

A History of the Air Traffic Control Collegiate Training Initiative (AT-CTI) Program

Darendia McCauley
Dana Broach
FAA Civil Aerospace Medical Institute
Oklahoma City, Oklahoma

In the 1989 FAA Flight Plan for Training, the Federal Aviation Administration (FAA) proposed testing the concept of off-loading some portion of air traffic control specialist (ATCS) training to colleges and universities. This was the genesis of the program that became known as the Air Traffic Collegiate Training Initiative (AT-CTI). The AT-CTI program was initiated as a cost saving effort to defer some of the basic ATCS educational elements to participating colleges and universities. Beginning in 1989, the FAA entered into partnerships with selected post-secondary educational institutions to conduct some portion of ATCS technical training as a demonstration program. The program grew from an original five institutions to a total of 36 participating colleges and universities by 2012. There are currently 30 active AT-CTI participating colleges and universities.

Efficient training and reduction in training attrition of air traffic control specialists (ATCSs) has long been a topic of concern for FAA and its stakeholders (for examples, Davis, Kerle, Silvestro, & Wallace, 1960; GAO, 2008). One of the ideas to mitigate inefficiency of training and assist with the reduction of training attrition was a partnership with existing post-secondary academic institutions to provide training. With their theoretical and practical expertise in training and education, using colleges and universities to train ATCSs emerged as a viable option for improving the training process and reducing attrition (Means, et al., 1988). In order to plan for the staffing required for anticipated increases in air traffic operations and changes in technology, FAA developed a *Flight Plan for Training* (FAA, 1989). Training issues were addressed along with specific recommendations for off-loading some ATCS training through a collaboration between FAA and post-secondary institutions. *Flight Plan for Training* outlined the Pre-Hire Air Traffic Control Training Initiative, which became the starting point for the Air Traffic Collegiate Training Initiative (AT-CTI) Program. Pre-hire training at the post-secondary level was proposed as a “new source of highly qualified and motivated air traffic control specialists.” (FAA. 1989, p.28). *The Flight Plan for Training* proposed a university-based pilot training program to see if graduates could be hired from these institutions with the equivalent of FAA Academy training. This pilot program evolved over time and became the AT-CTI Program. Early congressional support specifically for the training collaboration further contributed to the early development of the program through FY1990 FAA appropriations (*Department of Transportation and Related Agencies Appropriations Act, 1990*).

In 1991, the FAA began a partnership with five post-secondary educational institutions to provide initial training of ATCSs. This initial phase was called the Pre-Hire Air Traffic Control Demonstration Program. The program grew to include as many as 36 participating colleges and universities and evolved to become the Air Traffic Collegiate Training Initiative (AT-CTI) Program. A more detailed historical review of the AT-CTI program can be found in *History of*

the Air Traffic Collegiate Training Initiative (AT-CTI) Program 1991-2016 (Broach, McCauley, & Sanchez, 2019).

AT-CTI Program Development Expansion and Evaluation

Program Development

In order to administer the demonstration pilot, FAA developed and published the *Pre-Hire Air Traffic Control Demonstration Program* (FAA order 3120.26). The order specified an informal five-year period for the demonstration, but provided no termination criteria or date. The order did establish criteria for program expansion to other academic institutions. The order further specified FAA oversight responsibilities, including an evaluation by the Civil Aeromedical Institute (CAMI, now the Civil Aerospace Medical Institute). In addition, the order clearly stated that “The hiring of graduates of these programs will be governed by FAA’s recruitment needs for the ATC occupation; FAA will not guarantee employment of graduates” (p. 3).

In 1991, five institutions entered into agreements with the FAA for the training of air traffic controllers. These five academic institutions were:

- Minnesota Air Traffic Control Training Center (MnATCTC), Eden Prairie, MN (also known as the MARC program);
- Hampton University (HU), Hampton, VA;
- Community College of Beaver County (CCBC-PA), Monaca, PA;
- University of North Dakota (UND), Grand Forks ND; and
- University of Alaska, Anchorage (UAA), Anchorage, AK.

The FAA hired 99 graduates under the program by 1992, with 66 more in 1993 hired and placed in facility field training. In 1994 Congress codified the legal authority for the AT-CTI program by amending Section 44506 of Title 49 of the United States Code (49 U.S.C. § 44506) with Public Law 103-272, July 5, 1994. The statute granted discretionary authority to the FAA Administrator to continue existing agreements and expand to additional academic institutions.

Program Expansion

Program expansion was heavily influenced by the fluctuations in ATCS hiring, as well as changes in selection criteria. The first program expansion was approved by the Director of Air Traffic in January of 1997. Nine post-secondary institutions were selected. Participating institutions were required to teach specific elements of the FAA Academy’s initial qualifications training curriculum. Criteria for institutional participation also included being an accredited, nonprofit, degree granting institution offering a non-engineering aviation degree; having a viable aviation program with non-engineering graduates; and within specified location parameters.

The nine institutions selected in the 1997 expansion were:

- Vaughn College of Aeronautics, Flushing NY;
- Daniel Webster College, Nashua, NH;
- Dowling College, Oakdale, NY;
- Embry-Riddle Aeronautical University, Daytona Beach, FL;
- Inter American University of Puerto Rico, San Juan, PR;
- Miami-Dade Community College, Miami, FL;

- Middle Tennessee State University, Murfreesboro, TN;
- Mount San Antonio College, Walnut, CA; and
- Purdue University, West Lafayette, IN.

Those nine new schools joined four other colleges that had been participating in the AT-CTI program for five years as the AT-CTI Program. MnATCTC was no longer identified as an AT-CTI Program participant, since MnATCTC was a funded program and all other AT-CTI schools were unfunded. The MnATCTC program was operating under different parameters and no longer considered as a part of the AT-CTI program.

The anticipated retirement of a large number of ATCSs approaching retirement age prompted a focus on increasing the qualified ATCS applicant pool. Using AT-CTI participating post-secondary training institutions as a resource for training prospective ATCSs, as well as the diversion of training expense from the Academy, prompted the second AT-CTI expansion occurring from 2007 through 2012. This expansion promoted not only an increase in the number of schools and qualified ATCS applicants, but a potential increase in the diversity of ATCS applicants, as well.

This expansion time frame also introduced a rigorous evaluative component for AT-CTI certification as well as a formal mechanism for an evaluative recertification. The evaluative materials for the certification of new programs and recertification of existing programs was provided by JJA Consultants (Fairfax, VA) through the *Air Traffic Collegiate Training Initiative Operational Guidelines and Management Oversight Package* (FAA, 2007) and introduced at an annual Best Practices Conference. If the applying school met minimum eligibility criteria, the detailed application was reviewed for five major components: 1) *Organizational Foundation and Resources*, 2) *Organizational Credibility*, 3) *Curriculum and Facilities*, 4) *Student Performance*, and 5) *Organizational Performance*. Applications were scored on the factors with an overall school evaluation score. In addition to the existing AT-CTI participants nine new participating colleges were added:

- Arizona State University, Mesa, AZ;
- Community College of Baltimore County, Baltimore, MD;
- Florida State College at Jacksonville, Jacksonville, FL;
- Green River Community College, Auburn, WA;
- Kent State University, Kent, OH;
- Lewis University, Romeoville, IL;
- Metropolitan State University of Denver, Denver, CO;
- Middle Georgia State University, Cochran, GA; and
- University of Oklahoma, Norman, OK.

In 2008, a similar process resulted in eight additional new colleges:

- Aims Community College, Greeley, CO,
- Broward College, Pembroke Pines, FL,
- Eastern New Mexico University, Roswell, NM,
- Embry Riddle Aeronautical University, Prescott, AZ,
- Jacksonville University, Jacksonville, FL,
- Le Tourneau University, Longview, TX,
- Saint Cloud State University, Saint Cloud, MN, and
- Tulsa Community College, Tulsa, OK.

In 2009, five more colleges were added:

- Florida Institute of Technology, Melbourne, FL,
- Hesston College, Hesston, KS,
- Sacramento City College, Sacramento, CA,
- Texas State Technical College, Waco, TX, and
- Western Michigan University, Battle Creek, MI.

Program Evaluations

Formative Evaluation 1996

In keeping with FAA Order 3120.26, CAMI initiated an evaluation and published a *Formative Evaluation of the Collegiate Training Initiative – Air Traffic Control Specialists (CTI-ATCS) Program* (Morrison, Fotohui, & Broach, 1996). The formative evaluation focused on the organization and implementation process of the 1991 demonstration project. The evaluation was favorable overall and indicated the programs at the five demonstration project educational institutions were functioning as expected. The educational institutions were making innovations beneficial to the FAA. The report did provide a caution that curtailment in ATCS hiring could cause a significant challenge to the AT-CTI program, with a reduction in hiring based on reduced need for ATCSs.

2006 Evaluation

The *Air Traffic – Collegiate Training Initiative (AT-CTI) Evaluation* (FAA, 2006) was conducted to document the progress of the AT-CTI Program and ensure that FAA business needs were being met. Those needs were providing high quality ATCS candidates, reduce training costs, and ensure prerequisite training had been provided. Specific evaluation goals supporting those business needs were also addressed. The evaluation summarized that “The AT-CTI schools and the FAA stakeholders responsible for administering the program believe that the AT-CTI Program is an effective recruitment tool for quality applicants who possess a broad base of aviation knowledge.” (FAA, 2006, p. 5-1). With the recommendation for an expansion of the program, there were also recommendations for improvement in instructional quality across individual schools, provision of better FAA hiring information for students, addressing student academic disparity across AT-CTI schools, exploring the possibility of the provision of additional Academy courses, and the development and implementation of performance based metrics for AT-CTI schools. The second AT-CTI program expansion in 2007 followed this evaluation. A detailed and rigorous annual evaluative component for AT-CTI certification was also introduced following 2006 recommendations.

2007-2012 Annual Certification and Evaluation

The initial certification of existing schools and entry requirements for new schools in 2007 marked the beginning of detailed and rigorous annual evaluations for participating and new AT-CTI schools. There were annual best practices workshops sponsored by FAA, where information on evaluative assessments was presented. Identified best practices were also presented in collaboration with participating schools. Schools could achieve full certification, be

placed on probation, or have certification denied based on the annual evaluative reviews. During this time, FAA exercised rigorous program oversight for the AT-CTI program.

External Reviews

In 2011, an Independent Review Panel (IRP) was convened at the request of the FAA Administrator to review the ATCS selection process and make recommendations for improvement. The panel had members from AT-CTI schools, union representation, and FAA. The IRP made several recommendations regarding selection and training, but also made some recommendations concerning the impact of AT-CTI schools on the career of an ATCSS. Of particular interest was the recommendation for differentiating schools by levels based on the differing training opportunities offered at each AT-CTI school. The IRP also recommended that AT-CTI participation and the level of that AT-CTI school influence the status of an ATCS applicant.

In keeping with the FAA commitment to diversity in hiring, the agency initiated detailed reviews of the ATCS hiring process and its possible impact on equal opportunity and possible barriers to employment. These analyses produced several concerns related to the hiring process (APT Metrics, Inc., 2013; Outtz & Hanges, 2013). In response, changes were made to the hiring process, including introduction of a biographical assessment, a requirement that all applicants, including AT-CTI graduates, take the Air Traffic Selection and Training (AT-SAT) exam, and competition under a single vacancy announcement open to “all sources.” This meant in effect, AT-CTI graduates had the same status as general public hires, since all competed under the same qualifications criteria. The changes affected AT-CTI hiring.

Conclusion

In 2016, as required by a law passed by Congress, FAA initiated a pool process in which applicants were grouped into one of two hiring pools based on applicant background. Pool 1 was comprised of qualified veterans and AT-CTI graduates. Pool 2 was comprised of all other applicants. Hiring in equal proportion from both pools was also specified. In 2017 FAA began to re-establish relationships with the AT-CTI schools. That effort continues with a strong commitment to maintain the long-standing productive relationship with those schools.

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