College

b. Broward College

c. Eastern New Mexico - Roswell

d. Embry-Riddle Aeronautical University, Prescott

e. Jacksonville University

f. Le Tourneau University

g. St. Cloud State University

h. Tulsa Community College

Schools added in 2009:

a. Florida Institute of Technology

b. Hesston College

c. Sacramento City College

d. Texas State Technical College – Waco

e. Western Michigan University College of Aviation

A partnership was established with the FAA and all schools in the CTI

program were required to concentrate on air traffic basics knowledge instead of

acting as a screen in their curriculum, a change from the original focus of the five

year test period. Graduates of CTI schools would be allowed to skip the first five weeks of training at the FAA Academy and complete the training for the type of facility they were assigned. The schools in the program consisted of two and four-year programs. The degrees varied widely, from associates to bachelor's to master's degrees. The schools and type of degree offered are shown in the appendix (FAA, 2014b).

The FAA labeled the CTI program as a collaborative partnership agreement that would use collegiate aviation as a means of meeting agency needs in the hiring of air traffic control specialists. The program did not obligate the FAA with any financial expenditure. Any funds that were required to support an institution's program were solely the responsibility of the institution. When a school was accepted and a partnership agreement was established, either party could terminate the agreement with thirty days' notice.

There were also explicit roles and responsibilities established for each party. The FAA's responsibilities were (FAA, 2012, p. 3):

- Provide access to current CTI-related technical documents (orders, directives, etc.)

- Provide electronic versions or a single hard copy of curriculum materials and guidance to include lesson plans, student handouts, and multimedia materials

- Provide technical advice and support

- Provide academic diagnostic testing materials

- Provide institutions with feedback

- Establish appropriate forums for regular communication among participating institutions and the FAA

- Consider recommended graduates for employment on the basis of FAA needs

The CTI responsibilities were (FAA, 2012, p. 3):

- Ensure that the curriculum satisfies the CTI teaching objectives

- Ensure that the faculty is knowledgeable in current air traffic policies, procedures, and curriculum

- Provide counseling for students in all aspects of the CTI program

- Ensure that CTI-related advertising accurately reflects the intent of the CTI program, including employment opportunities

- Provide an institutional recommendation for employment

The graduates from CTI institutions were required to meet all requirements set forth in FAA regulations and all legal requirements for employment. The following requirements had to be met by each institution and student (FAA, 2014a):

- Achieve a qualifying score on the current FAA testing procedures

- Receive institutional recommendation

- Successfully complete the FAA interview process

- Meet entry level ATCS medical standards

- Pass a pre-employment drug test

- Pass the background investigation for security and suitability

- Have U.S. citizenship

- May not have reached their 31st birthday prior to initial appointment in the terminal or en route options

- Complete institutional graduation requirements

- Complete course work including all CTI-specific required courses

- Be able to read, write, and understand the English language and speak it rapidly without accent or impediment of speech that would interfere with two-way radio conversation

History of Hiring Processes

Until 2006, the FAA had an initial training program that was conducted at the Academy but did not have a valid pre-hire exam other than the use of the Office of Personnel Management (OPM) written test (Ramos, Heil, & Manning, 2001a). The FAA needed an initial exam that evaluated the job of an air traffic controller, the tasks, knowledge, skills, and abilities of a controller. Studies began in the early nineties to design a tool that was *job-related*. A number of groups came together to develop a battery of tests that could be used as a selection tool for initial air traffic control training. The OPM test had been used for a number of

years and it was highly compromised and did not really serve as a predictor of a person's aptitude of becoming an air traffic controller.

In 1996, the FAA initiated the Air Traffic – Selection and Training Tool (AT-SAT) project. This project was initiated to develop a test that was a true predictor of someone's aptitude for the air traffic control specialist position. The requirements were that the test had to be job-related, legally defensible, and had to be a computerized exam. The team's research resulted in the creation of a battery of tests, testing a person's cognitive ability and it was referred to as AT-SAT. Ramos, Heil, and Manning (2001b) described the development of cognitive tests as:

1. An applied math test which consisted of multiple-choice questions in which the subject is required to answer questions based on time, speed, and distance.

2. An angles test containing multiple-choice questions measuring a person's ability to recognize angles.

3. A letter factory test where four factory assembly lines that manufacture letters A through D of the alphabet, to test the subject's situational awareness, planning, and thinking ahead.

4. An air traffic scenarios test displayed a low-fidelity simulation of an Air Traffic Control (ATC) screen updated every seven seconds and the goal of this exam is to maintain separation and control of the simulated aircraft and remain

within the defined airspace.

5. A scan test was used to display discrete objects (data blocks) moving in various directions on the screen, which randomly appeared and would then disappear.

6. A dial-reading test included a number of questions that was used to measure a person's ability to identify and accurately read dials on an instrument panel.

7. An analogies test contained word analogies and visual analogies and was used to measure a person's ability to solve a given problem.

8. An experience questionnaire was included to assess an individual's specific work-related skills by asking questions about past experience.

9. A planes test showed targets on a display as they progressed towards an airport and as the targets disappeared, the student was asked to use reasoning and perception abilities to indicate which aircraft arrives at a specific airport or navigation fix first.

10. A sound-memory test measured a person's listening comprehension, memory, and hand-eye coordination.

11. The final exam, a time wall/pattern recognition test had two tasks that measured a person's ability to judge the speed of objects and compare visual patterns at the same time.

The FAA stated that the "AT-SAT is an aptitude test and not a test of air traffic control knowledge. The goal of AT-SAT is to gauge the likelihood of success in air traffic control training and, more importantly, subsequently on the job" (FAA, 2011, para. 2). Since 2002, the AT-SAT has been used as the tool to test a person's aptitude of becoming an air traffic controller (King, Manning, & Drechsler, 2007). A number of complaints have been made about the AT-SAT, primarily due to the differences in scores associated with race and gender. The exam has been re-weighted several times to mitigate the differences but most disturbing was the projected pass rate of 67%, and the actual pass rate has been in excess of 90% (Bleckley et al., 2013).

As of 2012, the FAA had not established any standards for CTI programs regarding curriculum or necessary resources other than schools were required to teach air traffic control basics. In effect, CTI certification represents a standardized, across-the-board accreditation for the 36 member institutions that are equal and makes no distinctions between programs such as a two-year or four-year institution or the use of high-fidelity simulation. The FAA's requirements for CTI programs are generally broad in their scope, identifying general requirements rather than specific academic criteria. The FAA requires that the school offer instruction in the field of ATC, that knowledgeable faculty must teach any CTI courses, that the school offer counseling and instruction regarding the CTI

program, and that the school issue a recommendation for employment to the FAA for all graduates who meet the institution's CTI standards (FAA, 2012).

Due to the lack of absolute curriculum requirements for CTI schools, broad discrepancies have developed between many of the schools participating in the program (Barr, Brady, Koleszar, New, & Pounds, 2011). Some CTI schools teach a wide and varied ATC curriculum covering not only ATC fundamentals but also offer laboratory courses involving simulators for a variety of en-route and terminal courses. Other schools, however, offer no simulation-based instruction, with some only offering ATC basics and fundamentals. Still more schools fall somewhere in between these extremes in terms of curriculum and instructional resources. Despite the numerous and at times drastic discrepancies that exist between CTI programs, the FAA makes no distinction regarding individual programs, instead offering a blanket certification to all institutions providing they meet the agency's standards. As a result, CTI graduates are recommended to the FAA possessing a broad range of ATC skills and experience (Barr et al., 2011).

A 2011 independent review panel was convened by the FAA Administrator was asked to look at the process for selecting air traffic controllers for initial hire. The purpose of the panel as defined in the panel charter was:

The purpose of this Panel is to review the Federal Aviation Administration's (FAA) air traffic control technical training program, as well as the screening

and assignment processes. The Panel will provide recommendations to the Administrator based on the results of the review. (Barr, et al., p. 54)

The panel looked at the FAA's methods for selecting, hiring, and training ATCSs, which culminated in a number of potential improvements that the FAA might implement to refine and optimize the staffing of ATCS positions nationwide. Among these recommendations was replacing the identical method of CTI certification given to all schools that offer an air traffic curriculum. Instead, the panel proposed a system that assigned each institution a level of certification based on curriculum and lab resources (Barr et al., 2011). The four tiers of CTI certification as defined by Barr et al., are as follows:

1. Those institutions that teach only Air Traffic Basics including aircraft identification and performance.

2. Those institutions that teach Air Traffic Basics and the theory of at least one option with no supporting labs.

3. Those institutions that teach Air Traffic Basics and at least one option with supporting lab(s).

4. Those institutions that teach Air Traffic Basics and all options (Tower, Terminal Radar, En Route, and Non-Radar) with supporting labs for each option. (p. 8)

By assigning different tiers to the CTI schools, this would also affect the controller selection process (see Figure 1).
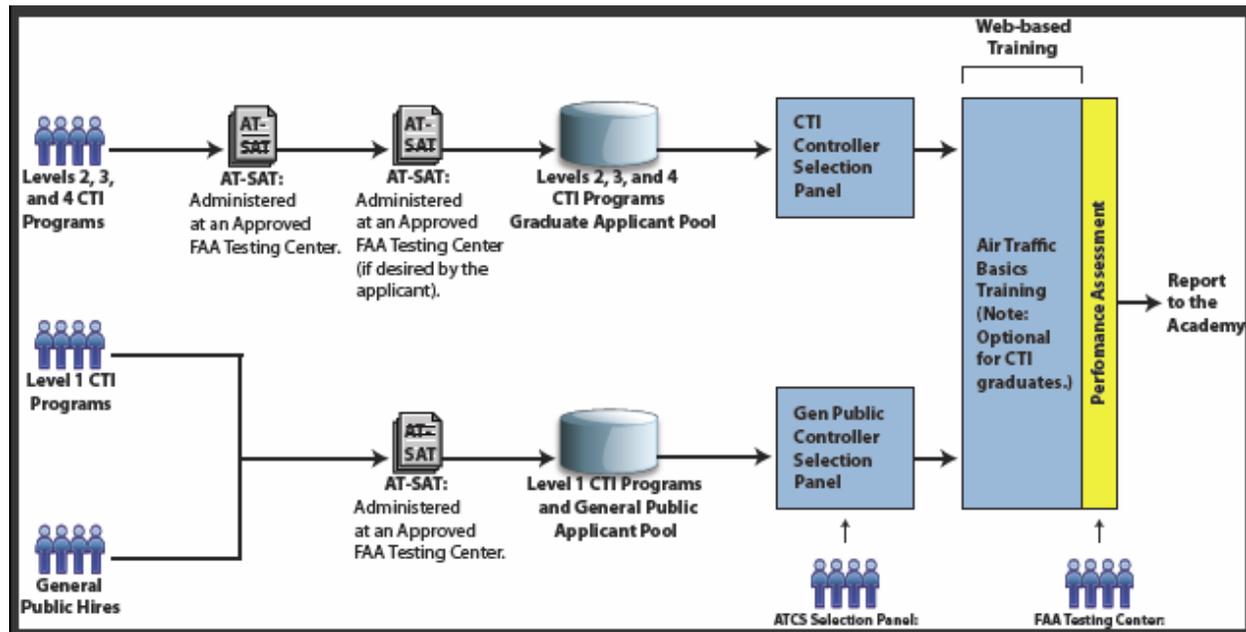
Figure 1. Recommended changes to the ATCS selection process
Adapted from "FAA Independent Review Panel on the Selection,
Assignment and Training of Air Traffic Control Specialists" by Barr, et
al., 2011, p. 16.

By categorizing CTI schools based on their curricula and resources, Barr

et al., (2011) and the team suggested that the FAA move towards a system in

where ATCS candidates are considered by the scope of ATC knowledge and

skills they possess. Understanding the knowledge and capabilities of all

institutions in the CTI program, the FAA's process for selecting and training

ATCSs has the potential to become much more accurate and efficient. As of 2012,

the hiring process for ATCS candidates centered on a single measurement, the

AT-SAT standardized test; a method that has received a great deal of criticism

throughout the ATC and academic fields. The independent review panel provided

49 recommendations in 11 categories. The categories were collegiate training initiative programs (3 recommendations), selection process (13 recommendations), academy training (5 recommendations), assignment process (2 recommendations), employee records (1 recommendation), field training (4 recommendations), simulation strategy (3 recommendations), on-the-job training instructors (8 recommendations), professional standards (3 recommendations), organizational structure (4 recommendations), and other recommendations (3 recommendations) (Barr et al.).

In making their recommendations, the panel compared the current FAA hiring process, using the central selection panel (CSP) and the Air Force method of selecting pilots for undergraduate pilot training (UPT). The CSP model provided very limited information to the selection managers and was very restrictive as to who they selected. When the FAA's CSP process was compared to the Air Force UPT model, the UPT method used several components: grade point average, physical fitness assessment, a pilot candidate selection model, and subjective scores that included commander's rankings and field training ranking (Barr et al., 2011). Based on their observations, the panel developed a model that used the concepts in the UPT model that were similar with the FAA requirements. The proposed ATCS selection model included four objective components: AT-SAT score, college grade point average (GPA), AT Basics exam score and the institutions CTI level. They also included two subjective components that were an

interview and a selection panel's assessment and each of the components were

assigned point values (See Table 1):

Table 1.

ATCS Selection Model Component Point Values

Objective	Points	Subjective	Points
AT-SAT	15	Interview	15
College GPA	10	Selection Panel Assessment	15
Air Traffic Basics Score	5		
AT-CTI Level	40		

Note. Adapted from "FAA Independent Review Panel on the Selection, Assignment and Training of Air Traffic Control Specialists" by Barr, et al., 2011, p. 12.

After applying all of the new components to the selection process, figure 2 shows

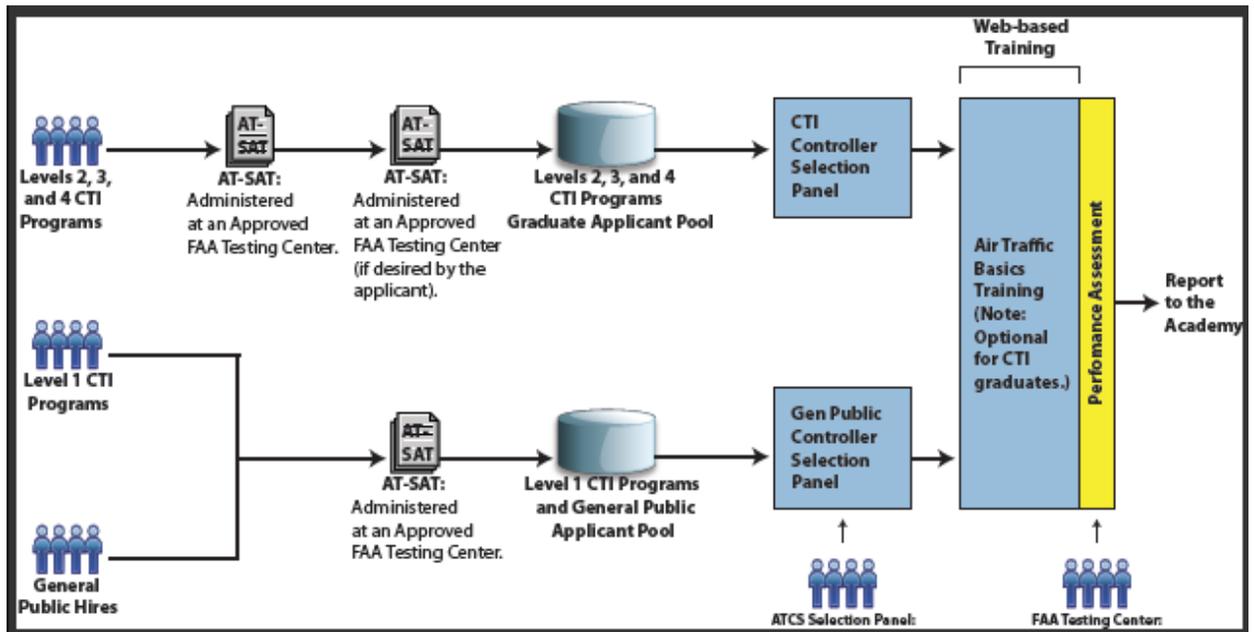what the new selection process might look like.

Figure 2. ATCS recommended selection process changes
Adapted from "FAA Independent Review Panel on the Selection, Assignment and Training of Air Traffic Control Specialists" by Barr, et al., 2011, p. 16.

Another factor that was considered in the changes to the hiring process was the

Barrier Analysis of the Air Traffic Control Specialist Centralized Hiring Process.

The purpose of this analysis was to transform the FAA into a more diverse

workplace. The study was conducted by the FAA's Office of Civil Rights, Office

of Human Resources and the Air Traffic Organization. The goal was to identify

possible barriers that might impede equal employment opportunities. The final

report was completed in May 2013 and identified four areas out of seven that are

used in the ATCS hiring process that were considered barriers. The catalyst on

hiring was driven by the fact that the FAA expects to hire 12,500 controllers in

the next 10 years with a projection of 11,000 controllers retiring by 2014 (Outtz &

Hanges, 2013). Within the centralized hiring process the Outtz and Hanges report listed seven decision points as possible barriers to racial and gender employment opportunities:

1. Qualification determination of applications

2. AT-SAT testing phase

3. Preparation of the referral list of eligible and qualified applicant list

4. Centralized selection panel determination of selections to the interview process

5. Interview process

6. Medical clearance process

7. Security clearance process

During the study, evidence was found that there were barriers to employment in the first four points as it relates to racial/ethnic minorities, race/ethnicity and gender for point two. There were no barriers found for the last three decision points. Outtz and Hanges provided recommendations in the report to resolve the barriers. They were

> Recommendations to address the barriers include making improvements to the ATCS hiring process, developing a targeted marketing and outreach campaign to increase diversity within applicants pools, standardization of human resources (HR) evaluation criteria, removing inconsistencies in

centralized selection process criteria, and revising how the AT-SAT is

used in establishing best-qualified lists. (p. 15)

Current Hiring Process

The results of the Barr report and the Barrier Analysis told the FAA that

the process of hiring controllers had to change. The overall recommendations

from both reports were similar in that other methods and procedures should be

used when selecting controllers. Consistent in both reports was that the AT-SAT

should not be used as the sole determination and it does not necessarily indicate

someone's aptitude to become an air traffic controller. There was also some

agreement when it came to CTI schools. There are differences when it comes to

CTI schools, as it relates to curriculum, simulation equipment and faculty. The

Barrier Analysis and the Independent Review Panel made recommendations that

CTI schools need to be evaluated not only as it concerns the degree programs but

also the pool of students as it pertains to diversity. Another driving issue that is

critical to effecting any changes is budget. Over the last several years, lack of or

timely budgets have had an adverse impact on the FAA and has not allowed them

to hire the numbers necessary to meet the projected losses. Sequestration and the

budget issues has not only affected the new hires but has had an impact on the

current FAA employee, causing important research and innovative technology

improvements to stop.

Faced with the results and recommendations from these two reports the FAA instituted dramatic changes to the hiring process in early 2014. In December 2013, the CTI schools were notified via email from the Technical Training Office in the Air Traffic Organization (ATO) that a teleconference would be conducted in January 2014 to discuss the hiring change process. The purpose of the changes were to allow the FAA to make improvements to the way it selects, trains and assigns controllers. The goal was to improve the decision making process and increase the objectivity as to the assessment of candidates. In simple terms, the changes to the hiring process included: (a) evaluating all candidate sources against the same set of qualification standards, (b) revisiting the testing process, and (c) eliminating the Central Selection Panels (C. J. Bostick, personal communication, March 12, 2014). The assessment process for the new hiring announcement included a biographical assessment (BA) and the AT-SAT. According to Bostick, the BA allowed the FAA to

> meet immediate hiring needs based on FAA Academy capacity, continue
> the goal of improving new hires' success rates at the academy and onto
> achieving full controller performance certification and to increase the
> speed and efficiency in the decision making process. (p. 2)

Conclusion

The FAA's public hiring announcement in February attracted in excess of 20,000 applicants. The eligibility to apply was equal for all as long as the general hiring requirements were met. Even though there was somewhere in the range of 3,000 students who had completed their education at a CTI institution, were recommended for hire by the institution and passed the AT-SAT, they still had to reapply. Prior to the new announcement, the FAA kept a pool of qualified applicants that met all initial requirements, and if they were not selected by a previous CSP, the FAA maintained the list of applicants until they timed out due to age or requested to be removed from the hiring list. This change was a shock to all universities in the CTI program. When the announcement was released over 28,000 people applied and only eight percent passed the initial biographical questionnaire or about 2,200. To the dismay of the CTI schools, many students who applied were turned down after taking the biographical questionnaire. The response was simply you were not qualified. Many of these students had graduated and received diplomas from accredited institutions across the country.

A number of news reports were aired on the controversy and many students and air traffic controllers were interviewed. Hilkevitch (2014) cited critics who stated the biographical questionnaire "weeded out many applicants before they had an opportunity to take the traditional air-traffic control tests that assess knowledge and aptitude for working in the fast-paced, high-tension world of directing planes" (para. 10). He goes on to indicate that this may be more of a

diversity push by the FAA and aviation experts are concerned that this type of push, hiring "candidates with no aviation experience could compromise flight safety and lead to high wash-out rates" (para. 11). A concern of many was that in this new process, safeguards were not in place to ensure that the person filling out the application was actually the same person who then took the questionnaire. The 62 questions in the exam were more suited to a personality test than a biographical assessment. For example, questions dealing with how your peers might look or describe you, sports played in high school, and least favorite subject in high school (Ferrugia & Shelley, 2014). Those students that did not pass the biographical questionnaire were given a red X and they were biographically ineligible. Multiple attempts by many students to the FAA requesting an explanation on what areas they might have been ineligible have not been answered.

Other groups with a vested interest in the air traffic control field were dismayed at the process and results of the announcement. The National Air Traffic Controllers Association's (NATCA) union leadership, President Paul Rinaldi and Vice President Trish Gilbert (2014) released the following statement:

> Our confidence in the Federal Aviation Administration's first step in addressing a significant air traffic controller hiring need has unfortunately turned to deep concern. The FAA's recent nationwide controller job announcement drew more than 28,000 candidates. However, only eight

percent – approximately 2,200 – passed the initial "Biographical Questionnaire" evaluation and advanced in the hiring process. The FAA expected 30 percent to advance. (para. 1)

Congressional interest was also raised when many constituents approached representatives looking for answers. Senator Patty Murray (D-WA), chairman of the Senate Transportation Appropriations Subcommittee, held hearings with the Department of Transportation officials. Sen. Murray was very concerned and stated that she wanted to know why

> highly qualified CTI applicants were being turned away due to the BQ, and said that controllers union NATCA is also concerned about this. Nobody understands what the BQ is supposed to measure, or why people are failing. (Poole, 2014, para. 3)

Poole stated that after the hearings and doing further research it appears that the "the new recruitment approach was thought up by the FAA Human Resources department, not the ATO, and therefore does not represent ATO thinking on the best way to ensure a highly qualified 21st century NextGen workforce" (para. 4).

An audit was conducted in 2005 by the Department of Transportation's Inspector General on reducing training time for newly hired air traffic controllers. The results of the report stated the

FAA could reduce controller training time and costs by identifying specific coursework conducted at the FAA Academy that could be discontinued as part of government-provided training and instead making the coursework a prerequisite to employment as an FAA controller. (FAA, 2005, p. 2)

Five colleges and universities were visited and it was found that the majority of subjects taught at these institutions (35 of 38) were also taught at the Academy. Each of those early schools and including the 36 of today, were willing to change curriculums to meet FAA requirements and many willing to purchase high-fidelity simulation at no cost to the government. The final recommendations of the audit were that the FAA evaluate the curriculum at the CTI schools and determine if it could be discontinued and make higher education a prerequisite to employment as a controller. The report also stated that the "FAA could save between $16.8 million and $21.3 million over the next 9 years (FY 2006 to FY 2014)" (p. 9).

Today, across the country, many of the CTI schools have invested millions of dollars to upgrade their curriculum and purchase state-of-the-art high-fidelity simulation, similar to what the Academy is using. The goal was to provide the agency with the most highly qualified employee. In the FAA's 2005 audit, the Inspector General also recommended that a minimum level of education be

required for the air traffic control profession. This idea is not new nor is it something the government doesn't already require. Many *professional* jobs in the government today require a minimum level of education. It would appear that with the information provided, the FAA has completely ignored the capabilities and input the CTI institutions have provided over the years. A report by the FAA's external training initiative office would seem to contradict information associated with diversity. A diversity questionnaire created by the FAA and submitted to the CTI schools states that the information received would indicate that "It is clear that the 36 academic institutions helped introduce the air traffic control profession to minorities who may have not been familiar with jobs and opportunities that the field of aviation represents" (FAA ATO Safety and Technical Training, 2013, p. 1). The report goes on to state that it is in fact a top priority of all the CTI schools to increase their minority presence, in both the student populations and faculty members. In the conclusion of the report it says "it is clear that the FAA AT-CTI schools are making great strides to incorporate minority students and faculty into their programs" (p. 3).

Many of CTI schools are in limbo and some questioning whether they should continue the effort and expense to keep their programs. The one issue of great importance are the students and the time and financial outlays that they have made to pursue a degree with the hope of becoming an air traffic controller. Time will tell if the FAA will continue with the same hiring processes or with the

outrage from many areas, will this force a change that is transparent and will

benefit the flying public and provide the FAA with the most qualified applicants.

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Appendix

AT-CTI Schools – Accreditation and Degrees

Institution/Accreditation	Approved Degree Program
Aims Community College North Central Association of Colleges and Schools, The Higher Learning Commission	ASSOCIATES OF APPLIED SCIENCE • Air Traffic Control
Arizona State University North Central Association of Colleges and Schools, The Higher Learning Commission	BACHELOR OF SCIENCE • Air Traffic Management
Broward College Southern Association of Colleges and Schools, Commission on Colleges	ASSOCIATES OF APPLIED SCIENCE • Air Traffic Control
Community College of Beaver County Middle States Commission on Higher Education	ASSOCIATES OF APPLIED SCIENCE • Air Traffic Control Terminal or En Route
Daniel Webster College New England Association of Schools and Colleges, Commission on Institutions of Higher Education	BACHELOR OF SCIENCE • Aviation Management • Air Traffic Control
Dowling College Middle States Commission on Higher Education	BACHELOR OF SCIENCE • Aviation Management • Aerospace Systems Technology
Eastern New Mexico University – Roswell North Central Association of Colleges and Schools, The Higher Learning Commission	ASSOCIATES OF APPLIED SCIENCE • Air Traffic Control
Embry Riddle Aeronautical University - Daytona Southern Association of Colleges and Schools, Commission on Colleges	BACHELOR OF SCIENCE • Air Traffic Management • Aviation related when accompanied by an ATC Minor (revised 8/3/2011) MASTERS of Science • Aeronautics (Name Changed 8/3/2011)

Institution/Accreditation	Approved Degree Program
Lewis University North Central Association of Colleges and Schools, The Higher Learning Commission	BACHELOR OF SCIENCE • Air Traffic Control Management • Minor in Air Traffic Control Management • Aviation Flight Management • Aviation Security ASSOCIATES DEGREE • Air Traffic Control Management • Minor in Air Traffic Control Management • Aviation Flight Management • Aviation Security
Metropolitan State College of Denver North Central Association of Colleges and Schools, The Higher Learning Commission	BACHELOR OF SCIENCE • Aviation Technology
Miami Dade College Southern Association of Colleges and Schools, Commission on Colleges	ASSOCIATES DEGREE • Aviation Administration • AS Professional Pilot Technology
Middle Georgia College Southern Association of Colleges and Schools, Commission on Colleges	BACHELOR OF SCIENCE • Air Traffic Management ASSOCIATES OF APPLIED SCIENCE • Air Traffic Management
Middle Tennessee State University Southern Association of Colleges and Schools, Commission on Colleges	BACHELOR OF SCIENCE: AEROSPACE
Minneapolis Community and Technical College North Central Association of Colleges and Schools, The Higher Learning Commission	ASSOCIATES OF APPLIED SCIENCE • Air Traffic Control
Mount San Antonio College Western Association of Schools and Colleges, Accrediting Commission for Community and Junior Colleges	ASSOCIATES DEGREE • Aviation Science
Purdue University North Central Association of Colleges and Schools, The Higher Learning Commission	MASTERS OF SCIENCE • Aviation Technology BACHELOR OF SCIENCE • Aviation Technology ASSOCIATES DEGREE • Aviation Technology
Sacramento City College Western Association of Schools and Colleges, Accrediting Commission for Community and Junior Colleges	ASSOCIATES DEGREE • Air Traffic Control
St. Cloud State University North Central Association of Colleges and Schools, The Higher Learning Commission	BACHELOR OF SCIENCE • Aviation Operations • Professional Flight • Management
The Community College of Baltimore County Middle States Commission on Higher Education	ASSOCIATES OF APPLIED SCIENCE • Air Traffic Control: Terminal or Enroute
Texas State Technical College - Waco Southern Association of Colleges and Schools, Commission on Colleges	ASSOCIATES OF APPLIED SCIENCE • Applied Science in Air Traffic Control

Institution/Accreditation	Approved Degree Program
Tulsa Community College **North Central Association of Colleges and** **Schools, The Higher Learning Commission**	ASSOCIATES OF APPLIED SCIENCE • Aviation Sciences Technology • Air Traffic Control
University of Alaska Anchorage **Northwest Commission on Colleges and** **Universities**	ASSOCIATES OF APPLIED SCIENCE • Air Traffic Control BACHELOR OF SCIENCE • Aviation Technology ATC emphasis.
University of North Dakota **North Central Association of Colleges and** **Schools, The Higher Learning Commission**	BACHELOR OF SCIENCE • Aeronautics w/major in ATC
University of Oklahoma **North Central Association of Colleges and** **Schools, The Higher Learning Commission**	BACHELOR OF SCIENCE • Aviation Management ATC Minor • Aviation-Air Traffic Management • Aviation Professional Pilot-Air Traffic Minor
Vaughn College of Aeronautics and Technology **Middle States Commission on Higher Education**	ASSOCIATES OF APPLIED SCIENCE • Airport Management • Aircraft Operations • Aviation Maintenance • Electronic Engineering Technology (Avionics Option) BACHELOR OF SCIENCE • Airport Management • Aircraft Operations • Aviation Maintenance • Airline Management • Aviation Maintenance Management • Airline Management • Electronic Engineering Technology (Avionics Option)
Western Michigan University **North Central Association of Colleges and** **Schools, The Higher Learning Commission**	BACHELOR OF SCIENCE • Aviation Flight Service • Aviation Maintenance Technology • Aviation Science and Administration