

**FAA CONTINUES TO MAKE PROGRESS IN
IMPLEMENTING ITS CONTROLLER
WORKFORCE PLAN, BUT FURTHER
EFFORTS ARE NEEDED IN SEVERAL KEY
AREAS**

Federal Aviation Administration

Report Number: AV-2007-032

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Memorandum

U.S. Department of
Transportation

Office of the Secretary
of Transportation
Office of Inspector General

Subject: ACTION: Report on Controller Staffing: FAA
Continues To Make Progress in Implementing Its
Controller Workforce Plan, but Further Efforts Are
Needed in Several Key Areas
Federal Aviation Administration
Report Number AV-2007-032

Date: February 9, 2007

From: David A. Dobbs 
Principal Assistant Inspector General
for Auditing and Evaluation

Reply to
Attn. of: JA-10

To: Federal Aviation Administrator

This report provides the results of our review of the Federal Aviation Administration's (FAA) progress in implementing key elements of its Controller Workforce Plan. Our objectives were to (1) evaluate FAA's progress in implementing key staffing and training elements of its Controller Workforce Plan and (2) assess the effectiveness of other initiatives designed to increase controller productivity. We conducted the review between June 2006 and December 2006, which included visiting the FAA Training Academy and 10 air traffic control facilities. Exhibit A contains details on our review scope and methodology. Exhibit B lists the facilities visited during the audit.

BACKGROUND

In response to concerns over an anticipated surge in air traffic controller attrition, FAA was directed by Congress in 2003 to prepare a detailed plan to ensure adequate staffing within the controller workforce. In December 2004, FAA issued the first in a planned series of annual reports outlining FAA's plans for addressing that challenge. The report, entitled "A Plan for the Future: The Federal Aviation Administration's 10-Year Strategy for the Air Traffic Controller Workforce," (the 2004 Plan) detailed FAA's strategy for hiring approximately 12,500 new controllers to replace those expected to leave over the next 10 years. The 2004 Plan also outlined various initiatives for increasing controller productivity and for decreasing on-the-job training (OJT) time and costs.

FAA issued the first installment of the mandated annual update to the Controller Workforce Plan on August 24, 2006 (the 2006 Update). The 2006 Update revised controller retirement projections and staffing requirements based on actual results and changes in air traffic forecasts since 2004. The 2006 Update also projected hiring approximately 11,850 controllers over the next 10 years. Additionally, FAA revised its retirement projection methodology from the 2004 Plan.

In May 2005, we published a review¹ of FAA's 2004 Plan. We found that the 2004 Plan was a good first step in that it clearly laid out the magnitude of the controller retirement issue and established planned actions for meeting the challenge. However, we concluded that future reports to Congress would require greater detail in terms of FAA's strategy for executing key elements of the plan, such as facility-by-facility staffing levels, the total estimated costs, and the Agency's progress in meeting established milestones. FAA agreed with our recommendations and committed to addressing these concerns in its next update of the 2004 Plan.

In June 2004, we reported² that FAA had an opportunity to improve the process of training and placing air traffic controllers, in light of pending retirements. For instance, we found that FAA provided minimal oversight of the OJT process at the national level. Even though OJT was the longest part of the training process, FAA had no national statistics on key performance measurements, such as delays or breaks in the OJT process. We recommended that FAA compile national statistics and establish a baseline to better manage the time and costs associated with the controller OJT process and include these in developing a centralized tracking system for training.

RESULTS IN BRIEF

FAA continues to make progress in implementing a very comprehensive and complex staffing plan. In the Department of Transportation's Performance and Accountability Report for fiscal year (FY) 2006, FAA rated itself as having made moderate progress in addressing the expected surge in air traffic controller attrition. We agree with FAA's self-assessment. During our audit, we found that FAA has made significant improvements by centralizing its hiring process and has made progress in reducing the time and costs to train new controllers, primarily through greater use of simulator training at the FAA Training Academy and implementation of a new national database to track OJT statistics. However, further progress is needed in several key areas.

¹ OIG Report Number AV-2005-060, "Controller Staffing: Observations on FAA's 10-Year Strategy for the Air Traffic Controller Workforce," May 26, 2005.

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

First, FAA is still in the process of developing accurate facility level staffing standards, which are a foremost necessity in effectively placing newly hired controllers where they will be most needed. Planning by location is critical because FAA has over 300 terminal and en route air traffic control facilities with significant differences in the types of users they serve, the complexity of airspace they manage, and the levels of air traffic they handle. Without accurate facility-level planning, FAA runs the risk of placing too many or too few controllers at key locations.

Various groups have repeatedly expressed concerns that some FAA air traffic facilities are either under- or over-staffed and that replacing retiring controllers one-for-one at each location would simply perpetuate existing staffing imbalances. FAA is aware of this concern and is in the process of validating its staffing standard models based on data derived at the sector and position levels in order to develop accurate staffing ranges for all of its facilities (this process is being conducted by FAA's contractor, MITRE Corp.). FAA expects to complete this assessment for its 21 en route centers (its largest facilities) in early 2007. However, estimated completion for the entire project is not until the end of 2008.

Given the goal of increasing controller productivity, the lengthy training time, and significant expenditures that will be required to hire and train new controllers over the next 10 years, FAA needs to ensure this project remains on track. We are recommending that FAA include in the next update of the 2004 Plan its progress made in validating facility staffing standards, including the number of facilities completed; the staffing ranges established for each of those locations; and the estimated completion date for all remaining facilities.

Second, FAA needs to refine its methodology for projecting controller retirements. In FY 2005, actual controller retirements were 36 percent higher than FAA projected. FAA significantly changed its retirement projection methodology in the 2006 Update—basing its projections on actual monthly retirements in FY 2005. According to FAA officials, they plan to use an average of all prior years' data (beginning with FY 2005 actual data) to establish a "running trend" for forecasting future retirements. During the first 6 months of FY 2006, FAA's projections were extremely close to the actual number of retirements that occurred.

However, beginning in April 2006, actual retirements began exceeding FAA's projections when negotiations between the Agency and the National Air Traffic Controller Association (NATCA) over a new collective bargaining agreement reached an impasse. By September, when FAA began unilaterally implementing its own proposals for open Articles, actual retirements were nearly three times higher than FAA had projected (97 actual retirements compared to 39 projected). According to FAA and NATCA officials, the large jump in actual retirements was

a result of the breakdown in contract talks. In our opinion, those events underscore the need for FAA to refine its methodology to consider future events that could trigger a similar reaction.

For example, actual controller retirements may accelerate significantly when many controllers will see a reduction in pay as FAA phases out Controller Incentive Pay, a second locality pay now received by many controllers. FAA began phasing out this additional pay last month. This one-time event could adversely impact the retirement estimates for 2007 and beyond. In our opinion, FAA needs to refine its methodology so that events that have the potential to significantly impact controller retirements (similar to what occurred in September 2006) are taken into consideration.

Third, FAA is making progress in the controller training process, but improvements are still needed to reduce OJT time. FAA is making progress in the controller training process, but there are still opportunities for improvement. We found that the addition of en route and terminal simulators at the FAA Training Academy provide more realistic training opportunities for students while increasing the training capacity at the Academy.

As a result of a recommendation from our 2004 report, FAA also established a national OJT data tracking system that allows the Agency to collect and analyze the data from all air traffic facilities for the purpose of identifying where efficiencies and program improvements can be made. However, we found inaccurate data in the tracking system because there were no clear instructions to the facilities on which data were required and how they should be entered into the system. Additionally, as we found in our 2004 audit, excessive gaps still exist in the controller OJT program.

We are recommending that FAA issue conforming instructions to all air traffic facilities on exactly which data should be included in the OJT national database and begin using the database to identify best practices.

Fourth, FAA reached its goal of reducing controller staffing by 3 percent for FY 2005, but it is unknown whether the initiatives established in the 2004 Plan were effective in helping achieve that reduction. FAA introduced several initiatives in the 2004 Plan that were intended to improve workforce efficiency and controller productivity. Those initiatives include efficiencies such as reducing the use of sick leave by 8 percent, ensuring appropriate use of workers' compensation benefits, and increasing scheduling efficiencies.

FAA achieved a 3-percent productivity gain in FY 2005 by decreasing total controller staffing by 3 percent, a goal established in the 2004 Plan. However, it is unclear what, if any, additional impact FAA's productivity initiatives had on

controller productivity because FAA did not establish baseline metrics for measuring the effectiveness of those initiatives (see Exhibit C for the status of the productivity initiatives and FAA's progress as of the 2006 Update).

As we recommended in our May 2005 report, FAA needs to establish baseline metrics for the initiatives, then update the 2004 Plan annually to reflect actual progress in achieving each initiative and ultimately in achieving its goal to reduce controller staffing by 10 percent. FAA concurred with this recommendation in July 2005 and agreed to include the information in the 2006 Update but did not. We are requesting that FAA provide us with new target dates for addressing this recommendation.

Finally, FAA has still not identified the total costs associated with the Controller Workforce Plan. The cost of hiring and training over 11,800 new controllers will be substantial, particularly since it currently takes new controllers 2 to 5 years to become fully certified. During that time, FAA incurs the cost of the trainee's salary and benefits as well as the cost of the salaries and benefits of the certified controllers who instruct trainees individually.

In our 2005 report, we recommended that FAA develop detailed cost estimates and offsets. The offsets are particularly important now that questions concerning the new controllers' salaries have been settled under the new contract for controllers.³ FAA concurred with the recommendation but did not address our concerns in the 2006 Update. Accordingly, we are also requesting that FAA provide us with new target dates for addressing this recommendation.

The following chart is our assessment of FAA's progress in implementing key elements of the Controller Workforce Plan. A green rating indicates that significant progress is being made in implementing the initiative. A yellow rating indicates that moderate progress is being made but significant challenges remain to be addressed. A red rating indicates that no progress has been made.

³ On June 5, 2006, FAA declared an impasse and submitted its last offer to Congress for a 60-day review as required by the 1996 FAA personnel reform legislation (49 U.S.C. 106 and 40122). After Congress did not take action during the 60-day period, FAA imposed its last offer and began to enforce its terms on September 3, 2006. FAA refers to the new personnel system changes as its "contract" with the controllers union. In contrast, the union refers to the changes as "imposed work rules." For the purposes of this report, we will refer to them as a "contract."

Table 1. OIG Assessment of FAA’s Progress in Implementing Key Elements of the Controller Workforce Plan

Area of Concern	Status	Comments
Staffing Standards	Yellow	<ul style="list-style-type: none"> • FAA needs to revise its staffing standard models. • MITRE Corp. is currently measuring en route sector complexities. • Various stakeholders are using at least six different staffing numbers to determine staffing levels.
Projected Retirements	Yellow	<ul style="list-style-type: none"> • Projections need to be refined to account for one-time events that could cause a surge in retirements. • Total losses were revised down significantly to correct errors in the 2004 Plan.
Hiring Process	Green	<ul style="list-style-type: none"> • Centralized hiring allows: <ul style="list-style-type: none"> ✓ management of the process ✓ earlier notice of new hires to facilities and ✓ reduced clearance time.
Controller Training	Yellow	<ul style="list-style-type: none"> • FAA significantly improved its Academy simulator training. • FAA implemented a national OJT database but lacks clear instructions on entering data. • FAA is still experiencing excessive breaks in the OJT cycle.
Productivity Initiatives	Yellow	<ul style="list-style-type: none"> • FAA achieved its FY 2005 overall goal of a 3-percent productivity gain. • FAA lacks baseline metrics to measure success of initiatives.
Costs	Red	<ul style="list-style-type: none"> • FAA lacks detailed cost estimates of the 2004 Plan. • FAA needs to identify offsetting savings from the new contract for controllers.

Source: OIG analysis of FAA data

SUMMARY OF RECOMMENDATIONS

Our recommendations focus on the specific actions that FAA needs to take to ensure that its stakeholders have a complete and accurate picture of the ongoing 10-year strategy for the controller workforce and the resources that will be required. Specifically, the recommendations include:

- Reporting on the progress made in validating the staffing standard models and in establishing staffing ranges for each location in the next update of the Plan;
- Refining the methodology for projecting controller retirements so that events that have the potential to significantly impact controller retirements are taken into consideration;
- Issuing clear instructions to all air traffic facilities on exactly which data should be included in the OJT national database and how those data should be entered; and
- Using the OJT national database to (1) determine whether training resources can be used more efficiently and effectively and (2) identify best practices.

A complete set of our recommendations can be found on page 18 of this report.

MANAGEMENT COMMENTS AND OIG RESPONSE

We provided FAA with a draft copy of this report on December 15, 2006, for comment. On February 8, 2007, FAA gave us its formal response, which is contained in its entirety in the Appendix. FAA concurred with our recommendations to include the progress made in validating staffing standard models in the next update of the Plan, issue instructions on data to be included in the OJT national database, and use the database to improve oversight of the OJT process (recommendations 1, 3, and 4). We consider these recommendations resolved.

FAA did not concur with our second recommendation (to refine its projected retirement methodology). In its response, FAA stated that in the second half of FY 2006, actual retirements versus projections began to diverge, most likely as a result of the rhetoric associated with the contract impasse. However, FAA points out that it was able to proactively increase its planned new hires during the last quarter of the year to compensate for the increased retirements. According to FAA, rather than refining the methodology to account for one-time events, it believes the ability to adjust the hiring pipeline is a more appropriate way to deal with unpredictable events that may affect controller retirements.

In our draft report, we advised FAA that it could provide alternative courses of action that it believes would resolve the issues presented in this report. In this instance, the actions proposed by FAA meet the intent of our recommendation, which was to ensure that the Agency was adequately prepared to address unanticipated increases in controller retirements. FAA's planned actions should address our concerns. Accordingly, we consider this recommendation resolved as well.

A complete summary of FAA's comments, our response, and the actions required can be found on pages 19 through 21 of this report.

We appreciate the courtesies and cooperation of FAA representatives during this audit. If you have any questions concerning this report, please call Robin Hunt, Acting Assistant Inspector General for Aviation and Special Program Audits, at (415) 744-0420 or Dan Raville, Program Director, at (202) 366-1405.

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cc: FAA Deputy Administrator
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FAA continues to make progress in implementing key initiatives of its Controller Workforce Plan. For example, FAA has significantly improved its hiring process by centralizing it and has made progress in reducing the time and costs to train new controllers primarily through greater use of simulator training at the Academy and implementation of a new national database to track OJT statistics. However, FAA needs to make further progress in several key areas. These include:

- Completing the Agency’s validation of more accurate staffing standards for its over 300 locations,
- Refining the Agency’s methodology for projecting controller retirements,
- Continuing efforts to reduce the time and costs associated with OJT,
- Establishing baseline metrics to measure the effectiveness of controller productivity initiatives, and
- Identifying the estimated total costs of the Controller Workforce Plan.

These actions are necessary to ensure that FAA continues to maintain the current momentum in addressing a very complex and comprehensive plan for hiring and training over 11,800 controllers through FY 2015. These actions are also necessary to ensure that the Agency’s stakeholders have a complete and thorough understanding of the extent of this challenge, the progress made by FAA in addressing it, and the resources required.

Staffing Standards: FAA Is In the Process of Validating Facility Level Staffing Standards

Area of Concern	Status	Comments
Staffing Standards	Yellow	<ul style="list-style-type: none"> • FAA needs to revise its staffing standard models. • MITRE Corp. is currently measuring en route sector complexities. • Various stakeholders are using at least six different staffing numbers to determine staffing levels.
<p>The current staffing standards are generally accurate at the “macro” level and can be used for national estimates but they are not as accurate at the facility level. FAA is aware of this and is in the process of updating the models used to establish the staffing standards. However, the schedule for this program may not be completed until 2008. In the interim, at least six staffing numbers are being used; this is causing confusion and uncertainty at the national and facility level.</p>		

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FAA has used staffing standard models to determine controller staffing levels since the 1970s, and they are the basis for the FY 2006 controller staffing standards. However, these staffing standard models were last updated in the 1990s and do not include major technology and policy changes that impact staffing at the facility level, such as new systems or implementation of the Family and Medical Leave Act. The current staffing standards also do not take into account local factors such as runway configurations, airspace complexity, or air defense identification zone requirements.

The staffing standards used by FAA are not highly accurate at the facility level in part because the staffing models were originally designed to generate national estimates. In 1997, the National Academy of Sciences completed a review⁴ of FAA's staffing standards and concluded that, "The committee does not believe that the current staffing standards can be used to provide highly accurate estimates of staffing requirements for individual facilities."

FAA is aware that it needs more accurate facility level staffing standards and is in the process of validating staffing standards in order to develop staffing ranges that can be used at the facility level. As a part of the validation process, the Agency has contracted with MITRE Corporation to measure sector complexities at each of FAA's 21 en route centers. This is a huge undertaking that involves the contractor measuring the controller workload at each of the 750 airspace sectors in the en route centers nationwide. The results of this study should provide accurate controller requirements at each of those facilities. FAA also plans a similar study for its Terminal Radar Approach Control (TRACON) facilities and a recalibration of the model used at air traffic control towers.

However, new staffing ranges based on validated staffing models have not been reported for any location since the validation process began over 1 year ago. The latest timeline provided by FAA indicated that staffing standards will be complete for the 21 en route centers by early calendar year 2007 and will be complete for the TRACONs and tower facilities by the end of calendar year 2008. Given FAA's goal to increase controller productivity through staff savings and the significant expenditures that will be required to hire and train controllers over the next 10 years, the Agency needs to ensure that this high priority project remains on track.

In the interim, FAA is currently establishing staffing ranges by facility, which take into account the existing staffing standard models but also include facility manager input and expected productivity improvements. Although these ranges

⁴ Transportation Research Board Special Report 250, "Air Traffic Control Facilities, Improving Methods To Determine Staffing Requirements," 1997.

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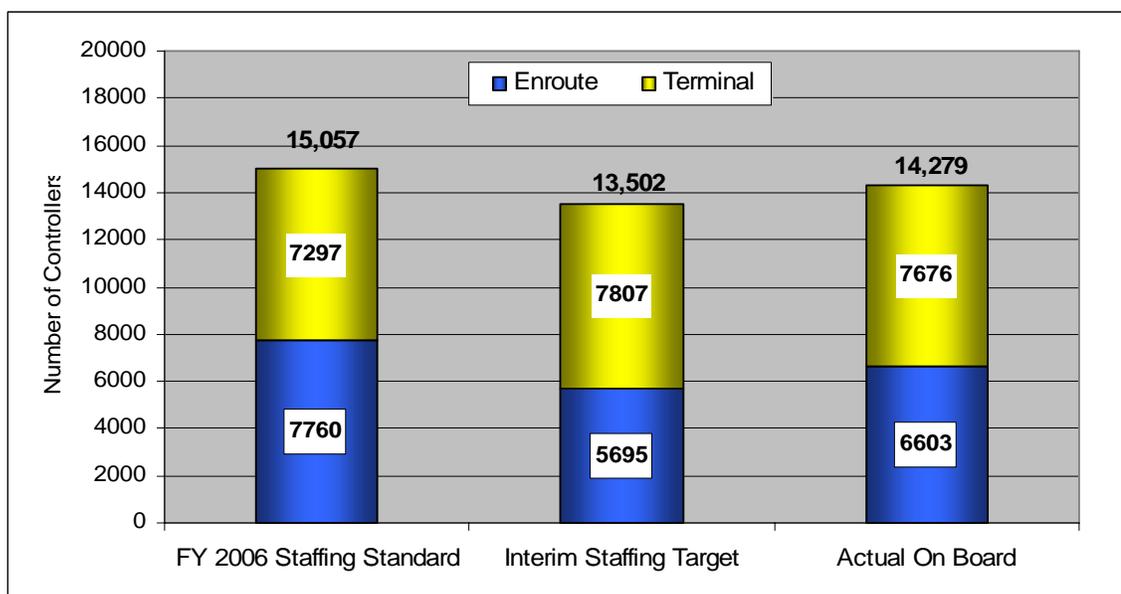
are a step toward more accurate controller levels, they are not a replacement for a facility-level staffing range based on validated staffing standard models.

During this audit, we found many different staffing numbers being quoted at the national level and for individual facilities. For example,

- FAA Headquarters officials quoted either the staffing standards or the 2004 Plan staffing targets as the staffing level;
- Union representatives quoted the staffing levels previously negotiated between the Agency and NATCA;
- FAA established yet another number by creating an Interim Staffing Target to be used until the staffing standard models are validated; and
- Other numbers were quoted at facilities and included “the budgeted staffing level,” the “finance team staffing level,” and “practical staffing standard levels.”

In some cases, we found these numbers to be significantly different. For example, Figure 1 compares the total number of controller requirements according to the FY 2006 Staffing Standards, FAA’s Interim Staffing Targets, and the actual on-board number of controllers (as of August 2006). As shown in the chart, the various staffing numbers range from a high of 15,057 controllers when using the Staffing Standards to a low of 13,502 controllers when using the Interim Staffing Standards—a difference of over 1,500 controllers.

Figure 1. Some of the Various Numbers Used To Define National Staffing Requirements

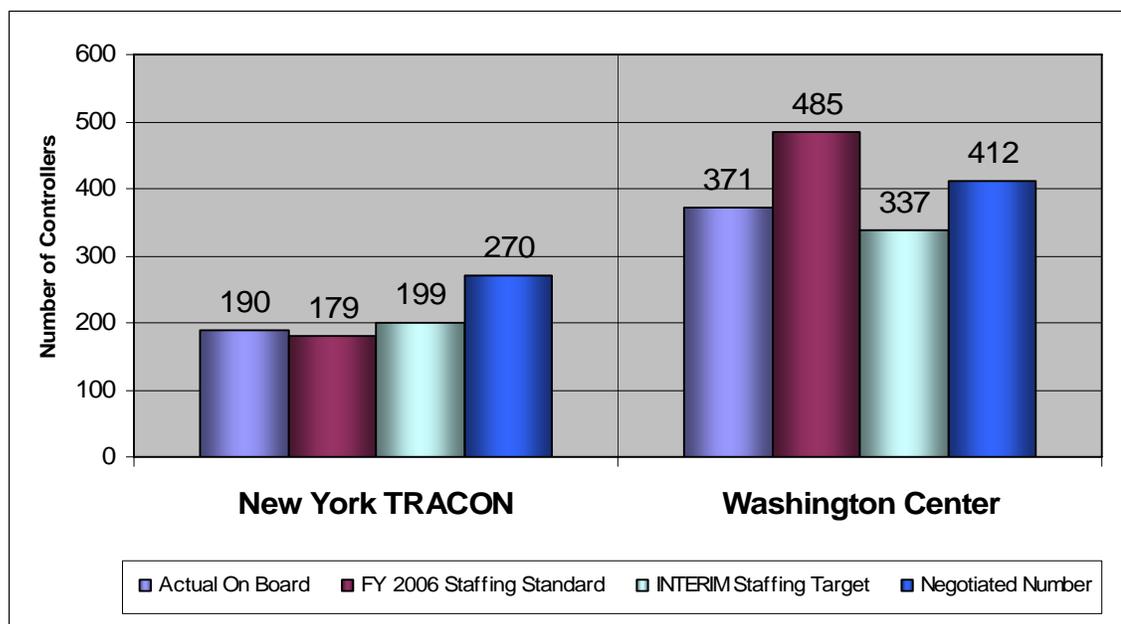


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When compared at the facility level, the differences are even more apparent. For example, Figure 2 shows the different “authorized” staffing levels for both the New York TRACON and the Washington En Route Center. When we visited the New York TRACON, there were 190 controllers assigned to the facility (actual on-board number). When comparing that number to the 2006 Staffing Standard (179), the facility appears to be *overstaffed* by 6 percent (11 controllers). When comparing the actual on-board number to the previously negotiated number (270), the facility appears to be *understaffed* by 30 percent (80 controllers).

We found similar circumstances at the Washington En Route Center. When comparing the 371 controllers actually on board to the FY 2006 Staffing Standard (485), the facility appears to be *understaffed* by 24 percent (114 controllers). However, when comparing the controllers on board to the Interim Staffing Target (337), the facility appears to be *overstaffed* by 10 percent (34 controllers).

Figure 2. Various Numbers Used To Define Controller Requirements for Two Facilities



Source: FAA

We found that these various staffing numbers cause confusion and uncertainty at the national and the facility level and underscore the need for FAA to complete the validation of the facility staffing standard models on time in order to develop one credible staffing range for each of its over 300 air traffic facilities. We are recommending that FAA include in the next update of the 2004 Plan the progress made by the Agency and its contractor in validating the staffing standard models

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and in establishing staffing ranges for each location and the expected completion date for both of these actions.

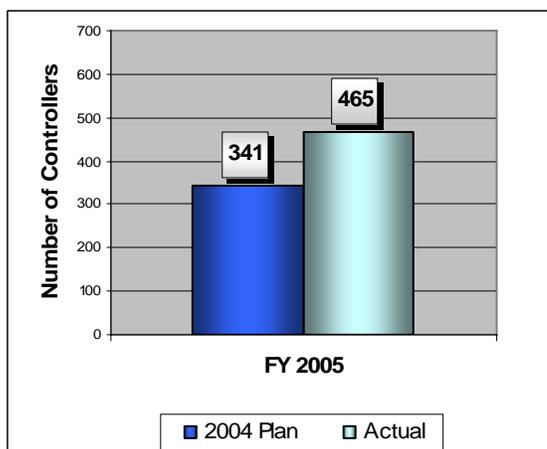
Projected Retirements: FAA Needs To Refine Its Methodology for Projecting Controller Retirements

Area of Concern	Status	Comments
Projected Retirements	Yellow	<ul style="list-style-type: none"> • Projections need to be refined to account for one-time events that could cause a surge in retirements. • Total losses were revised down significantly to correct errors in the 2004 Plan.

Actual controller retirements during the first 2 years of the 2004 Plan have been significantly higher than originally projected. Figure 3 illustrates that the 2004 Plan projected that 341 air traffic controllers would retire in FY 2005 and 439 would retire in FY 2006. Actual retirements for FY 2005, however, were 465 controllers—a 36-percent increase over the projected number. Furthermore, the 2006 Update revised anticipated retirements in FY 2006 from 439 to 467. However, 583 controllers actually retired during FY 2006—a 25-percent increase over the 2006 projection and nearly 33 percent above the 2004 Plan projection.

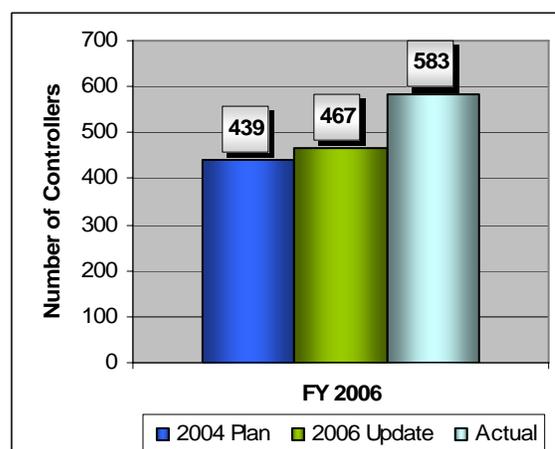
Figure 3. FAA's Controller Retirement Projections Versus Actual Retirements

Figure 3a. FY 2005 Projections Versus Actual Retirements



Source: FAA

Figure 3b. FY 2006 Projections Versus Actual Retirements



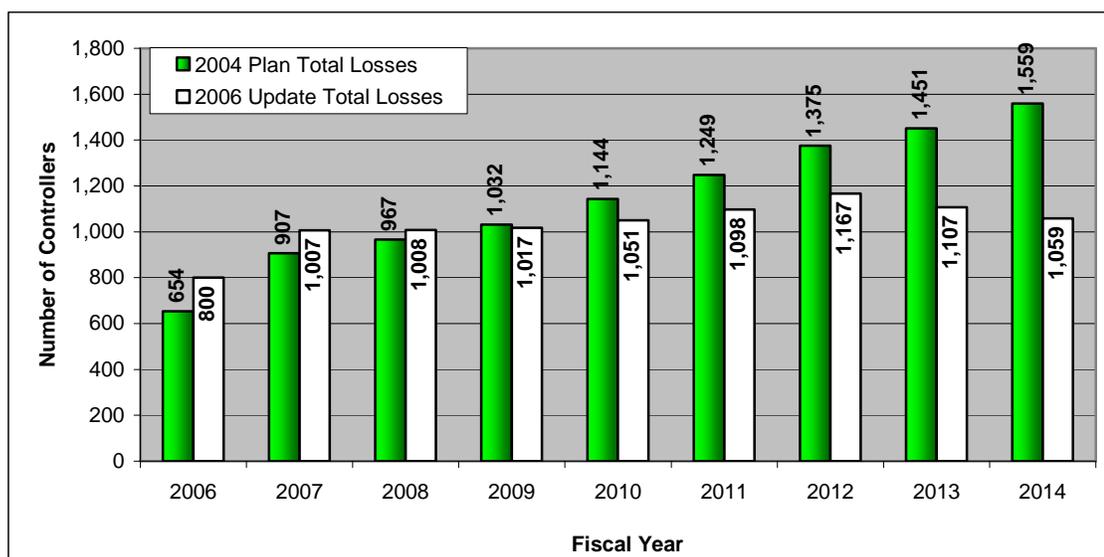
Source: FAA

In the 2006 Update, FAA also significantly changed its total projected losses over the next 10 years. As shown in Figure 4, FAA projected in the 2004 Plan that total

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controller losses from FY 2006 through FY 2014 would be 10,338 controllers. In the 2006 Update, FAA projected that only 9,314 controllers would leave the controller workforce during the same time period—a reduction of over 1,000 projected controller losses.

Figure 4. FAA's Total Projected Controller Losses*



Source: FAA's 2004 Controller Workforce Plan and 2006 Update

*Total losses include retirements, resignations, removals, deaths, training failures, and promotions.

According to FAA, the significant reduction in controller losses in the later years of the 2006 Update is due to a change in projection methodology that corrected the treatment of mandatory retirements. In the 2004 Plan, FAA estimated that 25.5 percent of all controllers would retire in the first year they became eligible. However, FAA also counted these individuals again when they reached mandatory retirement age resulting in “double counting” of controller retirements in the later years. The methodology was changed in the 2006 Update to correct double counting in the later years.

The 2004 Plan also estimated controller retirements based on a 3-year increment of controller retirement history to project a retirement pattern out to FY 2014. The calculation indicated that 25.5 percent of controllers retired during their first year of retirement eligibility, and 70.5 percent of controllers retired within their first 7 years of retirement eligibility.

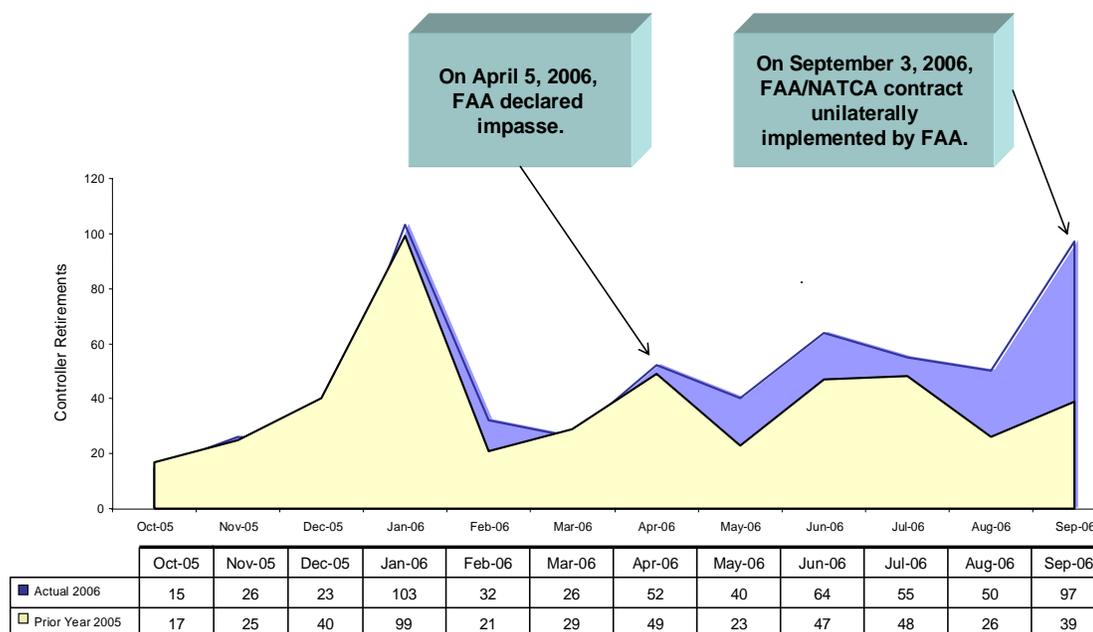
In the 2006 Update, FAA changed the methodology for projecting retirements. FAA projected controller retirements based only on the pattern established by controllers retiring in FY 2005. Retirement projections using only 1 year of historical retirement data indicated that fewer controllers would retire during their first year of eligibility (23.4 percent versus 25.5 percent). This method also

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indicated that 87.1 percent of controllers retired within their first 7 years of retirement eligibility, compared to 70.5 percent. According to FAA officials, they plan to use an average of all prior years' data (beginning with FY 2005 actual data) to establish a running trend for forecasting future retirements.

During the first 6 months of FY 2006, FAA's projections were extremely close to the actual number of retirements that occurred. However, beginning in April 2006, actual retirements began exceeding FAA's projections when negotiations between the Agency and NATCA over a new collective bargaining agreement reached an impasse. As shown in Figure 5, by September, when FAA began unilaterally implementing its own proposals for open Articles, actual retirements were nearly three times higher than FAA had projected (97 actual retirements compared to 39 projected).

Figure 5. FAA FY 2006 Projected Versus Actual Retirements



Source: FAA

According to FAA officials, the large jump in actual retirements was a result of the breakdown in contract talks. In our opinion, those events underscore the need for FAA to refine its methodology to consider future events that could trigger a similar reaction. For example, there may be a significant jump in controller retirements during January 2007 when many controllers will see a reduction in

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their pay checks as FAA begins phasing out Controller Incentive Pay, a second locality pay that many controllers now receive. This one-time event could adversely impact the retirement estimates for 2007 and beyond.

We also met with NATCA officials to discuss the projected number of retirements in the 2006 Update. Union officials stated that the number of estimated retirements was too low. They pointed to the fact that actual retirements in the previous 2 years were well above those projected. They also predicted that the new contract imposed on the workforce would increase the number of actual retirements in the coming years. Union officials advised us that they had also hired an independent contractor to conduct a study on staffing standards to determine the correct number of controllers required at the facility level.

Accurate retirement total estimates are an important element of FAA's Controller Workforce Plan. Given the current lack of valid facility-level staffing standards, the large percentage of active controllers who are or will become eligible to retire in the next 10 years, and the extensive training required to become a controller, FAA must refine its methodology for projecting when and where the controller workforce will experience losses. This is imperative to ensure that future hiring plans will sustain an operationally viable controller workforce. Accordingly, we are recommending that FAA refine its methodology so that events that have the potential to significantly impact controller retirements (similar to what occurred in September 2006) are taken into consideration.

Hiring Process: FAA Has Made Progress in Streamlining the Controller Hiring Process

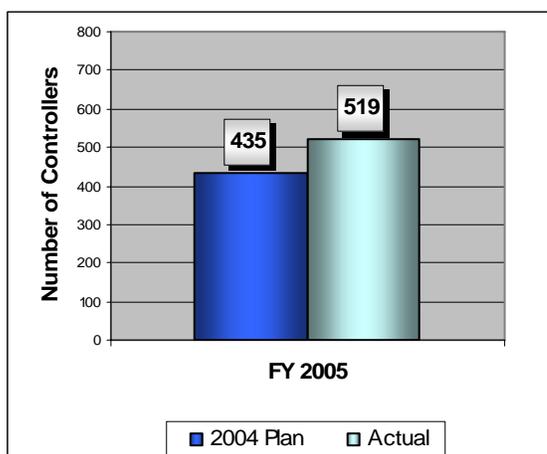
Area of Concern	Status	Comments
Hiring Process	Green	Centralized hiring allows: <ul style="list-style-type: none"> • Greater efficiency and better management of the process • earlier notice of new hires to facilities and • reduced clearance time.
In January 2006, the Air Traffic Organization centralized the entire controller hiring process. We found that this improves process efficiency by eliminating duplication of effort and now allows individual facilities to identify prospective new controllers by name as much as 1 year in advance. FAA also anticipates making improvements in the time needed for applicants to obtain medical and security clearances.		

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In FY 2005 and FY 2006, FAA hired more controllers than had been anticipated in the 2004 Plan or the 2006 Update. As illustrated in Figure 6, the 2004 Plan projected a need for 435 new controllers in FY 2005. FAA hired 519 controllers, almost 20 percent above the 2004 projection. Likewise, FAA's 2006 Update projected a need for 930 new controllers in FY 2006, while 1,116 new controllers were actually hired, also about 20 percent above the projection. The increased hiring levels were possible because FAA has made progress in streamlining the controller hiring process, which will allow the Agency more fluidity in making any necessary mid-course hiring corrections.

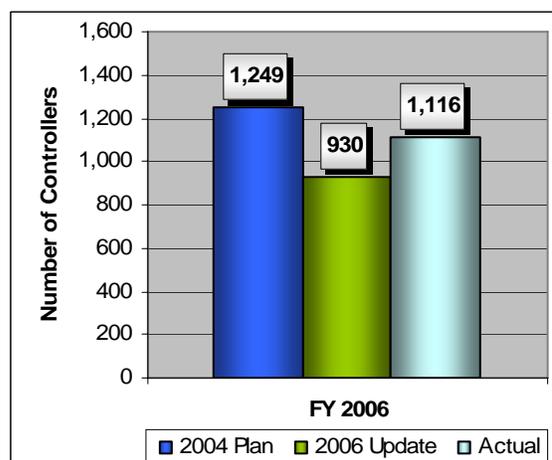
Figure 6. FAA's Controller Hiring Estimates

Figure 6a. FY 2005 Estimated Versus Actual Hires



Source: FAA

Figure 6b. FY 2006 Estimated Hiring Versus Actual Hires



Source: FAA

During our 2004 audit, we found that FAA had no well-defined national hiring process. Essentially, FAA hired and placed new controllers based only on where and when vacancies occurred. Additionally, in accordance with the 1998 NATCA collective bargaining agreement, FAA was compelled to negotiate the national, regional, and facility distribution of vacancies. As a result, FAA's hiring process was decentralized and inefficient, as each region duplicated the process with little or no communication with other regions.

In January 2006, the Air Traffic Organization (ATO) centralized the entire controller hiring process. The Aviation Careers Division in Oklahoma City now coordinates all new controller hiring, including processing and evaluating applications, tracking medical and security clearances, and assigning individual candidates to specific air traffic control facilities. The new contract for controllers, implemented in September 2006, also eliminated requirements to negotiate staffing levels with the union.

Findings

We found that centralized hiring improves process efficiency by eliminating duplication of effort and now allows individual facilities to identify prospective new controllers by name as much as 1 year in advance. During our facility visits, all managers knew whether or not they were scheduled to receive new hires and, if so, who they were and when they were to arrive at the facility. One facility manager even produced a list of 19 new controllers scheduled to arrive at the facility during the first three quarters of FY 2007. This was not the case during our 2004 audit when we found that managers did not know how many new controllers had been hired at their locations or the new hire's names. They also did not know if they were even receiving new controllers at their locations. FAA also anticipates reducing the 97-day median time required for applicants to obtain medical and security clearances.

FAA's new controller hiring procedures are a major shift in policy from those we found in place in 2004. The centralized process now in place allows FAA to coordinate more efficiently between the service areas and provide—by name—hiring selections to facility managers up to 1 year in advance. The hiring process also provides ATO with the hiring flexibility it needs to ensure new controllers are hired when needed despite changing controller requirements.

Controller Training: FAA Is Making Progress in the Controller Training Process, but Improvements Are Still Needed To Reduce On-The-Job Training Time to Under 3 Years.

Area of Concern	Status	Comments
Controller Training	Yellow	<ul style="list-style-type: none"> • FAA significantly improved its Academy simulator training. • FAA implemented a national OJT database, but lacks clear instructions on entering data. • FAA is still experiencing excessive breaks in the OJT cycle.
<p>FAA is making progress in the controller training process. We found that the addition of en route and terminal simulators at the FAA Training Academy provides more realistic training opportunities for students while increasing the training capacity at the Academy. As a result of a recommendation from our 2004 report, FAA also established a national OJT data tracking system that allows the Agency to collect and analyze data from all air traffic facilities. However, we found inaccurate data in the tracking system because there were no clear instructions to the facilities on which data were required and how data should be entered into the system. Additionally, as we found in our 2004 audit, excessive unexplained breaks still exist in the controller OJT cycle, which can needlessly extend the certification time for controllers.</p>		

Findings

Academy Training: During our visit to the Training Academy, FAA officials showed us the facility's new simulator training capabilities. FAA completed the installation of four new tower simulators (see Figure 7), which doubled the training capacity from the previous simulation technology. The Tower Simulation Systems (TSS) provide trainees with a combination of high fidelity training and the latest in voice recognition technology. In addition, a 20-sector en route lab was completed, which enables the Academy to train new controllers on current technology being used in the field.

Figure 7. Picture of a Tower Cab Simulator



Source: FAA

The goals in expanding the simulation capabilities at the Academy are to increase the performance of the student through more realistic training, increase student capacity at the Academy, and to help reduce the time needed for new controllers to become fully certified. As Table 2 shows, the Academy currently has ample capacity to handle the number of new controllers projected to be hired in the 2006 Update.

Table 2. Training Academy Capacity Versus Controller Workforce Plan Forecast

Fiscal Year	Capacity	Projections
2007	2,140	912
2008	2,140	976
2009	2,140	1,010
2010	2,140	1,144

Source: FAA Training Academy

Findings

On-The-Job Training: During our 2004 audit, we found that FAA provided minimal oversight of the OJT process at the national level. We found that even though OJT is the longest portion of the controller training process, FAA did not have national statistics on key performance measurements, including the following:

- Amount of time controllers need to certify,
- Delays in the OJT process,
- Where and when training failures occur, and
- Total costs to provide OJT.

We concluded that unless FAA accumulated site-specific statistics at the national level, it had no means to assess the overall OJT process, determine whether training resources could be more efficiently and effectively used, and identify best practices. We recommended in our 2004 report that FAA compile national statistics, establish a baseline to better manage the time and costs associated with the controller OJT process, and include these in developing a tracking system for training.

FAA concurred with our recommendation and implemented a national OJT data tracking system in January 2006. FAA currently collects and maintains training data from all air traffic control facilities and will be able to analyze this data at the national level to provide best practices to all terminal and en route facilities. We believe FAA has made a significant step in the right direction in establishing this system but caution the Agency on the accuracy of the data currently in the tracking system. During a limited review of data in the OJT tracking system, we found two areas of concern that warrant further review by FAA.

First, we found that there are no clear instructions to the individual facilities on which training data to enter and how to enter them into the tracking system. Thus, we found that some facilities entered the data differently than others. For example, we found that the New York TRACON counted a new hire's Academy training as part of the OJT time while all the other facilities we visited did not. This resulted in the TRACON showing a longer OJT process for its new hires than actually occurs. We also found errors in class length and the number of days it took new controllers to complete various stages of the training process. FAA needs to ensure that all facilities are reporting their training data the same way in order to have accurate statistics. We are recommending that FAA issue conforming instructions on exactly which data should be included and how those data should be entered into the OJT database.

Findings

Second, we found that there are still excessive breaks in the training process that extend the time required for a new controller to become fully certified. This was also a finding in our 2004 audit. For example, at one of the en route centers we visited, we found that 6 controllers waited over 100 days to begin their OJT. FAA must identify these occurrences and eliminate them in order to significantly reduce OJT time for new controllers. We are recommending that FAA begin using its OJT database to determine whether training resources can be used more efficiently and effectively, identify best practices, and identify and investigate instances where excessive breaks in the OJT process occur.

Although FAA is planning to reduce the average training time it takes to become a certified controller, we have concerns about the Agency's ability to achieve this while concurrently increasing the percentage of developmental controllers in the workforce. Beginning in FY 2007, FAA is planning to increase the percentage of developmental controllers at en route centers to over 25 percent of the total workforce.

FAA projects that developmental controllers will make up 25 percent or more of the entire controller workforce until FY 2014. According to FAA, a workforce consisting of up to 35 percent developmental controllers is acceptable. However, a 35-percent level of developmental controllers would represent the highest percentage of the workforce in recent years. We found that only about 15 percent of the national controller workforce is currently comprised of developmental controllers. The increase in the percentage of developmental controllers is a concern because it means there will be fewer certified controllers within the workforce to control air traffic and to provide OJT. Air traffic managers and NATCA facility representatives we interviewed during this audit indicated that a staffing ratio of up to 25 percent of developmental controllers to Certified Professional Controllers would still enable effective controller training.

Because FAA is expecting to increase the percentage of developmental controllers to over 25 percent of the workforce as early as FY 2007 in the en route centers, it is vital for FAA to have facility level plans for hiring and training controllers so that managers can begin planning how to handle the logistics of training the increased number of developmental controllers. FAA will also need to continually monitor the training results from the individual facilities to ensure the developmental controller rate does not adversely impact the overall efficiency or safety of operations in the National Airspace System.

Findings

Productivity Initiatives: FAA Reached Its Overall Goal of a 3-Percent Staff Savings for FY 2005, but the Agency Does Not Know Whether the Initiatives Established in the 2004 Plan Were Effective in Achieving This Productivity Gain

Area of Concern	Status	Comments
Productivity Initiatives	Yellow	<ul style="list-style-type: none"> • FAA achieved its FY 2005 overall goal of a 3-percent productivity gain. • FAA lacks baseline metrics to measure success.
<p>FAA achieved a 3-percent productivity gain in FY 2005 by decreasing its total controller staffing by 3 percent, a goal established in the 2004 Plan. However, it is unclear what, if any, additional impact FAA's productivity initiatives had on controller productivity. The effect the 2004 Plan initiatives had on overall productivity gains cannot be measured because FAA has not established baseline metrics, as we recommended in our 2005 report.</p>		

FAA introduced several initiatives in the 2004 Plan intended to improve workforce efficiency and controller productivity. FAA anticipated that over 5 years, starting with 3 percent in FY 2005, these initiatives would have the potential to yield controller staff savings of about 10 percent, relative to the existing staffing standard projections. FAA estimated the initiatives would result in a 3-percent staff savings in FY 2005, 5 percent in FY 2006, 7 percent in FY 2007, 9 percent in FY 2008, and would maintain a 10-percent reduction each year thereafter from FY 2009 through FY 2014.

FAA's initiatives include efficiencies such as reducing the use of sick leave by 8 percent, ensuring appropriate use of workers' compensation benefits, and increasing scheduling efficiencies. The intent of these initiatives is to make more controllers available for controlling air traffic. These productivity initiatives and FAA's progress as of the 2006 Update are listed at Exhibit C.

In our 2005 audit, we found that the implementation of these initiatives was an ambitious operational undertaking and that only through continued monitoring could FAA determine the final impact of the initiatives. To ensure the initiatives were achieving the desired results, we recommended that FAA establish baseline metrics for the initiatives, then update the workforce plan annually to reflect the actual progress in achieving each initiative and ultimately in achieving the goal to reduce controller staffing by 10 percent.

Findings

In the 2006 Update, FAA stated that the Agency achieved the 3-percent productivity goal for FY 2005.⁵ In total, FAA handled about the same number of air traffic operations with fewer air traffic controllers. Table 3 shows that the number of operations per controller increased from 9,537 operations in FY 2004 to 9,796 operations in FY 2005, an increase of over 250 operations per controller. During the same period, the number of controllers went from 14,934 to 14,540, a decrease of 394 controllers. However, when asked, FAA officials stated that they were unsure how much the initiatives outlined in the 2004 Plan had impacted the gain in productivity because metrics for measuring the effectiveness of each initiative were not being tracked.

Table 3. Controller Productivity

Fiscal Year	Combined Activity (Operations)	Number of Controllers (Actual On-Board) Number)	Operations per Controller
2004	142,423,848	14,934	9,537
2005	142,438,471	14,540	9,796

Source: FAA

We acknowledge that the impact on productivity gains of some of the initiatives is hard to measure. For example, although FAA has completed the deployment of CRU-X/ATO Resource Tool, a computer-based tool to record time and attendance and labor distribution for operational controllers and supervisors, it is very difficult to directly measure the impact the tool has had on productivity gains in the controller workforce.

Some initiatives are easier to measure, and their impact has been measured in the 2006 Update. For example, by eliminating many workgroups, meetings, and conferences, FAA indicated in the 2006 Update that it was able to save almost \$1 million from the previous year.

Other initiatives, however, may have a quantifiable result, but may not have a direct effect on controller staffing. For example, while FAA claims that it realized a cost avoidance of \$1 million last year through its workers compensation return-to-work policy, this program does not always return a controller back to the radar screen. Usually, a controller is returned to work in some lesser capacity, such as performing administrative duties. A controller in the return-to-work program must still be replaced on radar position by another controller on the schedule.

⁵ Since the 2006 Update was released in August 2006, the productivity gains for FY 2006 were not available.

Findings

Other initiatives could not be measured because they were dependent upon a new contract for controllers. At the onset of our review, FAA and NATCA were engaged in negotiations over a new collective bargaining agreement. After declaring an impasse and submitting all open articles to Congress for a 60-day review (as required by 1996 personnel reform legislation) on June 5, 2006, FAA imposed its last offer for all unresolved issues and unilaterally imposed a new contract for controllers. FAA began implementing terms of the new contract on September 3, 2006. With the implementation of the new contract, FAA can begin exploring other flexibilities to improve staffing, such as the use of more flexible work schedules, part-time controllers and split shifts. New methods for scheduling leave under the new contract could also have a significant effect on the need for overtime, thus increasing staff savings.

Overall, we found that FAA is making progress in implementing the initiatives from the 2004 Plan, but the impact of each initiative in achieving desired goals is unclear. Since FAA did not establish baseline metrics for a majority of the initiatives, we could not determine the impact that each individual initiative had in increasing productivity and reducing staffing during this review.

Accordingly, we are reiterating our 2005 report recommendation that FAA needs to establish baseline metrics for the initiatives and then update the workforce plan annually to reflect the actual progress in achieving each initiative and ultimately in achieving its goal to reduce controller staffing by 10 percent. FAA concurred with this recommendation in July 2005 and agreed to include the information in the 2006 Update but did not. We are requesting that FAA provide us with new target dates for addressing this recommendation.

Costs: FAA Still Has Not Identified the Total Costs Associated With Implementing the 2004 Plan

Area of Concern	Status	Comments
Costs	Red	<ul style="list-style-type: none"> • FAA lacks detailed cost estimates of the 2004 Plan. • FAA needs to identify offsetting savings from the new contract for controllers.
<p>FAA's 2006 Update does not identify the annual and total costs for hiring, training, and certifying new controllers to meet future requirements. In addition, FAA needs to estimate any offsetting cost reductions realized with the implementation of a new contract for controllers. As we stated in our 2005 report, without detailed costs, neither Congress, the Department, nor the Office of Management and Budget will have a clear understanding of the financing needed to fulfill the future air traffic controller requirements as proposed in the 2004 Plan.</p>		

Findings

FAA submitted some of the cost details associated with the 2004 Plan in its FY 2007 budget submission. For example, FAA requested \$18.2 million to hire and train new controllers in FY 2007. Of that amount, \$7.5 million is to hire 1,136 new controllers in FY 2007 and the remaining \$10.7 million is for controller technical training, which supports classroom and laboratory training for approximately 2,500 controllers hired since FY 2005. However, FAA does not provide estimated details for FY 2008 and beyond, when hiring projections remain at over 1,000 new controllers per year.

FAA should also include in the estimates any offsetting cost reductions realized from the 2004 Plan. While the largest costs associated with the 2006 Update will be hiring over 11,800 new controllers over the next 10 years, FAA has made improvements in reducing the training costs and salaries for the new hires. For example, FAA is saving \$20,000 per trainee while at the Academy because of restructured travel and compensation policies for trainees attending initial Academy training.

In addition, the salaries for new hires will be lower with the implementation of the new contract for controllers. For example, under the old contract, an Academy graduate had an annual base salary of between \$38,080 and \$53,312. Under the new contract, an Academy graduate will earn an annual base salary of \$31,700. Over time, this will help reduce FAA's average base salary and, in turn, will help reduce the growth of FAA's operating costs.

FAA needs to develop detailed cost estimates and offsetting savings before the next update of its workforce plan, particularly now that questions concerning new controllers' salaries have been settled under the new contract for controllers. These estimates should also be updated annually to reflect the Agency's progress in meeting the requirements of the 2004 Plan, and any changes made to the 2004 Plan. We also recommended this in our May 2005 report; FAA concurred in July 2005 and agreed to include the information in the 2006 Update but did not. We are requesting that FAA provide us with new target dates for addressing this recommendation.

Findings

RECOMMENDATIONS

We recommend that FAA:

1. Include in the next update of the Plan the progress made by the Agency and its contractors in validating facility staffing standards including the number of facilities completed, the staffing ranges established for each of those locations, and the estimated completion date for all remaining facilities.
2. Refine its methodology for projecting controller retirements so that events that have the potential to significantly impact controller retirements (similar to what occurred in September 2006) are taken into consideration.
3. Issue clear instructions to all air traffic facilities on exactly which data should be included in the national database and how those data should be entered.
4. Begin using the OJT national database to (a) determine whether training resources can be used more efficiently and effectively, (b) identify best practices, and (c) identify and investigate instances where excessive time lapses in the OJT process occurred.

In addition, we made the following recommendations in our May 2005 report on controller staffing:

- Establish baseline metrics for all of the initiatives in the 2004 Plan and annually evaluate actual progress made in (a) implementing each initiative and (b) achieving the anticipated staffing reduction of 10 percent.
- Develop detailed cost estimates and offsets that identify the annual and total net costs associated with the 2004 Plan.

FAA concurred with these recommendations in July 2005 and agreed to include the information in the 2006 Update but did not. Accordingly, we are requesting that FAA provide us with new target dates for addressing these recommendations.

MANAGEMENT COMMENTS AND OIG RESPONSE

We provided FAA with a draft copy of this report on December 15, 2006, for comment. On February 8, 2007, FAA gave us its formal response, which is contained in its entirety in the Appendix.

FAA concurred with our recommendations to include the progress made in validating staffing standard models in the next update of the Plan, issue instructions on data to be included in the OJT national database, and use the database to improve oversight of the OJT process (recommendations 1, 3, and 4). We consider these recommendations resolved.

FAA did not agree with our second recommendation (to refine its projected retirement methodology). In its response, FAA states that in the second half of FY 2006, actual retirements versus projections began to diverge, most likely as a result of the rhetoric associated with the contract impasse. However, FAA points out that it was able to proactively increase its planned new hires during the last quarter of the year to compensate for the increased retirements. According to FAA, rather than refining the methodology to account for one-time events, it believes the ability to adjust the hiring pipeline is a more appropriate way to deal with unpredictable events that may affect controller retirements.

In our draft report, we advised FAA that it could provide alternative courses of action that it believes would resolve the issues presented in this report. In this instance, the actions proposed by FAA meet the intent of our recommendation, which was to ensure that the Agency was adequately prepared to address unanticipated increases in controller retirements. FAA's planned actions should address our concerns. Accordingly, we consider this recommendation resolved as well.

In addition, we made the following recommendations in our May 2005 report on controller staffing:

- Establish baseline metrics for all of the initiatives in the 2004 Plan and annually evaluate actual progress made in (a) implementing each initiative and (b) achieving the anticipated staffing reduction of 10 percent.
- Develop detailed cost estimates and offsets that identify the annual and total net costs associated with the 2004 Plan.

FAA concurred with these recommendations in July 2005 and agreed to include the information in the 2006 Update but did not. We requested that FAA provide us with new target dates for addressing those recommendations. In its response to this report, FAA reiterated that it concurred in part with both recommendations.

Management Comments and OIG Response

However, it is unclear exactly what actions the Agency plans to take. For example, concerning our prior recommendation to establish baseline metrics for all initiatives in the 2004 Plan, FAA states in its response:

. . .there were more than 35 separate initiatives listed in the 2004 Plan, most of which are interdependent (non-separable) and/or have no costs associated with them. Therefore, they cannot be baselined to derive meaningful quantifiable measures tied to productivity. In addition, broad changes realized as a result of our contract negotiations impact the initiatives identified in the 2004 Plan and present new opportunities for improvement.

We can, however, show that we are achieving total productivity, as measured by bottom line improvements. We will continue to provide status updates for initiatives that will help the agency achieve the total productivity goal, but estimating the contribution of each initiative is labor intensive, costly, and would divert resources.

Concerning our prior recommendation to develop detailed cost estimates and offsets that identify the annual and total net costs associated with the 2004 Plan, FAA states in its response:

Determining the total cost of implementing the plan is difficult to calculate because the cost to hire and train the new controllers is embedded in the agency's annual budget. Further, since improvements are made each year, total 10 year costs would vary from year to year in the plan. Annually, the budget identifies training and hiring costs as well as cost savings from some FAA initiatives. The previous budget (FY 2006) included a discretionary increase to expand Academy training in order for the agency to have adequate funding to train new staff consistent with targets set in the plan. In addition, developmental controllers in various stages of training actually perform controller work as they move towards CPC status, so those salaries are included in the PC&B costs of our budget request. In addition, this year's plan will have some cost information.

We find FAA's response unclear as to exactly what the Agency plans to do. We are requesting that FAA clarify its intentions to (1) show that it is achieving total productivity, as measured by "bottom line improvements," and (2) include in this year's plan "some cost information."

ACTIONS REQUIRED

In accordance with Department of Transportation Order 8000.1C, we are requesting that FAA provide us, within 30 calendar days, with a timeframe for implementing the planned actions regarding recommendations 3 and 4 (issuing instructions on data to be included in the OJT national database and using the database to improve oversight of the OJT process). In addition, we are requesting that FAA clarify its intentions regarding our prior recommendations to (a) establish baseline metrics for all of the initiatives in the 2004 Plan and (b) develop detailed cost estimates and offsets that identify the annual and total net costs associated with the 2004 Plan.

EXHIBIT A. SCOPE AND METHODOLOGY

This audit was conducted in accordance with Government Auditing Standards prescribed by the Comptroller General of the United States and included such tests as we considered necessary to provide reasonable assurances of detecting abuse or illegal acts. The following scope and methodology were used in conducting this review.

During this audit, we visited FAA Headquarters, the FAA Training Academy, two en route facilities, two TRACONs, and six air traffic control towers. We gathered data and interviewed officials at all locations visited. We also reviewed and analyzed FAA's 2006 Update to "A Plan for the Future, The Federal Aviation Administration's 10-Year Strategy for the Air Traffic Control Workforce," issued in August 2006.

To evaluate actions taken or planned by FAA to address implementation of key staffing and training elements of the Controller Workforce Plan, we conducted interviews with managers at all levels of the Agency. We compared staffing numbers and projections from the facilities with the numbers from Headquarters to determine whether they correspond. We discussed the differences in the controller hiring process with the Aviation Careers Division in Oklahoma City to determine if improvements were made to the hiring process over the past 2 years. As a point of reference for training statistics, we visited facilities that we visited previously during our 2004 and 2005 audits. The differences in staffing and training processes were then recorded and analyzed. We also reviewed and analyzed the 2006 Update to determine whether past OIG recommendations were implemented.

To determine the effects of implementing other productivity initiatives from the 2004 Plan, we interviewed FAA officials concerning establishing baseline metrics for the initiatives and whether impacts of the initiatives are being monitored. We also reviewed and analyzed the initiative status FAA provided in the 2006 Update to determine whether the productivity initiatives are being measured for effectiveness and whether impacts are being properly reported. We also analyzed data from FAA Headquarters to determine how air traffic controller productivity was being calculated.

Finally, we conducted a limited review of FAA's new national OJT database by comparing information from the database to actual training statistics from the facilities we visited to determine the accuracy of the database.

EXHIBIT B. FACILITIES VISITED

En Route Centers

- Washington Center
- New York Center

Terminal Radar Approach Control Facilities

- Potomac TRACON
- New York TRACON

Air Traffic Control Towers

- Dulles Air Traffic Control Tower (ATCT)
- Islip ATCT
- John F. Kennedy ATCT
- LaGuardia ATCT
- Manassas ATCT
- Reagan National ATCT

FAA Headquarters, Washington, D.C.

FAA Training Academy, Oklahoma City, OK

National Air Traffic Controllers Association Headquarters, Washington, D.C.

**EXHIBIT C. STATUS OF VARIOUS PRODUCTIVITY INITIATIVES
INCLUDED IN THE CONTROLLER WORKFORCE PLAN**

2004 CWP Productivity Initiative	2004 CWP Source	2004 CWP Goal	Target Date	FAA's 2006 Updated Progress
<i>Increased Work Efficiency</i>	3.3.1 (pp.24-25)	10-percent productivity / staff savings.	FY 2010	Achieved 3-percent productivity increase based on staff reduction only for FY 2005. FAA indicated that it had no methodology to measure the impact of most other productivity initiatives.
<i>Flexible Work Schedules</i>	3.3.2 & 3.3.3 (pp.25-26)	Part-time and split-shifts may reduce labor costs and offer employees job flexibility.	Unknown	No progress noted in 2006 Update, as the new contract for controllers was implemented in Sept. 2006, after the 2006 Update was issued.
<i>Overtime Management</i>	3.3.4 (p.26)	Reduced overtime costs and staffing.	FY 2005	Overtime was held to FY 2004 levels with reduced staffing.
<i>Reduction of Sick Leave Usage</i>	3.3.5 (pp.5 & 27)	8-percent reduction (Approx equivalent savings: 73 controllers).	FY 2006	FY 2005 sick leave usage "slightly below" FY 2004 (exact percentage not reported).
<i>Reduction in Workers' Compensation</i>	3.3.6 (p.28)	Revised management approach will be implemented agency-wide.	FY 2007	New management of claims estimated cost avoidance of \$5.4 million. Return - To-Work cost avoidance estimated at \$1 million
<i>Limiting Official Time to Negotiated Hours</i>	3.3.7 (p.29)	Reduce official time used for union representational duties.	March 2005	Official time reporting system implemented in FY 2005. ATO to ensure all official time in accord with the new contract for controllers. Ten full-time persons returned to the workforce.
<i>Limiting Controller Participation on Workgroups</i>	3.3.8 (p.29)	Institute more judicious use of controller participation and reduce backfill overtime.	Unknown	Participation reduced by 23,400 hrs (-37 percent from FY 2004). Cost savings = almost \$1 million.
<i>Processing Unsuccessful Developmentals</i>	3.3.9 (p.30)	Uphold policies stated in FAPM Letter 330-1 to help remedy staffing imbalance between terminal and en route facilities.	Current policy	Developmental performance results not yet reported for FY 2006.

Exhibit C. Status of Various Productivity Initiatives Included in the Controller Workforce Plan

2004 CWP Productivity Initiative	2004 CWP Source	2004 CWP Goal	Target Date	FAA's 2006 Updated Progress
<i>Scheduling Tool</i>	3.3.11 (p.31)	Improve the efficiency of facility-based controller work schedules.	Unknown	Vendor selected in April 2006. Pilot evaluation started in May 2006. National deployment in FY 2007 and beyond.
<i>Implementation of Cru-X/ART</i>	3.3.12 (p.31)	More efficient controller utilization.	Final phase begins June 2005	Deployment to all en route and terminal facilities complete.
<i>Changing National Airspace Technologies</i>	3.3.13 (pp.31-32)	Improve automation and timely availability of data to controllers to reduce the staffing requirement.	Unknown	Fielding and implementation of numerous technologies is ongoing and projected into the future as far as 2025.
<i>Facility Co-Location and Consolidations</i>	3.3.13.1 (p.33)	Consolidate several small facilities to decrease operations, maintenance, and infrastructure costs.	Unknown	Terminal and en route co-location and realignment studies are in progress.

Exhibit C. Status of Various Productivity Initiatives Included in the Controller Workforce Plan

EXHIBIT D. MAJOR CONTRIBUTORS

Daniel Raville	Program Director
Robert A. Romich	Project Manager
Erik Phillips	Senior Analyst
Mi Hwa Button	Analyst
Claudia Estrada	Analyst
Benjamin Huddle	Analyst
Andrea Nossaman	Writer/Editor

EXHIBIT E. RELATED OFFICE OF INSPECTOR GENERAL REPORTS (2002 – 2006)

- CC-2006-074, “Observations on FAA’s Oversight of Aviation Safety,” September 20, 2006.
- CC-2006-027, “Perspectives on FAA’s FY 2007 Budget Request and the Aviation Trust Fund,” March 28, 2006.
- AV-2006-021, “FAA Has Opportunities To Reduce Academy Training Time and Costs by Increasing Educational Requirements for Newly Hired Air Traffic Controllers,” December 2005.
- AV-2005-060, “Controller Staffing: Observations on FAA’s 10-Year Strategy for the Air Traffic Controller Workforce,” May 26, 2005.
- CC-2005-022, “Next Steps for the Air Traffic Organization,” April 14, 2005.
- AV-2004-081, “FAA’s Actions To Address Leave and Overtime Abuse at Five Locations,” September 9, 2004.
- CC-2004-058, “Addressing Controller Attrition: Opportunities and Challenges Facing the Federal Aviation Administration,” June 15, 2004.
- AV-2004-060, “Opportunities To Improve FAA’s Process for Placing and Training Air Traffic Controllers in Light of Pending Retirements,” June 2, 2004.
- AV-2004-033, “Using CRU-X To Capture Official Time Spent on Representational Activities,” February 13, 2004.
- AV-2003-059, “FAA’s Management of Memorandums of Understanding with the National Air Traffic Controllers Association,” September 12, 2003.
- AV-2003-011, “FAA’s Oversight of Workers’ Compensation Claims in Air Traffic Services,” January 17, 2003.
- AV-2002-064, “Automated Flight Service Stations: Significant Benefits Could be Realized by Consolidating AFSS Sites in Conjunction with Deployment of OASIS,” December 7, 2001.

These reports can be found on the OIG website at www.oig.dot.gov.

APPENDIX. MANAGEMENT COMMENTS

Federal Aviation
Administration

Memo

To: Principal Assistant Inspector General for Auditing and Evaluation

From: Assistant Administrator for Financial Services and Chief Financial Officer *Edwards*

Date: February 8, 2007

Re: **ACTION:** Draft Report: FAA Continues To Make Progress in Implementing Its Controller Workforce Plan, but Further Efforts Are Needed in Several Key Areas Project Number 06A3010A000

As requested in your memorandum dated December 15, 2006, the following is the Federal Aviation Administration's (FAA) response to the subject draft report.

1. **OIG Recommendation:** Include in the next update of the Plan the progress made by the Agency and its contractors in validating facility staffing standards including the number of facilities completed, the staffing ranges established for each of those locations, and the estimated completion date for all remaining facilities.

FAA Comments: Concur. As described in chapter 3 of the 2006 Plan, staffing requirements are fluid and can be impacted by a number of variables. FAA plans to publish staffing ranges for all facilities in the next update of the Plan and subsequent plans will be updated with revised ranges as the families of staffing models are revised. We will make facility-specific adjustments as necessary throughout the year, as we did last year.

2. **OIG Recommendation:** Refine its methodology for projecting controller retirements so that events that have the potential to significantly impact controller retirements (similar to what occurred in September 2006) are taken into consideration.

FAA Comments: Non-Concur. As noted in the Inspector General's report, the FAA made improvements to its methodology for projecting controller

retirements. In the first six months of FY06, FAA's projections tracked very close to actual retirements. However, in the second half of FY06, actual retirements versus projections began to diverge, most likely as a result of the rhetoric associated with the contract impasse. Even so, the FAA was able to proactively increase its planned new hires during the last quarter of the year to compensate for the increased retirements. Rather than refining the methodology to account for one-time events, the FAA believes the ability to adjust the hiring pipeline is a more appropriate way to deal with unpredictable events which may affect controller retirements.

We note that for the first quarter of FY07, actual retirements are running about 42 per month, which is in line with projections. We do expect a significant spike for the month of January, as this is typical in previous years as well. In October 2006 we set up our pipeline to accommodate more new hires than expected losses in the event that projections are inaccurate or other unforeseen circumstances occur.

Finally, with respect to the 20% reduction in CIP, it is the agency's intent to replace CIP with a more focused program designed to address retention and recruitment at hard to staff facilities. We believe this will mitigate the effect, if any, on retirements as a result of changes in the CIP program.

3. **OIG Recommendation:** Issue clear instructions to all air traffic facilities on exactly what data should be included and how those data should be entered into the OJT national database.

FAA Comments: Concur.

4. **OIG Recommendation:** Begin using the OJT national database to (a) determine whether training resources can be used more efficiently and effectively, (b) identify best practices, and (c) identify and investigate instances where excessive time lapses in the OJT process occurred.

FAA Comments: Concur.

While the IG pointed out a single facility where training gaps were still occurring, we note that since we have begun focusing on the OJT process, there have been improvements at various facilities. ATO has implemented the OJT database in both Enroute and Terminal training operations. Enroute has two training metrics in the FY07 Strategic Management Plan (SMP) which rely on queries from the database. The first metric measures the "three years to CPC" guidance in the FAA flight plan and the second measures progress in the individual stages of training: "90% of our developmentals must be on track in their stage training." Enroute is reviewing these measures monthly

with all 20 centers and questioning individual facility training efficiency and practices.

- **OIG Recommendation:** Establish baseline metrics for all of the initiatives in the 2004 plan and annually evaluate actual progress made in (a) implementing each initiative and (b) achieving the anticipated staffing reduction of 10 percent.
- **FAA Comments:** Concur, in part. The Controller Workforce Plan was developed at the request of Congress to ensure that we have a plan to replace retiring controllers. As part of the Plan, there were more than 35 separate initiatives listed in the 2004 Plan, most of which are interdependent (non-separable) and/or have no costs associated with them. Therefore, they cannot be baselined to derive meaningful quantifiable measures tied to productivity. In addition, broad changes realized as a result of our contract negotiations impact the initiatives identified in the 2004 Plan and present new opportunities for improvement.

We can, however, show that we are achieving total productivity, as measured by bottom line improvements. We will continue to provide status updates for initiatives that will help the agency achieve the total productivity goal, but estimating the contribution of each initiative is labor intensive, costly, and would divert resources.

- **OIG Recommendation:** Develop detailed cost estimates and offsets that identify the annual and total net costs associated with the 2004 Plan.

FAA Comments: Concur, in part. Determining the total cost of implementing the plan is difficult to calculate because the cost to hire and train the new controllers is embedded in the agency's annual budget. Further, since improvements are made each year, total 10 year costs would vary from year to year in the plan. Annually, the budget identifies training and hiring costs as well as cost savings from some FAA initiatives. The previous budget (FY 2006) included a discretionary increase to expand Academy training in order for the agency to have adequate funding to train new staff consistent with targets set in the plan. In addition, developmental controllers in various stages of training actually perform controller work as they move towards CPC status, so those salaries are included in the PC&B costs of our budget request. In addition, this year's plan will have some cost information.

The following pages contain textual versions of the graphs and charts found in this document. These pages were not in the original document but have been added here to accommodate assistive technology.

**The Federal Aviation Administration Continues To Make Progress in
Implementing Its Controller Workforce Plan, but Further Efforts Are Needed in
Several Key Areas**

Section 508 Compliant Presentation

Figure 1. Some of the Various Numbers Used To Define National Staffing Requirements

Controllers by Facility Type	Fiscal Year 2006 Staffing Standard	Interim Staffing Target	Actual On Board
Number of En Route Controllers	7,760	5,695	6,603
Number of Terminal Controllers	7,297	7,807	7,676
Total	15,057	13,502	14,279

Source: Federal Aviation Administration

Figure 2. Various Numbers Used To Define Controller Requirements for Two Facilities

Controller Locations	Actual On Board	Fiscal Year 2006 Staffing Standard	Interim Staffing Target	Negotiated Number
Number at New York TRACON	190	179	199	270
Number at Washington Center	371	485	337	412

Source: Federal Aviation Administration

Figure 3. The Federal Aviation Administration's Controller Retirement Projections Versus Actual Retirements

Figure 3a. Fiscal Year 2005 Projections Versus Actual Retirements

Controller Retirement	Fiscal Year 2005
2004 Plan Retirement Projections	341
Actual Retirements	465

Source: Federal Aviation Administration

Figure 3b. Fiscal Year 2006 Projections Versus Actual Retirements

Controller Retirement	Fiscal Year 2006
2004 Plan Retirement Projections	439
2006 Update (Anticipated Retirements During FY 2006)	467
Actual Retirements	583

Source: Federal Aviation Administration

The Figure 3 charts illustrate that the 2004 plan projected that 341 air traffic controllers would retire in fiscal year 2005, and 439 would retire in fiscal year 2006. Actual retirements for fiscal year 2005, however, were 465 controllers. The 2006 update revised anticipated retirements in fiscal year 2006 from 439 to 467. However, 583 controllers actually retired during fiscal year 2006.

Figure 4. The Federal Aviation Administration’s Total Projected Controller Losses*

Fiscal Year	2004 Plan Total Losses	2006 Update Total Losses
2006	654	800
2007	907	1,007
2008	967	1,008
2009	1,032	1,017
2010	1,144	1,051
2011	1,249	1,098
2012	1,375	1,167
2013	1,451	1,107
2014	1,559	1,059

Source: Federal Aviation Administration 2004 Plan and 2006 Update.

*Total losses include retirements, resignations, removals, deaths, training failures, and promotions.

Figure 5. Federal Aviation Administration Fiscal Year 2006 Projected Retirements Versus Actual Retirements

Month and Fiscal Year	Projected Fiscal Year 2006	Actual Fiscal Year 2006
October 2005	17	15
November 2005	25	26
December 2005	40	23
January 2006	99	103
February 2006	21	32
March 2006	29	26
April 2006	49	52
May 2006	23	40
June 2006	47	64
July 2006	48	55
August 2006	26	50
September 2006	39	97

Source: Federal Aviation Administration

During the first 6 months of fiscal year 2006, the Federal Aviation Administration's projections were extremely close to the actual number of retirements. However, beginning in April 2006, actual retirements began exceeding the Federal Aviation Administration's projections when negotiations between the Agency and the National Air Traffic Controllers Association over a new collective bargaining agreement reached an impasse. By September, when the Federal Aviation Administration began unilaterally implementing its own proposals for open Articles, actual retirements were nearly three times high than the Federal Aviation Administration had projected, which underscores the need for the Agency to refine its methodology to consider future events that could trigger a similar reaction.

For example, there may be a significant jump in controller retirements during January 2007 when many controllers will see a reduction in their pay checks as the Federal Aviation Administration begins phasing out, a second locality pay that many controllers now receive.

Figure 6. Federal Aviation Administration's Controller Hiring Estimates

Figure 6a. Fiscal Year 2005 Estimates Versus Actual Hires

Controller Hiring	Fiscal Year 2005
2004 Plan Hiring Projections	435
Actual Number of Controllers Hired	519

Source: Federal Aviation Administration

Figure 6b. Fiscal Year 2006 Estimates Versus Actual Hires

Controller Hiring	Fiscal Year 2006
2004 Plan Hiring Projections	1,249
2006 Update (Anticipated New Hires Needed During Fiscal Year 2006)	930
Actual Number of Controllers Hired	1,116

Source: Federal Aviation Administration

Because actual controller retirements were more than the Federal Aviation Administration's projections in fiscal year 2005 and fiscal year 2006, FAA hired more controllers than they had anticipated. As illustrated in Figure 6, the 2004 plan projected a need for 435 new controllers in FY 2005. The Federal Aviation Administration hired 519 controllers. Likewise, the Federal Aviation Administration's 2006 update projected a need for 930 new controllers in fiscal year 2006, while 1,116 new controllers were actually hired. The increased hiring levels were possible because the Federal Aviation Administration has made progress in streamlining the controller hiring process.