

**REVIEW OF SCREENING, PLACEMENT, AND
INITIAL TRAINING OF NEWLY HIRED AIR
TRAFFIC CONTROLLERS**

Federal Aviation Administration

Report Number: AV-2010-049

Date Issued: April 1, 2010



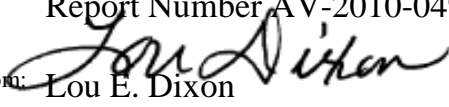
U.S. Department of
Transportation

Office of the Secretary
of Transportation
Office of Inspector General

Memorandum

Subject: **ACTION:** Review of Screening, Placement, and
Initial Training of Newly Hired Air
Traffic Controllers
Federal Aviation Administration
Report Number AV-2010-049

Date: April 1, 2010

From: 
Lou E. Dixon
Assistant Inspector General
for Aviation and Special Program Audits

Reply to
Attn. of: JA-10

To: Federal Aviation Administrator

This report provides the results of our audit of the Federal Aviation Administration's (FAA's) policies and procedures for screening, placing, and initially training newly hired air traffic controllers. Over the next decade, FAA plans to hire and train nearly 15,000 new controllers to replace those who were hired after the 1981 strike and are now retiring. With this large influx of new hires planned, examining and improving its processes for integrating new controllers into the current workforce will be a significant challenge for FAA.

We conducted this review at the request of Representative Jerry F. Costello, Chairman of the House Subcommittee on Aviation. Chairman Costello expressed particular concern about whether FAA's screening test identifies candidates' potential to become air traffic controllers and whether the FAA Academy adequately trains candidates before FAA places them at facilities.

Accordingly, our audit objectives were to (1) evaluate how FAA determines whether candidates have the requisite abilities to become successful controllers, (2) determine what procedures FAA uses to place controllers at air traffic facilities, and (3) assess whether the initial training provided by the FAA Academy adequately prepares new controllers for facility on-the-job training (OJT). We conducted this review between December 2008 and October 2009 in accordance with government auditing standards prescribed by the Comptroller General of the United States. Exhibit A details our scope and methodology. Exhibit B lists the specific organizations we visited or contacted.

RESULTS IN BRIEF

FAA's process for selecting and placing new controllers does not sufficiently evaluate candidates' aptitudes before placing them at facilities. Currently, FAA does not use results of its controller aptitude test (the Air Traffic Selection and Training test, or AT-SAT) to determine the level of facility in which new controllers are placed. Instead, FAA assigns new controllers to locations based primarily on their facility choice and available vacancies. As a result, new controller candidates are being assigned to some of the busiest air traffic control facilities in the Nation with little consideration of whether they have the knowledge, skills, and abilities necessary to become certified controllers at those locations. These include critical facilities within the National Airspace System, such as the Southern California Terminal Radar Approach Control and the Chicago O'Hare and Atlanta Hartsfield Air Traffic Control Towers.

FAA also does not use candidates' initial performance at the Academy to determine the level of facility in which new controllers are placed. Although all controller candidates must attend 2 to 3 months of initial training at the Academy after passing AT-SAT, controller candidates are assigned to a facility before entering Academy training.

Initial training at the FAA Academy is currently focused more on short-term memorization rather than developing a long-term skill set and, according to facility managers, does not adequately prepare candidates to begin facility training at their assigned locations. Facility managers we spoke with stated that candidates arrive after passing Academy training unprepared to begin facility training, often requiring additional time and resources to refresh them on subjects previously taught at the Academy. FAA internal studies have noted similar concerns. In an internal analysis conducted in November 2007, FAA found that Academy training needed to focus more on basic air traffic control concepts—such as phraseology, issuing clearances, and aircraft characteristics—and less on retaining knowledge just long enough to pass a test. The study recommended numerous changes to initial training, but more than 2 years since its completion, changes have not been implemented.

We are making recommendations to FAA on actions needed to improve its controller screening, placement, and initial training programs.

BACKGROUND

After the 1981 controller strike, FAA screened candidates primarily using a 9-week training course taught at the FAA Academy. The program proved highly effective at identifying candidates' potential abilities—with only a 57-percent pass rate for the 27,925 controller candidates screened between 1981 and 1992.

However, this process was expensive, costing about \$20,000 per candidate, so FAA began developing AT-SAT in the 1990s to achieve a less costly and more streamlined screening tool to identify candidates with the best controller aptitudes. In designing AT-SAT, FAA scientists performed a detailed analysis to identify the specific tasks that controllers must complete and measure the skills that support those tasks. Currently, FAA employs the following three-step indoctrination process for newly hired air traffic controller candidates:

- **Screening:** AT-SAT consists of an 8-hour series of aptitude tests. Controller candidates with no previous air traffic control experience and those who have graduated from a Collegiate Training Initiative program are screened using AT-SAT.¹ Candidates must score at least 70 percent on the exam to be considered for employment. Controller candidates with prior air traffic control experience, such as ex-military controllers, are exempt from taking AT-SAT.
- **Placement:** After completing screening, new candidates are assigned to a facility location. This is done by creating a list of facility vacancies and eligible applicants. A group of air traffic facility managers then meets at least once a quarter and attempts to match the assignment preference of each candidate to the needs of specific air traffic control facilities. Air traffic control facilities are categorized by levels (4 through 12) based on the complexity and number of operations. Level 4 facilities are the least complex while Level 12 are the most complex. Controllers' base salaries are determined by the level of the air traffic control facility to which they are assigned.
- **Initial Training:** Before they begin training at their assigned facilities, most new controllers must complete 2 to 3 months of initial training at the FAA Academy. This training consists of lectures and simulation problems in basic air traffic control concepts and procedures. Upon completion of these courses, the candidate must then pass the Performance Verification, or PV. This is a final examination of learned knowledge and skills using simulators and is overseen by current operations supervisors from selected air traffic facilities.

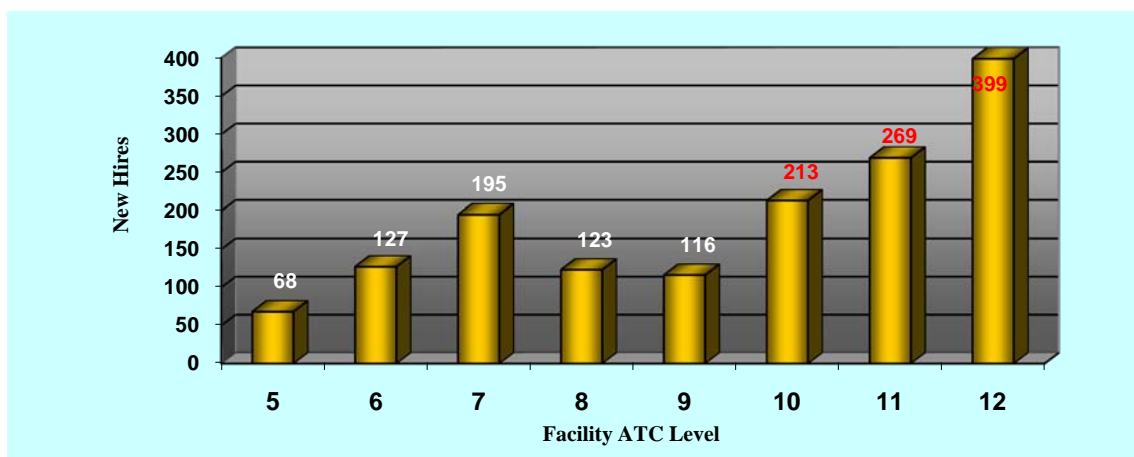
FAA Is Not Using Its AT-SAT Screening Tool Effectively

FAA does not use AT-SAT results to determine the level of facility in which new controllers are placed even though the number of inexperienced controller candidates being hired and screened by AT-SAT is increasing. For example, the number of new hires with no prior air traffic control experience increased from 7 percent of those hired in fiscal year (FY) 2007 to approximately 72 percent during the first half of FY 2009. This has resulted in an increase of inexperienced controllers being assigned to high level air traffic control facilities. As shown in

¹ (CTI) Colleges that provide FAA-accredited courses in air traffic control principles.

the chart below, in FY 2008, 58 percent (881 of 1510) of all newly hired controllers with no prior air traffic control experience were placed at Level 10 through 12 facilities (the busiest and most complex in the Nation). These include facilities such as the Southern California Terminal Radar Approach Control and the Chicago O'Hare and Atlanta Hartsfield Air Traffic Control Towers.

Figure 1. Facility Placement of New Controllers with No Prior Air Traffic Control Experience During FY 2008



Source: Aviation Careers Division, FAA Academy

In addition, overall AT-SAT scores have been higher than originally expected. Although the FAA scientists who designed AT-SAT predicted that only 67.5 percent of all applicants would pass AT-SAT as originally designed, nearly 93 percent of all applicants currently achieve a passing score. AT-SAT has a high pass rate primarily because FAA reweighed elements from the original test, based on concerns of possible adverse impacts, which ultimately reduced focus on specific air traffic control aptitudes.

FAA also groups AT-SAT results by placing all passing scores into two broad “score bands” making it difficult to match a controller’s aptitudes with the appropriate facility level. Candidates who score from 70 to 84.9 are ranked as “Qualified,” while those who score from 85 to 100 are ranked as “Well Qualified.” Therefore, a candidate who scored an 85 percent on AT-SAT could unknowingly be assigned to a Level 12 facility over a candidate that scored 100 percent.

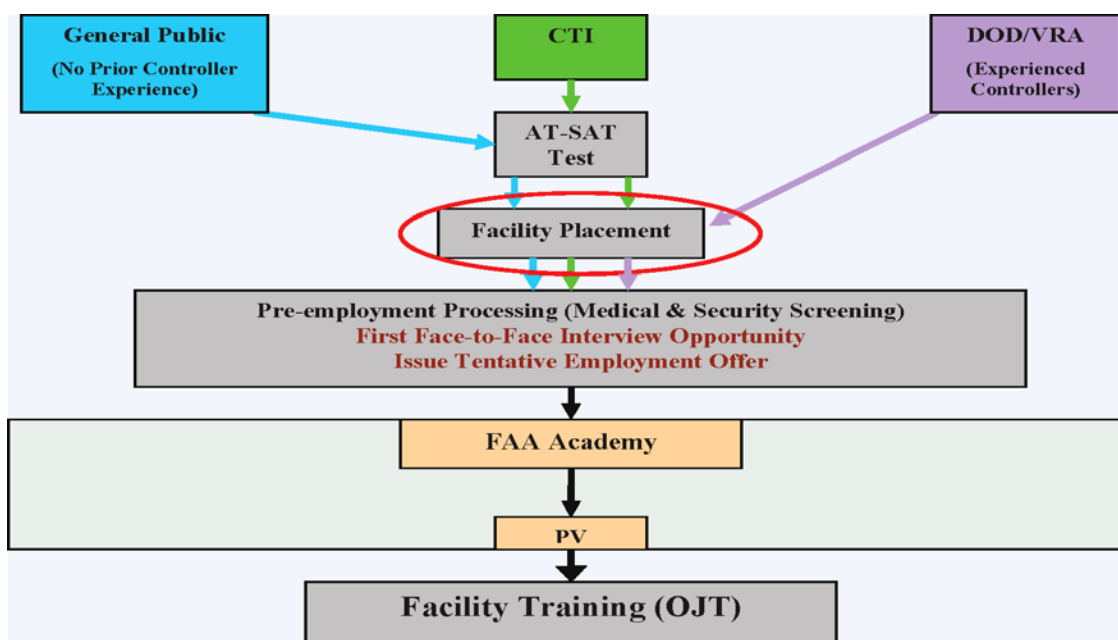
Without a more effective means of measuring the potential for success at high level facilities, FAA runs the risk of being unable to retain a sufficient number of qualified controllers at some of the most critical facilities within the National Airspace System. Early indicators show this is an issue that needs to be closely monitored as more new controllers end training. For example, although most new controllers are still in various stages of training (currently over 3,200 according to FAA), of the 233 new controllers with no prior air traffic control experience who

ended training during FY 2008, 109 did not certify at their assigned location. The Civil Aeronautical Medical Institute (CAMI) plans to conduct a statistical assessment of AT-SAT to determine if the test scores could be used for ascertaining the level of facility in which candidates would likely succeed. However, CAMI scientists we spoke with candidly expressed doubt about the test's ability to effectively screen controller candidates.

FAA Places New Controllers at Facilities Based Primarily on Candidates' Preferences

FAA currently assigns new controller candidates to facilities by considering candidates' location preference, a summary of information from their employment application, and a list of job openings. As shown in figure 2, controller candidates are assigned to a facility before they undergo medical and security screening, receive a tentative employment offer from the Agency, or attend the FAA Academy for initial training. Candidates are not even given a face-to-face interview with FAA officials prior to receiving their facility assignment.

Figure 2. FAA Current Screening, Placement, and Initial Training Process



Source: FAA and Office of Inspector General

The facility placement process is conducted by a Centralized Selection Panel, consisting of managers from selected air traffic facilities, that assigns candidates using a referral list. As shown in figure 3, (an actual referral list used in January 2009), these panel members have only limited data on candidates' AT-SAT results

(column C). They primarily base facility assignments on applicants' geographical choices by state (columns E and F) and applicants' choices on their desired type of facility—either en route or terminal (columns G and H).

Figure 3. Example of Referral Lists Used by Centralized Selection Panels

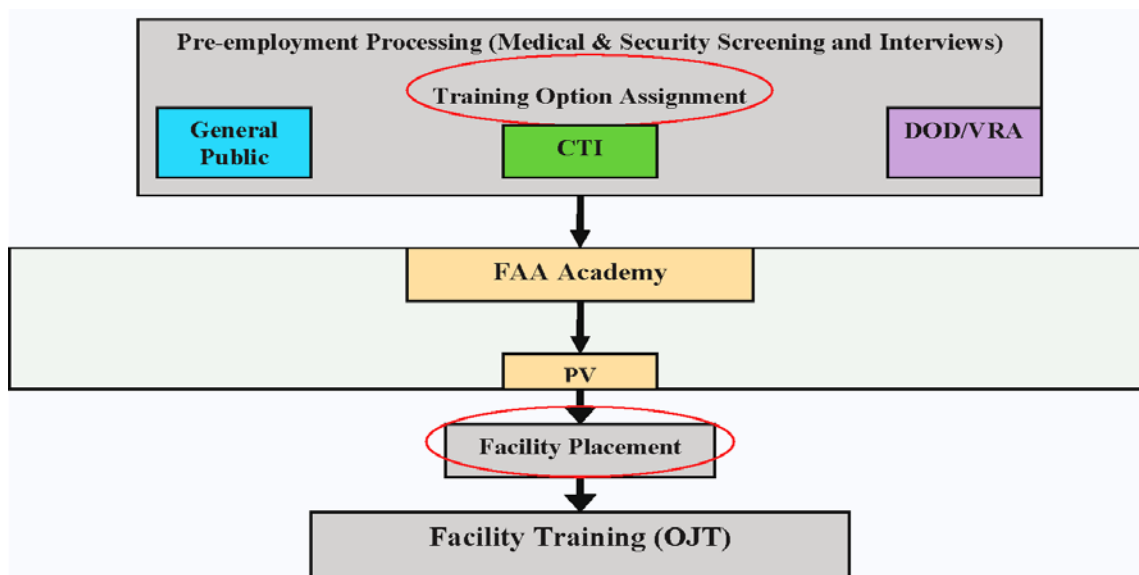
Ohio State List for PUBNAT3-9613 Jan 09 AT CSP										
A	B	C	D	E	F	G	H	I	J	K
Action Code/EOD	Vets Pref	WQ or Q	Name	Geo Pref 1st Choice State	Geo Pref 2nd Choice State	Position Type(s)	Position Type(s)	Residence State	C/E Facility	Comments
		WQ	Name Deleted	NC	OH	Enroute	Terminal	NC		North Carolina bid preferences would be Wilmington, Charlotte, and Asheville. Ohio bid preference would be Cleveland Center.
	NV									
		WQ	Name Deleted	PA	OH	Enroute	Terminal	VA		I would prefer terminal over enroute but will take either. A mid-level facility would be nice. I'm not too picky and have a lot of geographic flexibility.
	NV									
		WQ	Name Deleted	VA	OH	Terminal		VA		
	TP	Q	Name Deleted	OH	GA	Enroute	Terminal	OH		
	TP	Q	Name Deleted	OH	PA	Enroute	Terminal	OH		
	TP	Q	Name Deleted	OH	LA	Enroute	Terminal	LA		
	NV	Q	Name Deleted	OH		Enroute		OH		
		Q	Name Deleted	OH	KY	Terminal		OH		I'm open to any terminal location in Ohio, but my preferences would be CMH, DAY or CAK. In Kentucky, I'm open to SDF, CVG or LEX. Thanks.
	NV									

Source: FAA, Aviation Careers Office, 01/2009

FAA Does Not Use Academy Training as a Performance Criteria in Its Placement Process

The FAA Academy provides an opportunity for many experienced controllers to evaluate candidates in a controlled environment. However, FAA does not use candidates' performance during initial training in determining the level of facility in which the candidates are placed. FAA personnel at FAA Headquarters, the FAA Academy, and selected air traffic control facilities almost unanimously supported making facility assignments after Academy graduation. Though they had some reservations about how much useful knowledge could be gained from the short time that candidates spend in initial training, they agreed that the repositioned placement process would be more performance-based. Figure 4 shows that candidates preparing to attend the FAA Academy could be sent to a Pre-Employment Processing Center, at which time they could receive their training option assignments (En Route or one of the Terminal options), based on their employment application.

Figure 4. Recommended Screening, Placement, and Initial Training Process



Source: Office of Inspector General

Actual facility assignments could be made after Academy graduation, based on the candidates' Academy training performance and the data currently being used, such as prioritized vacancies and candidates' preferences. By moving the placement decision after initial training, FAA could be in a better position to match potentially high performing candidates to appropriately complex facilities. Additionally, students would be motivated to maximize their personal performance, since their assignment location, as well as their pay, would depend on their own performance.

FAA Initial Academy Training Does Not Provide the Fundamentals Necessary for New Candidates To Begin Facility Training

As currently structured, the FAA Academy does not provide new controller candidates with sufficient instruction in the fundamental air traffic control knowledge and skills necessary to become certified controllers. Air traffic managers we interviewed cited weak basic skills in all candidates when they arrive at their assigned location to begin their facility training. This is largely due to the training and testing procedures at the FAA Academy, which facilitate student learning for the purpose of passing a specific test, instead of long-term retention of basic air traffic control procedures.

The FAA Academy's current classroom lecture and testing process makes it easy to learn new material in order to pass the next test, and then forget the information learned. FAA officials describe this as the "learn and dump" approach to Academy training. In a November 2007 study conducted by the Controller

Training and Development Group, FAA found that Academy training methods need to focus more on learning and retaining basic air traffic control concepts.² According to the Group report:

...there needs to be more emphasis placed on fundamentals such as phraseology, procedures, issuing clearances, aircraft characteristics, separation, point outs, and handoffs. An assessment of training conducted by ATO-S [safety] recommended increased emphasis on critical job functions and to minimize the 'learn and dump' syndrome in which students learn something just long enough to pass the test.

The report further recommended air traffic simulator problems that more effectively challenge the knowledge and skills students obtain in the En Route Academy training. All of these changes should encourage the study and application of air traffic control fundamentals. These concerns were reinforced during interviews we conducted with air traffic facility managers. Facility managers stated that they assume Academy graduates have no basic air traffic control knowledge and begin initial training again when Academy graduates arrive at their assigned facility. Other managers develop written assessments to determine the level of basic knowledge of each Academy graduate and then tailor a training program for each one.

Final Performance Verification Tests Do Not Adequately Assess Whether Candidates Have the Core Skills Needed To Succeed as Air Traffic Controllers

All students attending the FAA Academy are required to pass Performance Verification (PV) before reporting to their assigned facility. The PV consists of two parts: a knowledge test and a performance skills assessment. The knowledge test is given halfway through the Academy training program, and every candidate that has taken this test has passed. The performance skills assessment is a set of simulated air traffic scenario problems given at the end of the Academy program. These problems are observed and evaluated by front-line managers who are current air traffic controllers. Almost 95 percent of all candidates pass this assessment and then begin their facility training. However, FAA Academy, CAMI, and facility personnel had several criticisms of this part of the current PV process. For example:

- The PV assessment is limited to either pass or fail. Therefore, facility managers know little useful information about the specific training needs of their incoming candidate controllers. Specifically, managers in the field cited

² *En Route Initial Qualification (Stage 1) Training Redesign Front End Analysis: Requirements, Deficiencies, and Opportunities for Improvement*, November 2007.

weaknesses in air traffic controller fundamentals such as phraseology and aircraft characteristics. Pass or fail scores also mean FAA is missing a critical metric to analyze the relationship between training performance and later potential job performance.

- There is no objective standard by which the PV is graded. Scores are based strictly on the subjective assessment of the designated examiners, which we found can vary extensively. For example, we found instances where candidates passed the PV with two loss of separation errors during the PV while other candidates failed the PV with no loss of separation errors.

The PV could be redesigned as a comprehensive final assessment that ensures candidates have the ability to succeed in facility training. Specifically, it could be designed to assess the specific skills needed to begin facility training and be uniformly applied. This could reduce the attrition rate during facility training by screening out underperforming candidates before they reach their air traffic facility. The November 2007 study conducted by the Controller Training and Development Group also suggested significant changes to the PV similar to those we have identified.

FAA Has Not Implemented Changes Recommended by the Controller Training and Development Group

Despite the critical nature of air traffic controller training at a time when FAA is increasing its hiring of inexperienced new candidates, FAA is only now planning to implement the changes recommended by the 2007 Controller Training and Development Group. According to the Group, the En Route training redesign will be implemented in 2010. However, by then it will have taken more than 2 years to implement the results of a study that uncovered significant deficiencies. FAA needs to expedite this implementation.

FAA is also planning to redesign the FAA Academy training program for the Terminal courses. To date, there have been workgroup discussions about redesigning the structure and classes of the program. Some suggestions include following a plan similar to the En Route training redesign breaking training into groups of candidates going to facilities of similar complexity, and developing new classes. However, the redesign of the Terminal program is moving significantly slower than the En Route program. FAA needs to respond more proactively to its own analysis and implement the recommendations from the November 2007 study in its redesign of both the En Route and Terminal training programs.

CONCLUSION

Air traffic controllers play a critical role in maintaining the safety and efficiency of the National Airspace System. FAA continues to face a tremendous challenge in carrying out its goals to hire and train 15,000 new controllers over the next decade to replace those who were hired after the 1981 strike and are now retiring. To effectively achieve this goal, FAA needs to redesign its screening, placement, and initial training processes to ensure that candidates have the core skill set needed for advanced training, thereby mitigating potential safety risks.

RECOMMENDATIONS

We recommend that FAA:

1. Evaluate the current AT-SAT test and redesign it so that it results in air traffic controllers being placed at locations according to their skill sets.
2. Assign controller candidates to a facility based on their Academy performance in conjunction with data currently available.
3. Implement the recommendations of the November 2007 Controller Training and Development Group for both En Route and Terminal Academy training.

AGENCY COMMENTS AND OFFICE OF INSPECTOR GENERAL RESPONSE

We provided our draft report to FAA for comment on January 26, 2010, and received FAA's formal response on March 18, 2010. In its response, FAA partially concurred with our recommendations and disagreed with some of our report's conclusions, pointing to various successes the Agency has had in hiring and training the next generation of air traffic controllers. We do not question FAA's past accomplishments or its dedication to safety. We have been following and reporting on FAA's progress in this important area since 2003 and have recognized FAA's achievements, particularly with its successful efforts to centralize and expedite its hiring process for new controllers. However, we have also made numerous recommendations for improving its controller training processes, which FAA has generally agreed with and successfully implemented. For example, in 2004, we recommended that FAA develop and implement a national training database, which the Agency currently uses to oversee its large and diverse facility training efforts.³

³ OIG Report Number AV-2004-060, "Opportunities To Improve FAA's Process for Placing and Training New Controllers in Light of Pending Retirements," June 2, 2004. OIG reports are available on our website: www.oig.dot.gov.

To build upon these successes, however, it is important to continually assess and improve the placement process—especially since most new controllers now being hired have no previous air traffic control experience, a significant change from several years ago. Yet, FAA’s response to our report indicates that the Agency believes the process it has used for some time is sufficient. Given the rapidly changing demographics of the controller workforce, we question why FAA would not be more receptive to other opportunities to improve this critical process.

FAA’s response also suggests that our recommendations are based on our own supposition, with which we take exception. Our conclusions and recommendations are based on extensive analyses of FAA’s own data and numerous interviews with FAA and contract personnel responsible for managing controller training on a daily basis at the FAA Academy and air traffic facilities. Those personnel include facility, training, and operations managers; first-line supervisors; FAA and contract instructors; union representatives; CAMI scientists; Terminal Facility Training Redesign task force participants; and bargaining unit controllers. Nearly all of these personnel agreed that FAA needs to improve its methods for placing new controllers. In addition, facility managers and supervisors repeatedly told us that new controllers are arriving at their facilities unprepared to begin facility training. FAA’s response indicates that there is a substantial difference of opinion between FAA Headquarters management and field personnel about the effectiveness of the current controller placement process.

Despite its partial concurrence, FAA generally agreed with the corrective actions we recommended. For recommendation 1, FAA stated that it plans to complete its ongoing evaluation of the fairness, reliability, and utility of the AT-SAT battery [series of tests] as a potential tool to assist in guiding placement decisions by December 31, 2012. In its response to a similar recommendation we made in our 2004 report, FAA stated at that time:

A significant part of AT-SAT administration is the ongoing validation of the instrument. . . . The FAA is hopeful that the data gathered will help us understand how a newly hired controller’s AT-SAT score relates to their training and performance as an on-the-job developmental controller. Depending on the results, this information may allow us to improve our placement processes to better match high aptitude with high-level facilities.

We are hopeful that by the end of 2012 and 8 years of study, FAA will be able to determine conclusively if it can effectively use AT-SAT as a tool in guiding its placement decisions. We consider the recommendation addressed but open pending the completion of FAA’s study.

For recommendation 2, FAA stated that it has a long and successful track record for effectively selecting, training, and assigning new controllers to positions in

facilities. However, as we cited in our report, early indicators and statements from facility managers show this area warrants additional management attention and course redesign and redirection. Although most new air traffic controllers are still in various stages of training, of the 233 new controllers with no prior air traffic control experience who ended training during FY 2008, 109 did not certify at their assigned location. Additionally, since the beginning of FY 2008, FAA reassigned more than 300 new controllers to lower level facilities, and an additional 227 new controllers requested reassignment. While FAA's response emphasized the success of its current placement process and disagreed with "the mechanism of the recommendation," FAA did agree to study restructuring it based on individual controllers' Academy performance. FAA stated that it will complete the study by December 2012. We consider the recommendation addressed but open pending the receipt of a written study evaluating whether Academy performance can be used in the placement of new controllers.

For recommendation 3, FAA partially concurred, stating that while the 2007 En Route "front-end" analysis was used in redesigning the En Route initial training course, it did not cover Terminal training. FAA further stated that it developed and completed a separate analysis for the Terminal environment, which it will use in redesigning the Terminal initial training course. The intent of our recommendation was to take lessons learned from the En Route analysis and apply them to Terminal training so that it does not take another 4 years from study completion to training course redesign. FAA stated that it will adopt the lessons learned in the En Route initial training course redesign. Therefore, we consider this recommendation addressed but open pending completion.

In summary, we will continue to closely monitor FAA's actions to address our recommendations, particularly in light of FAA's dismissive tone regarding their merit.

ACTIONS REQUIRED

FAA's planned actions and target dates are responsive to our recommendations. We consider these recommendations addressed pending completion of the planned actions. We appreciate the cooperation of FAA representatives during this audit. If you have any questions concerning this report, please contact me at (202) 366-0500 or Dan Raville, Program Director, at (202) 366-1405.

#

cc: FAA Deputy Administrator
FAA Chief of Staff
Martin Gertel, M-100
Anthony Williams, ABU-100

EXHIBIT A. SCOPE AND METHODOLOGY

We conducted this performance audit December 2008 to October 2009 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives. The following scope and methodology were used in conducting this review at FAA Headquarters, the FAA Academy, and five Air Traffic facilities.

To evaluate the current performance of FAA's screening, placing and initial training process for newly hired controllers, we collected information from FAA's National Training Database. We requested data on all newly hired controllers from fiscal year (FY) 2008 who either attrited from facility training or successfully completed on-the-job training. We factored out all controllers whose training was still in progress because the final outcome of their on-the-job training was unknown.

We obtained a list from the Civil Aeronautical Medical Institute (CAMI) of all controller candidates who attended the FAA Academy and were screened with the Air Traffic Selection and Training test (AT-SAT). We compared these two data sets and developed a list of all controllers who had been screened with the AT-SAT and had completed or attrited from training during FY 2008. This data set was analyzed by the Senior Statistician for the Office of Inspector General to determine the effectiveness of FAA's screening, placing, and initial Academy training programs.

Finally, to determine common causes and factors that contributed to the training attrition rate, we conducted numerous interviews with FAA and contract personnel responsible for managing controller training on a daily basis at the FAA Academy and air traffic facilities. Those personnel include facility, training, and operations managers; first-line supervisors; FAA and contract instructors; union representatives; CAMI scientists; Terminal Facility Training Redesign task force participants; and bargaining unit controllers.

EXHIBIT B. ORGANIZATIONS VISITED OR CONTACTED

FAA Headquarters, Washington, District of Columbia

National Air Traffic Controllers Association Headquarters, Washington, District of Columbia

FAA Training Academy, Oklahoma City, Oklahoma

Aviation Careers Division, Oklahoma City, Oklahoma

Civil Aeronautical Medical Institute, Oklahoma City, Oklahoma

Eastern Regional Service Center, Atlanta, Georgia

Potomac Terminal Radar Approach Control

Atlanta En Route Center

Atlanta Terminal Radar Approach Control

Atlanta Hartsfield –Jackson International Airport

EXHIBIT C. MAJOR CONTRIBUTORS TO THIS REPORT

<u>Name</u>	<u>Title</u>
Daniel Raville	Program Director
Robert Romich	Project Manager
Erik Phillips	Senior Analyst
Petra Swartzlander	Statistician
Benjamin Huddle	Analyst
My Phuong Le	Analyst
Mi Hwa Button	Analyst
Andrea Nossaman	Writer/Editor

APPENDIX. AGENCY COMMENTS




Federal Aviation Administration

Memorandum

Date: March 18, 2010

To: Lou Dixon, Assistant Inspector General for Aviation and Special Program Audits

From: Ramesh K. Punwani, Assistant Administrator for Financial Services/CFO


Prepared by: Anthony Williams, x79000

Subject: OIG Draft Report: Screening, Placement, and Initial Training of Newly Hired Air Traffic Controllers

Over the past few years, the Federal Aviation Administration (FAA) has demonstrated a proven capability to select the best possible candidates to become air traffic controllers, train them to exacting standards, and ensure only the most qualified certify to control the more than 7,000 aircraft aloft at any moment over the continental United States controlled airspace. Controller candidates are trained to the most rigorous standards in the world, including multiple levels of classroom, simulator, and on the job training before they can reach certified professional controller status. This multi-step process requires placing candidates coming out of the Academy in facilities near where they are willing to live and work. At those facilities, the candidates continue their learning and development in a closely supervised, structured environment. It is an erroneous conclusion to assert that FAA's process for selecting and placing new controllers is ineffective, based only on the limited evaluation of test processes and locations presented in the OIG draft report. It is also not clear that all of the report's recommendations fully comport with contemporary human capital management practices. Furthermore, the OIG draft report provides no analytical basis to support any conclusion that its recommendations would actually improve the process. While the FAA continues to explore scientifically based potential improvements and refinements to its candidate selection and training processes to make them more efficient, U.S. air traffic controllers are among the best in the world and FAA's training is second to none.

New Controllers Bid Locations Where They are Willing to Live and Work

With the considerable and well publicized analyses of efforts to improve human capital management at FAA, the OIG draft report's implication that new controllers should be assigned a location based on the results of a test score is surprising. FAA is not a military organization that shifts and moves staff at will, rather it is managing a highly skilled, unionized civilian workforce, whose viewpoints must be factored into decision making. However, it is not simply a

matter, as implied in the draft report, of new controller choice. Controllers are screened and hired with the intent of filling vacancies at specific locations, but must successfully pass interviews before being assigned to any specific facility. Once assigned to a facility, they first attend initial training at the FAA Academy and then continue their extensive development through a period of closely monitored academics, simulations, and on the job training. Initial academy training is only 10 percent of the total training given to air traffic control students and successful completion of academy training is no guarantee of success in the field. While the draft report expresses concern about the facility level new controllers may be assigned to, any new controller is given extensive training and then must demonstrate the capability to function effectively at a given facility to continue there as an air traffic controller. While FAA recognizes that there may be potential means to further improve the efficiency of this process, and is working to achieve those efficiencies, its dedication to safety is unwavering. FAA is continuing research into its testing and development process to further improve the efficiency of the processes used to screen candidates to increase the likelihood of new controller success at the facilities where they are assigned.

Academy Training Provides Basic Skills for Development in the Field

FAA's air traffic control training academy is the world's preeminent facility of its type, capable of providing basic air traffic control training to individuals with the appropriate aptitude from the general public. During the last round of hiring, initiated in July 2009, FAA received 9,072 applications for a limited number of openings. Of these, 6,378 candidates passed through initial screening processes and FAA ultimately referred 5,516 for testing. A total of 3,148 scored 85 or above and were considered "well qualified." The FAA must consider all 3,148 prior to selecting individuals who scored below 85. Ultimately, the FAA will select and hire about 500 of the very best, most qualified candidates from this list, thus screening out 95 percent of the original applicants.

Currently there are about 3,640 new hire controllers moving through the training system. To address the well anticipated retirement wave, this number is considerably greater than it was in the 1990s, but still lower than historic norms in the post-strike era of the 1980s. The current large number of developmentals has required some adjustments throughout the system. The Academy continues to provide the basic skills training to new controllers, including a fundamental understanding of terminology, processes, and equipment. While this basic training is somewhat critically referred to in the OIG draft report as "short term memorization," it is necessary to establish a basic understanding of the terminology, process, and equipment as a foundation for the more advanced and specific skills needed as an air traffic controller taught at the facility. With the large numbers of new controllers passing through the system, adjustments have been needed downstream from the Academy as well and facilities, including some of the busier terminal radar approach controls (TRACONS), have had to place increased emphasis on new controller development. FAA recognizes that this has placed increased responsibilities upon some facility managers who are unaccustomed to the skill level of new controllers they may be receiving. FAA has already made progress in this area. For example, it is implementing initiatives to help high level Terminal facilities train new hire students assigned to them. These initiatives include adding three weeks of additional simulation scenarios at the FAA Academy for selected students who are assigned to large TRACONS. This Terminal workshop is under development and will be implemented in May 2010. The FAA is currently studying the potential of implementing an alternative hiring process that would place new controllers in lower level facilities and select more experienced controllers into larger, more complex facilities. FAA will

Appendix. Agency Comments

continue monitoring high level facilities such as TRACONS to determine whether further actions could assist in this area.

FAA Continues to Refine and Improve Controller Test and Evaluation Process

FAA relies upon a carefully designed testing process to serve as one initial screen for new controller candidates. The existing Air Traffic Selection and Training Test (AT-SAT) required years of development to ensure that it was accurate, fair, and appropriate. Its predecessors were challenged extensively in court, and AT-SAT was carefully designed to withstand any similar challenge. The test was intended to provide a scientifically based screen to better identify potentially successful air traffic controllers, to increase the efficiency of training and reduce the training failure rate and its associated costs. It has achieved these objectives. Nonetheless, FAA recognized early on the potential for further improvements to the testing process. It has been carefully laying the scientific foundation that is necessary to support modifications to the AT-SAT. This is a painstaking, detailed, and time consuming process to ensure that changes to the test are well supported, appropriate, and reliable. FAA plans to complete its evaluation of revised AT-SAT testing within about two years, and subsequently begin implementation.

OIG Recommendations and FAA Responses

OIG Recommendation 1: Evaluate the current AT-SAT test and redesign it so that it results in air traffic controllers being placed at locations according to their skill sets.

FAA Response: Partially Concur. While the FAA agrees that the AT-SAT should continue to be an effective element of the air traffic controller hiring selection process, there is not sufficient scientifically documented evidence that the test, or a modified version thereof, will be a useful tool to assist in matching new controllers with their service locations. The AT-SAT was designed and demonstrated only to be a useful indicator of whether a candidate possesses the requisite skills and abilities to become an air traffic controller. In its present incarnation, it was neither designed nor intended to offer a mechanism to match trainee performance with the specific needs of an individual facility.

The draft OIG report ignores the success of the FAA's recent air traffic controller hiring and training effort. In the last five years, the FAA has hired over 7,000 new air traffic controllers and over 3,000 have completed their training to certified professional controller so far. In FY 2009 alone, there was a 48 percent increase, compared to FY 2008, in the number of controller candidates who completed their certifications. The FAA's formidable accomplishment in this area was recognized in February 2009, when the DOT Inspector General testified to Congress that the FAA has "done what I can only say is a remarkable job in hiring replacements for controllers who have decided to leave."

Recognizing the potential exists to further refine and improve the process for matching new controllers to their assignments, the FAA has already begun exploring using AT-SAT, or a variation of it, to assist it in making placement decisions. The research necessary to support this type of testing has been underway and was described to the OIG during the course of its review. Researchers at the Civil Aerospace Medical Institute (CAMI) are currently conducting two studies of AT-SAT in this regard. The first study is examining the reliability, fairness, validity, and usefulness of AT-SAT over the long term (i.e. whether it is a reasonable predictor of controller success). This includes evaluating new, alternative, and redesigned tests for the

Appendix. Agency Comments

battery. The second study is to gather and evaluate evidence on whether AT-SAT can be used as a tool to assist in guiding placement decisions for new controllers. The intent is to both continually improve the current examination and to make any changes needed to meet emerging requirements for the air traffic controller occupation. All changes to the examination or how it is used will be made only after there is sufficient scientific evidence to support those changes and uses.

As described earlier, this type of development must be scrupulously performed and documented in a manner that will provide sufficient basis to support a decision to move in this direction. The FAA plans to complete its evaluation of the fairness, reliability, and utility of the AT-SAT battery as a potential tool to assist in guiding placement decisions by December 31, 2012.

OIG Recommendation 2: Assign controller candidates to a facility based on their academy performance in conjunction with data currently available.

FAA Response: Partially Concur. FAA has a long and successful track record for effectively selecting, training, and assigning new controllers to positions in facilities. As indicated earlier, within the context of contemporary human capital practices, it is not possible for FAA to have a single focus for assigning new controllers to a facility. As described in the response to recommendation one, no mechanism is presently available that would provide an explicitly quantitative, data-driven method for matching controllers and facilities. Even if there was, there are numerous other factors that must be considered, such as the new controller's preference and the results of interviews.

The FAA is not convinced that using Academy performance or AT-SAT data for placement would be any more effective as a predictor of success than the current system of placement. Initial training at the academy is intended to help the student begin field training, and not necessarily to become certified controllers. As such, initial academy training is only 10 percent of the total training given to air traffic control students and successful completion of academy training is no guarantee of success in any facility. More than 90 percent of new controller training is accomplished at air traffic control facilities due to significant variations in airspace, air traffic, and air traffic control procedures and agreements, particularly in the terminal environment. Of the 881 controllers that were assigned to level 10-12 facilities in FY 2008, 585 were assigned to En Route Centers. These facilities have considerable experience in training new hires from all hiring sources and should have no trouble training the vast majority of these developmentals to certified professional controller.

While FAA does not agree with the mechanism of the recommendation, it does agree, that it would be useful to explore whether there are additional means that could enhance FAA's already successful process for placing new controllers at facilities. This includes not only exploring the potential for testing to be factored into the process, but also redesign of the initial academy training courses, which in turn will provide a more comprehensive and objective student assessment strategy that may be used for possible evaluation and placement purposes. The FAA intends to accomplish this by December 31, 2012.

OIG Recommendation 3: Implement the recommendations of the November 2007 Controller Training and Development Group for both En Route and Terminal Academy Training.

FAA Response: Partially Concur. The FAA agrees that the November 2007 report had value

Appendix. Agency Comments

to redesign the En Route initial training course; however, we do not agree that the same front-end analysis covers Terminal training. The 2007 front-end analysis was developed for the En Route environment only and consequently, the recommendations made are germane only to En Route. As a result of FAA's efforts in response to the 2007 report, the new En Route course will go into service during the first quarter of fiscal year 2011 to coincide with the transition of the majority of En Route centers to the En Route Automation Modernization (ERAM) platform (the course delivers instruction on ERAM and hence the delay in implementing the course). The specifics of the En Route course's student assessment strategy are currently undergoing refinement.

The FAA agrees that an objective student assessment strategy in initial controller training at the Academy is essential to further improve the process. Since the 2007 report pertains to En Route only, the FAA subsequently developed and completed a front-end analysis for the Terminal environment akin to the referenced 2007 analysis. The Terminal initial training courses are currently undergoing their own evaluation and redesign, which will close any identified gaps in the student knowledge and skills expected of an Academy graduate. The FAA will also adopt lessons learned in the En Route initial course redesign with its new student assessment strategy. The FAA intends to complete and implement the Terminal course redesign by the end of calendar year 2012.