



**U.S. House of Representatives**  
**Committee on Transportation and Infrastructure**

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Washington, DC 20515

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Ranking Republican Member

June 10, 2008

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**SUMMARY OF SUBJECT MATTER**

**TO:** Members of the Subcommittee on Aviation  
**FROM:** Subcommittee on Aviation Staff  
**SUBJECT:** Hearing on Air Traffic Control Facility Staffing

**PURPOSE OF HEARING**

The Subcommittee will meet on Wednesday June 11, 2008, at 2:00 p.m. in room 2167 of the Rayburn House Office Building to receive testimony regarding air traffic control facility staffing issues, including concerns about staffing alignment and training at such facilities.

**BACKGROUND**

During 2007, the nation's air traffic system carried 769 million passengers<sup>1</sup> and 22.3 million tons of cargo.<sup>2</sup> The flights that carried these passengers and cargo were controlled by Federal Aviation Administration (FAA) air traffic controllers. Controllers work in towers, terminal radar approach control centers (TRACONS) and air route traffic control centers (ARTCCs). The latter is more commonly known as an enroute center.<sup>3</sup> The system that supports these operations, while using sophisticated communications, computing and surveillance technology, relies on controllers to maintain safe separation and proper sequencing during all phases of flight operations.

Following the Professional Air Traffic Controllers Organization (PATCO) strike in 1981, and subsequent firing of a significant number of controllers, most of the FAA's current 14,800 controllers were hired during the mid to late 1980's. During the five years following the strike, the

<sup>1</sup> U.S. Airlines Carry Record 769 Million Passengers in 2007, Press Release, Bureau of Transportation Statistics, (March 2008).

<sup>2</sup> Airline Summary (U.S. Flights), Bureau of Transportation Statistics, (June 2008).

<sup>3</sup> Airport towers direct traffic on the ground, before landing, and after takeoff within 5 nautical miles of the airport and about 3,000 feet above the airport. TRACONS sequence and separate aircraft as they approach and leave airports, beginning about 5 nautical miles and ending about 50 nautical miles from the airport and generally up to 10,000 feet above the ground. Enroute centers control air space that extends above 18,000 feet for commercial aircraft. In addition they control approaches and departures for some airports.

FAA hired and trained 12,456 new controllers. During this timeframe, 80 percent of the nation's air traffic controllers were developmental controllers undergoing on-the-job training. This large scale hiring over twenty years ago has created a unique demographic profile for the FAA's controller workforce. Many of the controllers hired within this narrow time frame are becoming eligible to retire.<sup>4</sup>

This potential retirement bubble was first noted in a 2002 Government Accountability Office (GAO) report, which stated that the FAA will need "to hire thousands of air traffic controllers in the next decade to meet increasing traffic demands and to address the anticipated attrition of experienced controllers, predominately because of retirement."<sup>5</sup> This predicted surge in retirements has begun and the FAA has responded with an aggressive hiring program.

However, the Department of Transportation Inspector General (DOT IG) has identified several issues that could impact the FAA's ability to accommodate these changes in its workforce. In particular, the DOT IG and others have expressed safety concerns regarding the ratio of fully certified controllers to developmental controllers (controller trainees) at FAA air traffic control facilities.

To set the context for this hearing, this memo will discuss the way controllers are selected and trained, the FAA's current facility structure, the methodology the FAA uses to set controller staffing levels for its facilities, the current demographics and future requirements of the FAA controller workforce, to include the impact of the Next Generation Air Transportation System (NextGen), and the findings and recommendations of the DOT IG.

## **I. How Controllers are Selected and Trained**

The FAA hires its controllers from a number of different sources. These include military veterans with air traffic control experience, civilian controllers currently working for the Department of Defense (DOD), graduates from FAA-sponsored Controller Training Initiative (CTI) programs, and off the street hires.<sup>6</sup> Also, in 1993, controllers fired during the PATCO strike were allowed to apply for controller positions.

Candidates hired off the street, or participating in the CTI program, are required to take the Air Traffic Selection and Training Test (AT-SAT). Applicants who have already worked as certified controllers in some other capacity (military and DOD civilian controllers for example) are not. The AT-SAT is a computer-based exam that tests for aptitude in controller skills. It tests sequencing skills, visualization skills, and ability to work quickly and accurately under pressure.<sup>7</sup> The test, which the FAA administers to applicants throughout the year, can take as long as eight hours. To be considered for a controller position, applicants must obtain a score of 70 (out of 100) or better.

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<sup>4</sup> Air traffic controllers are eligible for retirement at age 50 if they have worked for 20 years, and can retire at any age if they have worked for 25 years. To be eligible for these retirement provisions, all of the credited time must be in air traffic control operations. Also, controllers face a mandatory retirement age of 56.

<sup>5</sup> U.S. GAO, Air Traffic Control: FAA Needs to Better Prepare for Impending Wave of Controller Attrition (June 2002), at 14.

<sup>6</sup> The Controller Training Initiative is a college and university based program that provides students with air traffic control training. There are currently 23 institutions in the program.

<sup>7</sup> FAA, Civil Aeronautical Medical Institute, Documentation for the Computerized AT-SAT Test Battery, (March 2001), at 11.

FAA centralizes hiring and selection of controllers. To receive an offer from the FAA, all candidates are required to pass a medical exam and meet the requirements for a security clearance. Once a candidate is hired by the FAA, the first stage of training is to attend the Air Traffic Controller Academy in Oklahoma City, Oklahoma (Academy). This training phase lasts approximately twelve weeks. Some students, based on prior experience or previous academic training, such as CTI students, may be excused from the introductory part of the program.

Training for new controllers at the Academy is a mix of classroom instruction, equipment training and, in particular, extensive instruction using several different simulation tools. The Academy has a large suite of simulators that covers the entire range of air traffic environments. While students share a core curriculum – depending upon the trainee’s assignment, a tower, a TRACON, or an enroute center – the type of training will vary to some degree.

When a controller graduates from the Academy, the next assignment is to a facility where training will be continued. While in training at the facility, the controller will be classified as a developmental controller. The objective of the on-the-job training is to achieve certification for each position in a respective facility. When a developmental controller meets this goal, he or she will be classified as a Certified Professional Controller (CPC).

The number of positions required for certification, and the time it takes to become certified, varies with the type of facility. A tower requires certification in ground control, local control, clearance delivery and runway crossing coordinator positions. A TRACON requires certification in departure data positions, final vector positions, and several progressively complex radar control positions. An enroute facility requires certification in each of the facility’s 14 different control and radar associate positions.

Certification training in these positions will include performing the tasks of the position under close supervision of a CPC, classroom training and the use of simulators. Simulator training, because of the sophistication of the technology, and the diversity of problem solving situations it can provide, is increasingly important in controller training. In addition, contract trainers, often retired FAA controllers, are frequently used to provide instruction to developmental controllers.<sup>8</sup> However, it should be noted, that while a facility must train its new controllers, it also faces an on-going obligation for regular training requirements and recertification of existing controllers. Accordingly, the pace of training for a developmental controller often depends on a facility’s capacity to provide training.

The FAA, while hiring significant numbers of new controllers, has only been training controllers on a large scale for the past two years. Since most of these employees are still classified as developmental controllers the amount of data available to analyze attrition rates is limited. However, the FAA did report that 60 of the 1,815 controllers in training at the Academy in 2007 failed to complete the course. Additionally, in 2007, 164 developmental controllers, those who had already graduated from the Academy and had gone to facilities, left the program.<sup>9</sup>

## II. How the FAA Staffs Facilities

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<sup>8</sup> Contract trainers at the facilities are provided through a central contract administered by the FAA Academy. This contract is currently pending renewal.

<sup>9</sup> FAA, *A Plan for the Future: The FAA’s 10-year strategy for the Air Traffic Controller Workforce 2008-2017*, (2008), at 22.

The FAA reviews the staffing levels at its air traffic control facilities once a year. In determining facility staffing levels, the FAA considers a range of factors, such as the operating environment, the controller experience mix, and expected retirements. As to the operational environment, the FAA considers the number of operations, the complexity of the operations, weather conditions, and the impact of air traffic operations from nearby airports and military facilities. In addition, other factors, such as the experience mix of the facility's current workforce, the number of developmental controllers on staff, the use of overtime (for example, extensive use of overtime could indicate a possible staffing shortage), the projected number of potential retirements expected, and the number of controllers likely to be promoted and assigned to other facilities are also considered.

FAA does not assign air traffic control facilities a staffing number; rather, they are given a range. Based on a review of the factors noted above, this range can vary from year to year. For example, if air traffic activity levels were to increase then the staffing range might be increased to reflect the change. On the other hand, if there were a reduction in air traffic volume, the facility staffing range might be reduced.<sup>10</sup>

Facilities are classified according to types and levels. Levels are determined based on the air traffic volume and complexity of the airspace. There are currently 315 FAA staffed air traffic control facilities in the air traffic control system and these are divided into 9 different types of facilities.<sup>11</sup> These range from towers without radars to large enroute centers. The following chart reflects the different kinds of facilities in the National Airspace System:

Type	Facility Description <sup>12</sup>	Number in the System
1	Tower without Radar	1
2	Terminal Radar Approach Control (TRACON)	22
3	Combination Radar Approach Control and Tower with Radar	137
4	Combination Radar Approach Control and Tower without Radar	2
6	Combined Control Facility	4
7	Tower with Radar	123
8	Air Route Traffic Control Center	21
9	Combined TRACON Facility	4

Though not shown on this chart, the FAA's Command Center in Herndon, Virginia, which coordinates the flow of traffic throughout the United States, is also considered an air traffic control facility and is staffed by air traffic control personnel. However, its status and staffing, is considered highly unique and, as such, is not included in this discussion.

These facilities are further differentiated according to levels based on annual activity. Along with the type of facility, the level of the facility, is important in setting controller pay grades. The

<sup>10</sup> Discussion with Mr. Mark House, Director Financial Analysis and Process Re-engineering, Air Traffic Organization, Federal Aviation Administration (April 21, 2008).

<sup>11</sup> In addition to these facilities, there are 240 FAA towers that are staffed with contract employees, 165 military towers, and 26 non-federal towers.

<sup>12</sup> This chart does not include a type 5 air traffic control facility. Type 5 refers to automated flight service stations (FSS). However, this function, with the exception of FSS activities in Alaska was contracted out to Lockheed Martin in 2005.

FAA routinely reviews the levels it assigns to facilities and there are often changes. During its 2007 review, the FAA downgraded 17 facilities and upgraded 2.

### III. The Controller Workforce and Future Requirements

There were 583 controller retirements in 2006, 828 in 2007 and, between 2008 and 2017, the FAA projects that 7,068 of the current controller workforce will retire. In addition, the FAA estimates that an additional 5,316 (CPCs) will leave for other reasons to include promotion, reassignment, resignation and removal.<sup>13</sup>

According to the FAA, 2,233 controllers are currently eligible to retire, but so far have chosen not to. Based on past experience, the FAA projects that 56.4 percent of employees who reach eligibility will retire within two to three years, another 16.6 percent will continue to work up to five years, and the remainder will work past this point.<sup>14</sup>

The age distribution of the workforce is weighted towards controllers in their mid to late 40's. There are 1,800 controllers between ages 46 and 47, and 1,500 between ages 48 and 49. These are amongst the most experienced controllers in the workforce, and even if they are eligible to retire, but choose not to, they will nonetheless face mandatory retirement when they reach age 56.<sup>15</sup>

The FAA, as noted earlier, has set aggressive hiring goals. In 2007, the FAA hired 1,815 developmental controllers; in 2008 plans to hire 1,877, and in 2009, the target is 1,914. This pace is expected to continue for at least the next ten years. The FAA's objective is to reach a workforce level, larger than the current one, totaling 16,371, by 2017.<sup>16</sup>

The FAA states that NextGen will change the nature of air traffic control. NextGen relies on satellite based navigation systems and various automated tools that are likely to change the air traffic control environment. However, the FAA, at this point, does not believe it has adequate data to determine how these changes will affect the needs for the future controller workforce. Accordingly, the current controller staffing plan does not consider, at least at this point, the potential impact of NextGen.<sup>17</sup>

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<sup>13</sup> FAA, *A Plan for the Future: The FAA's 10-Year Strategy for the Air Traffic Control Workforce 2008-2017*, (2008) at 17-24.

<sup>14</sup> Id. at 20.

<sup>15</sup> Id. at 18.

<sup>16</sup> Id. at 10.

<sup>17</sup> Id. at 16.

#### IV. DOT IG Findings and Recommendations

The DOT IG has conducted a review of the FAA's controller workforce, its hiring practices, training programs, and future requirements. In general, the DOT IG found that:

- **FAA reports to stakeholders must reflect the changing makeup of the controller workforce.**

FAA facility staffing reports show the total number of controllers at a facility. However, these reports currently do not reflect the number of developmental controllers on staff. The DOT IG recommends that the number of developmental controllers at each individual facility be reflected on FAA controller staffing reports. The DOT IG also conducted a review of databases the FAA maintains to track the status of developmental controllers. This data includes their current training status and level of certification. The DOT IG found significant gaps in the quality of the data.<sup>18</sup>

- **The FAA must establish realistic standards for the level of developmental controllers that the facilities can accommodate.**

The FAA sets 35 percent as the maximum acceptable threshold for the level of developmental controllers that should be at any one facility. The DOT IG found that 22 facilities had levels in excess of 35 percent. Several facilities were well in excess of this level, including Teterboro Tower where 52 percent of the controllers are developmental; Oakland Center, where 38 percent of the controller staff are developmental, and Las Vegas TRACON where 50 percent of the controller staff are developmental. However, the DOT IG further noted that the FAA does not believe that "one size fits all" when it comes to setting the level of developmental staff that any one facility can accommodate. The DOT IG recommends that the FAA convene a working group to identify, on a case by case basis, the appropriate level of developmental controllers that should be assigned to each facility.<sup>19</sup>

- **FAA must ensure the standards developed address individual facilities training capacity.**

The FAA has met its stated goals for recruitment and the Academy is training and graduating a large number of developmental controllers. However, since controllers receive a substantial amount of their training at the facility level, to include position training, classroom training, and simulator training, there is concern that many existing FAA air traffic control facilities may not have adequate facilities, both in terms of personnel and equipment (primarily simulators), to train these developmental controllers in a timely and cost efficient manner. Further, the DOT IG is concerned that the FAA may be assigning more developmental controllers to some facilities than the training facilities can accommodate.

For example, as of December 2007, the Miami Center had 98 developmental controllers. This represents 34 percent of the workforce. However, while below the FAA's 35 percent maximum threshold, this represents more developmental controllers than the facility is currently

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<sup>18</sup> DOT IG, Review of the Air Traffic Controller Facility Training Program, Report Number: AV-2008-055, (June 5, 2008) at 3.

<sup>19</sup> Id. at 4.

capable of training. The result has been a substantial lengthening in the time it takes the Miami Center to train developmental controllers.

Accordingly, the DOT IG recommends that, in assigning developmental controllers to a facility, the FAA consider (1) the number of available on-the-job instructors at a facility, (2) available classroom space, (3) the number of available simulators, and (4) training and certification requirements for existing CPC staff.<sup>20</sup>

➤ **FAA must continue to encourage veteran controllers to transfer to busier, higher level facilities.**

The DOT IG has found that veteran controllers, often CPC's with substantial experience in lower level facilities, are not transferring to more complicated facilities. Normally, this kind of progression would be expected from controllers seeking to move up through the controller ranks. However, many controllers, because they are "grandfathered" through a special agreement, under the older, pre-2006 controller contract pay levels, have had no financial incentive to move to a new, more complicated and more demanding facility. Under the pay scales of the new contract, many controllers would actually have to take a reduction in pay to move to a new facility. There is a concern that this structural imbalance is creating a shortage of seasoned personnel at high demand facilities. To cope with this issue, the FAA has begun to offer bonuses to encourage experienced controllers either to continue in high demand facilities or to transfer to these facilities.

The DOT IG recommends that the FAA consider waivers, which are allowed under the current contract, to permit experienced CPC's to relocate to higher demand facilities without losing pay. In the meantime, the DOT IG expressed concern that in some facilities, such as the Potomac, Atlanta, and Chicago TRACONS, newly certified professional controllers are being assigned to positions that might be better filled by more experienced personnel.

➤ **The FAA needs to clarify responsibilities for oversight of the facility training program at the national level.**

While the recruitment of new controllers is centralized, as is the initial training at the Academy, once developmental controllers are assigned to a facility, training management becomes much more dispersed. The DOT IG found that there was confusion in the FAA's facilities as to what FAA Headquarters office is responsible for controller training. It noted that the Air Traffic Organization (ATO) Vice President for Acquisition and Business Practices oversees controller hiring and the FAA Academy program, and that the ATO Vice President for Finance oversees the Controller Workforce Development Plan. Further, once a developmental controller is assigned to a facility, training becomes the responsibility of either the ATO Vice President for Enroute and Oceanic Services, or the Vice President for Terminal Services. The DOT IG states that these responsibilities need to be better coordinated and clearly communicated to FAA facilities.<sup>21</sup>

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<sup>20</sup> Id. at 7.

<sup>21</sup> Id. at 10.

## V. National Air Traffic Controllers Association (NATCA) Perspective

NATCA has expressed several concerns about the on-going changes in the controller workforce. It notes that the number of CPCs in the workforce has fallen to a 15 year low and that retirement rates, even for personnel with time remaining before mandatory retirement, are unusually high. NATCA believes that the shortfall in the number of experienced controllers has led to: more controller fatigue because controllers are working longer days for sustained periods; an alleged increase in the number of operational errors; and increased delays because there are not enough controllers available to safely manage demand.<sup>22</sup>

## VI. H.R. 2881

The FAA Reauthorization Act of 2007, H.R. 2881, which passed the House on September 20, 2007, includes several provisions concerning staffing and training. Section 607 of H.R. 2881 directs the FAA to enter into an arrangement with the National Academy of Sciences to conduct a study of the assumptions and methods used by the FAA to estimate staffing needs for FAA air traffic controllers.

Section 608 focuses on training and directs the FAA Administrator to conduct a study that will assess the adequacy of training programs for air traffic controllers. This will include a review of the current training system for air traffic controllers, an analysis of the competencies required of controllers under the current air traffic control environment, an analysis of the competencies that will be required under the NextGen, and an analysis of various training approaches available to satisfy these competencies.

In addition, section 609 addresses the CTI Initiative and directs the Administrator to conduct a study of training options for graduates of these programs. The study will review the impact of providing a new controller orientation session for graduates. As a component of this work the study will analyze the cost effectiveness of this alternative training approach as well as the effect that such alternative training would have on the overall quality of training received by CTI graduates.

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<sup>22</sup> NATCA, *The FAA's Imposed Work Rules: The Effect on Air Traffic Controller Attrition, System Safety and Delays*, (March 2008), at 3.

**Witness List**

**Panel I**

**Mr. Hank Krakowski**  
Chief Operating Officer  
Air Traffic Organization  
Federal Aviation Administration

**The Honorable Calvin L. Scovel, III**  
Inspector General  
U.S. Department of Transportation

**Dr. Gerald Dillingham**  
Director, Physical Infrastructure Issues  
U.S. Government Accountability Office

**Mr. Patrick Forrey**  
President  
National Air Traffic Controllers Association

**Mr. David Conley**  
Vice President  
FAA Managers Association, Inc.

**Panel II**

**Don D. Chapman**  
Philadelphia International Airport  
Facility Representative  
National Air Traffic Controllers Association  
FAA Certified Professional Controller

**Melvin S. Davis**  
Southern California TRACON  
Facility Representative  
National Air Traffic Controllers Association  
FAA Certified Professional Controller

**Steven A. Wallace**  
Miami Center  
Facility Representative  
National Air Traffic Controllers Association  
FAA Certified Professional Controller