REVIEW OF THE AIR TRAFFIC CONTROLLER FACILITY TRAINING PROGRAM

Federal Aviation Administration

Report Number: AV-2008-055
Date Issued: June 5, 2008

**U.S. Department of
Transportation**

Office of the Secretary
of Transportation
Office of Inspector General

Memorandum

Subject: <u>ACTION</u>: Review of the Air Traffic Controller
Facility Training Program
Federal Aviation Administration
Report Number AV-2008-055

Date: June 5, 2008

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

Reply to
Attn. of: JA-10

To: Acting FAA Administrator

This report provides the results of our review of the Federal Aviation Administration's (FAA) air traffic controller facility training program. Our objectives were to (1) assess the adequacy of FAA's plans to effectively train an increasing number of new controllers at the facility level and (2) determine FAA's progress in implementing key initiatives for reducing facility training time and costs. We conducted the review between June 2007 and March 2008 and visited the FAA Training Academy and 20 air traffic control facilities. Exhibit A details our review scope and methodology. Exhibit B lists the facilities visited during the audit.

We last reviewed FAA's facility training program in June 2004.[1] During that review, we found that FAA provided minimal oversight of the program at the national level, even though facility training is the longest and most expensive portion of the training process. We recommended that FAA compile national statistics on key performance measurements, establish a baseline to better manage the time and costs associated with the controller facility training process, and include these in developing a centralized tracking system for facility training.

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[1] 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 are available on our website: www.oig.dot.gov.

BACKGROUND

In 1981, following a period of labor unrest, an overwhelming majority of the air traffic control workforce went on strike. When 10,438 striking controllers did not return to work in 1981, then-President Reagan fired them. To make up for the loss, FAA hired over 8,700 new controllers between 1982 and 1983, and, between 1983 and 1991, FAA hired an average of 2,655 controllers each year. By the end of fiscal year (FY) 1992, the strike recovery period had ended and controller hiring stabilized to the level of "one retirement—one hire." This hiring wave created a large pool of controllers who have reached or will reach retirement eligibility at roughly the same time.

In December 2004, FAA issued its first annual Controller Workforce Plan (CWP) detailing its strategy for hiring and training new air traffic controllers. In the 2008 update of the CWP, FAA further outlined its plans for hiring approximately 17,000 new controllers through 2017. A significant challenge for FAA will be training and certifying the large numbers of newly hired or "developmental" controllers at their respective facilities; controllers can take up to 3 years to complete training.

Developmental controllers and transferring veteran controllers face a demanding training process at their assigned locations.[2] The training is conducted in stages and consists of a combination of classroom, simulation, and on-the-job training (OJT). After controllers complete classroom and simulation training they begin OJT, which is conducted by a Certified Professional Controller (or CPC) who observes and instructs trainee controllers individually as they work the control position.

Controllers in training achieve certification on each position as they move through the various stages. After they have certified on all positions within their assigned area, they are commissioned as a CPC at that facility. Training new controllers to the CPC level is important for two reasons: (1) only CPCs are qualified to control traffic at *all* positions of their assigned area and (2) only CPCs certified for at least 6 months (at their assigned locations) can become OJT instructors for other new controllers. FAA must have enough OJT instructors at all locations if it is to achieve its ambitious hiring and training plans for the next 9 years and beyond.

It is important to note that new controllers who have completed portions of training and certified on a position can independently staff that position. However, controllers are not qualified CPCs until they have certified on all positions within their assigned area. In addition, using position-qualified

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[2] For the purposes of this report, we included both new controllers (developmentals) and transferring veteran controllers in training (CPC-ITs) as developmentals.

controllers extensively to staff positions can lengthen the time required for them to become CPCs since they are not training on other new positions.

RESULTS IN BRIEF

Overall, we found that FAA's facility training program continues to be extremely decentralized and the efficiency and quality of the training varies among locations. We found similar problems in 2004, and, with the influx of developmental controllers, some facilities are now struggling to meet training demands. FAA is taking actions at the national level to get this important program on track. For example, FAA increased the use of contractor training support from 53 facilities in 2004 to 190 facilities in 2007. This is clearly a step in the right direction; FAA now needs to ensure there are no gaps in this important contractor support as it pursues new training initiatives. Many of FAA's other efforts are still in the early stages of implementation. To enhance its facility training program, FAA needs to take the following actions.

FAA must establish realistic standards for the number of developmental controllers that facilities can accommodate. As of December 2007, developmental controllers comprised over 25 percent of the national controller workforce—up from about 15 percent in 2004. FAA plans to increase this number to over 30 percent, which would be the highest percentage of developmental controllers in the past 15 years.

In its CWP, FAA estimates that the controller workforce at each facility can comprise up to 35 percent of developmental controllers and still maintain operations and accomplish training. FAA also estimates that if facilities exceed that amount, their training times would significantly increase because the number of developmental controllers would surpass available training capacity.

We found that many facilities meet or exceed the 35-percent level. As of December 2007, 70 facilities nationwide (over 22 percent of all FAA air traffic control facilities) exceeded that level, compared to just 22 in April 2004. This represents a 218-percent increase in just 3 years. For example, according to FAA's national training database, as of December 2007:

- Teterboro Tower had 12 CPCs and 13 developmental controllers (52 percent developmental).

- Oakland Center had 163 CPCs and 101 developmental controllers (38 percent developmental).

- Las Vegas Terminal Radar Approach Control (TRACON) had 22 CPCs and 22 developmental controllers (50 percent developmental).

Many facility managers, training officers, and union officials we spoke with disagreed with FAA's estimated acceptable percentage level. They stated that in order to achieve effective controller training while maintaining daily operations, the maximum percentage of developmental controllers should be limited to between 20 and 25 percent of a facility's total controller workforce.

Further, FAA's 35-percent estimate was originally intended to determine how many developmental controllers could be processed through the FAA Academy, not how many new controllers could be trained at individual facilities. However, it appears that FAA is now using that percentage as a benchmark for all facilities.

FAA Headquarters officials agreed that "no one size fits all" when determining how many trainees a facility can accommodate; however, given the various sizes and complexities of FAA's more than 300 facilities, the Agency must re-examine its estimate and identify (by facility type) how many developmental controllers facilities can realistically accommodate.

FAA must ensure the standards developed address individual facilities' training capacity. In February 2007,[3] we reported that FAA centralized its hiring process, which helped to eliminate duplicative efforts and allowed individual facilities to identify prospective new controllers up to 1 year in advance of hiring.

FAA has hired 3,450 new controllers since 2005, but its hiring process is now outpacing the capabilities of many air traffic facilities to efficiently process and train new hires. During our review, facility managers at numerous locations stated that developmental controllers assigned to their facilities had to wait for extended periods of time before starting the simulator portion of their training because the number of developmental controllers exceeded facility training capacity.

For example, the Miami Center had 98 developmental controllers (or 34 percent of the facility's controller workforce) as of December 2007. Facility management and the local representative for the National Air Traffic Controllers Association (NATCA) both agreed that the facility lacked the physical capacity to effectively train such a large population of developmental controllers, even when they were evenly distributed throughout the various stages of facility training. Consequently, developmental controllers' facility training was delayed by as much as 9 months.

FAA managers identified several key factors that affect a facility's ability to accept and train new controllers. For example, managers stated they must have a sufficient number of OJT instructors to accommodate developmental controllers. This is important because a significant part of training for a developmental controller involves working live traffic with an OJT instructor. Each control

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[3] OIG Report Number AV-2007-032, "FAA Continues To Make Progress in Implementing Its Controller Workforce Plan, but Further Efforts Are Needed in Several Key Areas," February 9, 2007.

position has a minimum and maximum number of hours allotted for OJT, which is often the longest and most difficult part of facility training.

Managers also identified limitations to a facility's training capacity that can impact the number of new controllers a facility can realistically accommodate. These include the availability of classroom space, simulators, and contract instructors to conduct the classroom and simulator portions of training.

Finally, managers told us that the need to instruct current CPCs on new equipment or new procedures takes precedence over developmental controller training and therefore can limit the availability of classroom and simulator capacity for training new controllers.

To ensure that it does not overload facilities with developmental controllers, FAA needs to take steps to mitigate these factors before determining where and when to place new hires.

FAA needs to continue encouraging veteran controllers to transfer to higher-level, busier locations. We also found that fewer veteran controllers are transferring from lower-level, less complicated facilities to higher-level, busier locations. From April 2004 to December 2007, the number of transferring veteran controllers decreased by nearly 34 percent (from 1,217 in 2004 to 808 in 2007).

As a result, some facilities that previously relied exclusively on transferring veteran controllers to fill vacancies have been forced to redesign their training programs to accommodate the growing numbers of inexperienced controllers. Facility managers stated that these issues significantly increase the time it will take new controllers to become certified.

For example, at the Chicago TRACON, managers told us they had to extend their facility training program by 10 weeks to accommodate the additional training needs of inexperienced, developmental controllers. The facility had historically received more experienced controllers.

FAA is aware of this concern and announced a new program in January 2008 that offers a retention incentive bonus to veteran controllers at key facilities if they remain with the Agency after becoming eligible to retire. Those actions are a step in the right direction; FAA should report the preliminary results of this incentive in its next update of the CWP and ensure its busiest facilities benefit from veteran controllers' valuable experience.

Some stakeholders also have expressed concerns over the fact that many developmental controllers are now being placed directly at busy, higher-level facilities with no prior experience. At the request of Chairman Costello of the

House Subcommittee on Aviation, we are reviewing controller training failures (developmental and transferring controllers who fail training either at the FAA Academy or at their assigned facility). As part of that review, we are examining possible root causes of training failures, which could include the facility level where new controllers are placed. In addition, at the request of Senator Durbin of Illinois, we are reviewing factors, training-related or otherwise, that could affect controller fatigue.

FAA needs to clarify responsibilities for oversight and direction of the facility training program at the national level. Since the creation of the Air Traffic Organization (ATO), FAA has assigned national oversight responsibility for facility training to the ATO's Vice President for Terminal Services and Vice President for En Route Services. In addition, the ATO's Vice President for Acquisition and Business Services oversees new controller hiring and the FAA Academy training program, and the Senior Vice President for Finance oversees the development of the CWP. All four offices play key roles in the controller training process.

Because of these overlapping responsibilities, we found significant confusion at the facility level. During our review, facility managers, training managers, and even Headquarters officials were unable to tell us who or what office was ultimately responsible for facility training. FAA needs to clarify responsibility for oversight and direction of the facility training program at the national level and effectively communicate those roles to facility managers.

FAA needs to implement key initiatives for facility training from its 2004 Controller Workforce Plan. FAA has not implemented several key initiatives relating to facility training that it first proposed in its 2004 CWP. Those included "developing, implementing, and enforcing a policy that assigns facility training as a priority second only to operations." This was to be accomplished by (1) placing developmental controllers only at facilities that had available training capacity, (2) requiring facility managers to suspend training *only* for critical operational necessities, and (3) establishing nominal "time-to-certify" metrics and holding managers accountable for achieving those targets. FAA never issued this policy.

FAA also stated in the 2004 CWP that it would "conduct a thorough review of facility training to ensure it begins where the Academy ends. This review will take into consideration other efficiency gains identified in this plan and will result in facility training programs tailored to meet the needs of developmental controllers of the future." FAA intended this effort to help reduce the time it takes new controllers to become CPCs; however, FAA never conducted the evaluation.

In June 2004, we recommended that FAA develop and implement a national training database to collect data from field facilities, analyze the data at the

national level, and determine if there were any trends (positive or negative) that required intervention. FAA subsequently included the national OJT training database as an initiative in its December 2004 CWP. According to FAA, implementing the initiative would include recommending best practices to facility managers based on a "snapshot" of the database by March 2006 and then applying the best practices by May 2006.

In the 2007 update of the CWP, FAA stated that it had "fully implemented the on-the-job training database for both en route and terminal training." We found, however, that while facilities were entering their training data on a monthly basis, FAA Headquarters was not reviewing the data for accuracy. During our review, we tested the accuracy of the underlying data. We found that while data from the en route facilities appeared to be fairly accurate, data from terminal facilities were not. Examples of obvious inaccuracies include the following:

- At four terminal facilities, the database indicated that the average times for developmental controllers to certify and become CPCs at those locations were actually negative numbers.

- At one terminal facility, the database showed that one developmental controller had certified as a CPC nearly 6 months before he arrived at the facility.

- At a Level 6 air traffic control tower (one of the least complicated types of facility operated by FAA), the database showed that two developmental controllers each took 7.94 years to become CPCs.

We also found that FAA Headquarters did not consistently use the database to identify positive or negative trends. For example, at the end of our audit, we observed that managers from the en route division were using the data to identify anomalies among various en route facilities' training efforts; however, managers within the terminal division were not. This could be related to the accuracy of the data entered by terminal managers.

FAA needs to begin using the national OJT database to identify trends at individual facilities that could indicate training problems and take corrective actions as needed. Until FAA is assured that the data in the national training database are accurate in both en route and terminal divisions, it cannot use these data to identify anomalies or best practices from the national statistics.

To its credit, FAA has successfully started an important initiative—increasing the use of training simulators. High fidelity tower simulators were recently installed at four towers: Chicago O'Hare, Miami, Ontario, and Phoenix. The simulators can be programmed with scenarios and occurrences exclusive to those airports, using actual aircraft with their respective call signs. By using simulators, controllers gain inherent knowledge of a particular airport, its airspace, and

application of air traffic procedures for that specific location. The simulators also have a function that writes software for additional airports; this allows controllers from surrounding facilities to utilize the simulators as well.

Results thus far indicate that simulators at towers are a valuable training tool. For example, the National Aeronautics and Space Administration (NASA) Ames Research Center evaluated this training and found that it took 60 percent fewer days for developmental controllers to complete ground control training at the Miami tower. At Chicago O'Hare, NASA reported that it took developmental controllers 42 percent fewer days to complete ground control training as a result of simulator training.

FAA plans to install 12 additional simulators this year (6 at large airports and 6 at the FAA Academy) and 12 next year (at other airports). FAA must ensure that this effort remains on track to capitalize on the significant success that this training has demonstrated.

FAA also recently added high fidelity simulators at several en route centers. According to FAA Headquarters officials, these systems are to be used only until the En Route Automation Modernization program is complete and should help to reduce the backlog of developmental controllers in training at those locations.[4]

SUMMARY OF RECOMMENDATIONS

Our recommendations focus on the actions FAA should take to improve its facility training program to achieve its plans for hiring and training 17,000 controllers through 2017. They include the following:

- Convene a working group to identify a target percentage or percentage range of developmental controllers that facilities can realistically accommodate while maintaining daily operations.

- Include in the next update to the Controller Workforce Plan the actual number of CPCs, CPC-ITs, and developmental controllers by location to provide stakeholders with an accurate representation of the controller workforce.

- Develop a process for placing newly hired controllers based on the factors that affect available facility training capacity.

- Include the initial results of the Agency's new controller retention bonuses in the 2009 update of the Controller Workforce Plan.

- Implement key training initiatives that were included in the December 2004 Controller Workforce Plan.

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[4] These simulators were not in use during our site visits.

We are making 12 recommendations, which are listed on pages 21 and 22.

SUMMARY OF AGENCY COMMENTS AND OFFICE OF INSPECTOR GENERAL RESPONSE

We provided FAA with our draft report on March 31, 2008, and requested its comments within 15 calendar days. We received FAA's comments on May 19, 2008. FAA concurred or partially concurred with 10 of our 12 recommendations and agreed to take the following actions:

- Convene a working group to identify target percentages of developmental controllers that facilities can accommodate.

- Develop a contingency plan for actions needed for continuing training support.

- Establish additional methods for disseminating successful training methods.

- Ensure that installation of simulators remains on track.

FAA did not, however, provide milestones for implementing the planned actions for all 10 recommendations. We therefore request that FAA provide us with that information.

FAA did not agree with our recommendation to include the actual number of CPCs, CPC-ITs, and developmental controllers by location in its next annual update to the Controller Workforce Plan. FAA stated that it does not believe that an annual snapshot of this information accurately depicts the dynamics of a rapidly changing controller workforce.

We strongly believe that periodic comparisons of the controller workforce provide critical data points for the Congress, the Secretary, and other stakeholders who must help ensure FAA has enough certified controllers to safely operate the National Airspace System. This is particularly important given the length of time required for new controllers to become CPCs. Training new controllers to the CPC level is critical because only CPCs are qualified to control traffic at all positions of their assigned area, and only CPCs can become OJT instructors for other new controllers. Having enough OJT instructors at all locations is a vital part of FAA's plan to hire and train 17,000 new controllers through 2017.

Since FAA does not believe a recurring update to its annual Controller Workforce Plan accurately portrays the changing dynamics of the controller workforce, then it should provide that information on a more frequent periodic basis (e.g., quarterly) to FAA's congressional committees of jurisdiction and our office under separate

cover.   We therefore request that FAA reconsider its position on this recommendation.

FAA also did not agree with our recommendation to issue written guidance that holds managers accountable for achieving nominal "time-to-certify" metrics. FAA stated that additional written guidance is not needed since it already established nominal time-to-certify metrics in the FY 2008 Air Traffic Organization and Service Level Strategic Mapping Plans; these plans were issued after we completed our audit fieldwork.

Although FAA stated it disagreed with our recommendation, it took actions that directly addressed it.   A non-concurring response normally indicates that the Agency neither agrees with the recommended action nor intends to address it.   In this instance, FAA's actions appear to address our concern, and we expected the Agency would concur with the recommendation and explain any proactive actions taken in its response.   While FAA did not choose this approach, its actions taken address the intent of the recommendation, we therefore consider it closed.

FAA's comments and our response are fully discussed on pages 22 through 25. FAA's full response is included in its entirety as the appendix to this report.   The specific actions required from FAA for each recommendation are discussed on page 25.

We appreciate the courtesies and cooperation of FAA representatives during this audit. If you have any questions concerning this report, please contact me at (202) 366-1427 or Daniel Raville, Program Director, at (202) 366-1405.

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cc: FAA Chief of Staff
        Anthony Williams, ABU 100
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FINDING: FAA MUST IMPROVE ITS FACILITY TRAINING PROGRAM TO SUCCESSFULLY ACHIEVE ITS PLANS FOR HIRING AND TRAINING 17,000 NEW CONTROLLERS THROUGH 2017

FAA is currently training more new controllers than it has in the past 15 years. The percentage of developmental controllers within the controller workforce has increased from about 15 percent in 2004 to about 25 percent in 2007. As a result, FAA is facing a fundamental transformation in the composition of its controller workforce that will require improvements in its facility training program. We found that FAA's facility training program continues to be extremely decentralized and the efficiency and quality of the training varies extensively from one location to another. We found similar problems in 2004.

FAA is taking actions at the national level to get this important program on track. For example, FAA increased the use of contractor training support from 53 facilities in 2004 to 190 facilities in 2007. FAA also is increasing the use of training simulators at towers. Many of FAA's other efforts are still in the early stages of implementation. To enhance its facility training program, FAA needs to take the following actions to ensure it can successfully hire and train 17,000 new controllers through 2017:

- Reflect the changing composition of the controller workforce in reports to its stakeholders.

- Establish realistic standards for how many developmental controllers' facilities can accommodate.

- Ensure the standards developed address individual facilities' training capacity.

- Continue to encourage veteran controllers to transfer to busier, higher-level facilities.

- Clarify responsibilities for oversight of the facility training program at the national level.

- Ensure there are no gaps in facility training contract support.

- Implement key initiatives designed in 2004 to improve facility training.

Finding

FAA Is Currently Training More New Controllers Than It Has In the Past 15 Years

The long expected surge in controller attrition has begun. Since 2005, 3,300 controllers have left the workforce.[5] The total rate of attrition was 23 percent higher than FAA projected; however, FAA has accelerated its hiring efforts to fill vacancies. Since 2005, FAA has hired 3,450 new controllers— 25 percent more than projected.

A key issue for addressing the surge in controller attrition is training new controllers to the CPC level at their assigned facility. Facility training for air traffic controllers is conducted in stages and consists of classroom, simulation, and OJT. Each stage represents a different control position or group of control positions, depending on whether the facility is en route or terminal. Facility training begins in the classroom, where developmental controllers learn facility-specific rules and procedures. These rules and procedures are often practiced in simulation training.

After developmental controllers complete classroom and simulation training for a stage, they begin OJT on the operational position. A CPC conducts this part of the training and oversees and instructs developmental controllers individually as they work the control position. Each control position has a minimum and maximum number of OJT hours allotted for training.

A developmental controller can be certified by his or her supervisor on a control position at any time between the minimum and maximum number of OJT hours. Developmental controllers achieve certification on each position as they move through the training stages. After developmental controllers have certified on all assigned positions within the control room area, they are commissioned as a CPC at that facility.

It is important to note that new controllers who have completed portions of training and certified on a position can independently staff that position; however, controllers are not qualified CPCs until they have certified on all positions within their assigned area. Therefore, using position-qualified controllers extensively to staff positions can lengthen the time required for them to become CPCs since they are not training on other new positions.

Training new controllers to the CPC level is important for two reasons: (1) only CPCs are qualified to control traffic at *all* positions of their assigned area and (2) only CPCs certified for at least 6 months (at their assigned locations) can become OJT instructors for other new controllers. Maintaining a sufficient

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[5] Attrition includes retirements, resignations, promotions to supervisory or non-controller positions, training failures, and deaths.

Finding

number of OJT instructors at all locations is a critical component of FAA's hiring and training plans.

As a result of increasing controller attrition, FAA is facing a fundamental transformation in the composition of its controller workforce that will require improvements to its facility training program. The overall percentage of developmental controllers in the controller workforce has grown substantially over the past 3 years. As shown in table 1, from April 2004 to December 2007, the overall size of the controller workforce remained relatively constant; however, during the same period, the number of controllers in training increased by 1,375, or 62 percent, while the total number of CPCs decreased by 1,302. As a result, FAA is now training more new controllers than it has in the past 15 years.

Table 1. Total Controller Workforce Composition

Date	CPCs	Controllers in Training	Total
April 2004	12,328	2,209	14,537
December 2007	11,026	3,584	14,610
Difference	(-1,302)	+1,375	+73

Source: OIG analysis of FAA data

FAA's Reports to Stakeholders Must Reflect the Changing Composition of the Controller Workforce

While the number of controllers in training has increased significantly since 2004, FAA's reports to its stakeholders do not reflect this change. This is because FAA does not differentiate between CPCs and controllers in training in its CWP ("in training" includes both developmental controllers and CPC-ITs[6]). FAA only reports the total number of controllers at each location. In our opinion, FAA should report the number of CPCs *and* the number of controllers in training separately for each location. Differentiating those figures by location could provide Congress and the Secretary with critical data on the current composition of the controller workforce and provide a benchmark for year-to-year comparisons.

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[6] CPCs in training (CPC-IT) are veteran controllers who transferred from another facility and are in training to learn the procedures and airspace of their new locations.

Finding

FAA Must Establish Realistic Standards for the Level of Developmental Controllers That Facilities Can Accommodate

In April 2004, developmental controllers made up about 15 percent of the national controller workforce. As of December 2007, that percentage had risen to about 25 percent. FAA expects this percentage to increase to as much as 30 percent. FAA estimates that the controller workforce at each facility can comprise up to 35 percent in developmental controllers and still maintain operations and accomplish training. This estimate assumes annual attrition of about 10 percent, a 2- to 3-year time period for developmental controllers to become fully certified, and a steady forecasted growth in air traffic. FAA also estimates that if facilities exceed that amount, their training times would significantly increase because the number of developmental controllers would surpass available training capacity.

We found that many facilities already meet or exceed FAA's acceptable percentage of developmental controllers. In April 2004, 22 facilities nationwide were above the 35-percent level. By December 2007, that number had increased to 70 facilities—a 218-percent increase in 3 years. For example, according to FAA's national training database, as of December 2007:

- Teterboro Tower had 12 CPCs and 13 developmental controllers (52 percent developmental).
- Oakland Center had 163 CPCs and 101 developmental controllers (38 percent developmental).
- Las Vegas TRACON had 22 CPCs and 22 developmental controllers (50 percent developmental).

Figure 1. Picture of an Air Traffic Controller on Position at a Radar Scope

Finding

Most facility managers, training officers, and union officials we spoke to disagreed with FAA's estimate of an acceptable level of developmental controllers. They stated that in order to achieve effective controller training while maintaining daily operations, the *maximum* percentage of developmental controllers should be limited to between 20 and 25 percent of a facility's total controller workforce.

The difference between FAA's estimate and the estimates given to us by veteran controllers and managers is disconcerting, especially since so many facilities already exceed the FAA limit. Further, FAA's 35-percent estimate was originally intended to determine how many developmental controllers could be processed through the FAA Academy, not how many new controllers could be trained at individual facilities; however, it appears that FAA is now using that percentage as a benchmark for all facilities.

FAA Headquarters officials we spoke with agreed that "no one size fits all" when determining how many trainees a facility can accommodate. We agree, given the various sizes and complexities of FAA's more than 300 facilities. Therefore, FAA should convene a working group that includes facility managers, training managers, and union representatives to identify a target percentage or percentage range of developmental controllers that facilities (both en route and terminal) can realistically accommodate while maintaining daily operations.

FAA Must Ensure the Standards Developed Address Individual Facilities' Training Capacity

In January 2006, the ATO centralized the entire controller hiring process. The Aviation Careers Division in Oklahoma City now coordinates all controller hiring, including processing and evaluating applications, tracking medical and security clearances, and assigning individual candidates to specific air traffic control facilities. We found that centralized hiring improves process efficiency by eliminating duplication of effort.

FAA's hiring process is now outpacing the capability of many air traffic facilities to efficiently process and train newly hired controllers assigned to their location. During our review, several facility managers stated that developmental controllers assigned to their facilities had to wait for extended periods of time before commencing the training program because the number of developmental controllers at their locations exceeded the facility training capacity.

Finding

For example:

- The Atlanta En Route Center received 76 developmental controllers in FY 2006. In FY 2005, however, the facility had installed the User Request Evaluation Tool (new controller technology for separating aircraft). Because the facility was required to train its existing controllers on the new technology, it had fewer simulators available for developmental controllers' OJT. As a result, the facility was unable to train most developmental controllers from July 2005 to April 2006. This resulted in developmental controllers waiting up to 1 year before they could begin or recommence their facility training.

- As of December 2007, the Miami Center had 98 developmental controllers (or 34 percent of the facility's controller workforce). Facility management and the local NATCA representative both agreed that the facility lacked the physical capacity to effectively train such a large population of developmental controllers, even when they were evenly distributed throughout the various stages of facility training. Consequently, developmental controllers' facility training was delayed by as much as 9 months.

FAA managers identified several key factors that affect a facility's ability to accept and train new controllers. For example, managers told us that they must have a sufficient number of OJT instructors to accommodate developmental controllers. This is because a significant part of training for a developmental controller involves working live traffic with an OJT instructor. Each control position has a minimum and maximum number of hours allotted for OJT, which is often the longest and most difficult part of facility training.

Managers also identified limitations to physical training capacity at facilities that can impact the number of new controllers a facility can realistically accommodate. These include the availability of (1) classroom space, (2) simulators, and (3) contract instructors to conduct the classroom and simulator training.

Finally, managers told us that the need to instruct current CPCs on new equipment or new procedures takes precedence over developmental controller training and therefore limits the availability of classroom and simulator availability for new controllers (as was the case at the Atlanta En Route Center).

Although FAA's centralized hiring process greatly improved the Agency's ability to hire new controllers, FAA needs to ensure that it does not overload facilities with developmental controllers. Therefore, FAA needs to take steps to mitigate these factors before determining where and when to place new hires.

Finding

FAA Must Continue To Encourage Veteran Controllers To Transfer to Busier, Higher-Level Facilities

We found that fewer veteran controllers are transferring from lower-level, less complicated facilities to higher-level, busier locations. From April 2004 to December 2007, the number of transferring veteran controllers (CPC-ITs) dropped by nearly 34 percent (from 1,217 in 2004 to 808 in 2007). With the surge of developmental controllers in the workforce, FAA cannot afford to lose the valuable experience that veteran controllers from lower-level facilities could provide at some of the busiest facilities in the Nation, even if just for several years.

According to FAA facility managers, fewer veteran controllers are transferring due to new work rules that significantly changed the controller pay system. These rules were enacted by FAA after it declared an impasse in negotiations with NATCA. FAA then implemented a new contract and work rules on September 5, 2006, under authority of its personnel reform legislation.

Before the imposed contract, CPCs assigned to a specific facility had their existing pay levels "grandfathered." That is, their base salary remained unaffected as long as they remained at their assigned facility. Under the new pay rules, however, once controllers transfer to a new facility, their pay would be adjusted to the new pay bands enacted in September 2006.

In many cases, this could significantly decrease CPCs' base salaries, which may discourage them from transferring to higher-level, busier facilities. As shown in table 2, a CPC transferring from a Level 9 facility (such as Baltimore-Washington International) to a Level 12 facility (such as Chicago O'Hare), which is much more complex, could actually lose about $7,000 in base pay (from $113,295 to $106,200). FAA's personnel reform allows the Agency to waive the salary adjustments if deemed appropriate on a case-by-case basis.

Finding

Table 2. Comparison of Controller Pay Bands

Pay Bands				
Old Pay System (ATC Pay System)		ATC Level	New Pay System (ATSPP) (Includes 2007 Pay Band Increase)	
Minimum	Maximum		Minimum	Maximum
$44,800	$62,720	3	N/A	N/A
$47,822	$66,951	4	$37,800	$50,925
$54,278	$75,989	5	$37,800	$50,925
$59,978	$83,969	6	$45,475	$58,600
$66,277	$92,788	7	$46,100	$63,725
$73,236	$102,530	8	$53,775	$71,400
$80,925	$113,295	9	$56,100	$79,325
$93,063	$130,288	10	$63,775	$87,000
$97,947	$137,126	11	$68,500	$98,525
$102,846	$143,984	12	$76,175	$106,200

Note: New pay system effective as of January 7, 2007
Source: FAA

FAA is aware of this concern and announced a new program in January 2008 that offers a retention incentive bonus to veteran controllers at key facilities if they remain with the Agency after becoming eligible to retire. In our opinion, those actions are a step in the right direction—the key now will be follow through. FAA should report the preliminary results of this incentive in its next update of the CWP and take steps to ensure its busiest facilities benefit from veteran controllers' valuable experience.

As a result of the decrease in transferring veteran controllers, we found that many facilities have had to redesign their training programs, particularly so at large terminal facilities. Although en route facilities are generally the largest air traffic control facilities, their training programs have always been designed to include the training needs of even the least experienced developmental controllers.

This is not the case at large terminal facilities such as the Potomac, Atlanta, or Chicago TRACONs. In the past, large terminal facilities relied primarily on experienced CPCs transferring from lower-level, less complex facilities to fill their vacancies. This is no longer the case, however, as developmental controllers are now increasingly being assigned *directly* to higher-level terminal facilities.

The number and type of facility training stages are different for en route and terminal facilities. Even within the terminal area, developmental controller training differs between towers and TRACONs. Generally, at towers, facility training incorporates Stage II through Stage V, while TRACON facility training incorporates Stage II, then Stages VI and VII. En route facility training consists of Stages II through IV. Figure 2 below shows the difference between the training processes and the various stages.

Finding

Figure 2. En Route Versus Terminal Training Processes

Terminal Facility Training					
Stage II Flight Data	Stage III Clearance Delivery	Stage IV Ground Control	Stage V Local Control/ Cab Coordina- tor	Stage VI Non-Radar Ter- minal Control	Stage VII Radar Control
1. Classroom 2. OJT 3. Certification	1. Classroom 2. OJT 3. Certification	1. Classroom 2. OJT 3. Certification	1. Classroom 2. OJT 3. Certification	*(if applicable)* 1. Classroom 2. Simulation 3. OJT 4. Certification	*(if applicable)* 1. Classroom 2. Simulation 3. OJT 4. Certification

Note: The order of Stages III through VII may be changed at the discretion of the facility manager.

Average training time to CPC: *High Level Terminal (ATC Level 9-12) = 36 months*
Mid Level Terminal (ATC Level 6-8) = 24 months
Low Level Terminal (ATC Level 4-5) = 8 months

En Route Facility Training		
Stage II Assistant Controller (Flight Data)	Stage III Non-Radar and Radar Associate (RA)	Stage IV Radar Controller
1. Classroom 2. OJT 3. Certification	1. Classroom 2. OJT 3. Simulation 3. Certification *Note: Certification on two (2) positions qualifies a developmental to work independently and to proceed to Stage IV training.*	1. Classroom 2. OJT 3. Simulation 3. Certification *Note: Certification on two (2) positions qualifies a developmental to work independently.* *Note: Developmentals continue training on remaining RA and radar positions until they reach Certified Professional Controller (CPC).* *Note: Average training time to CPC equals 36-60 months.*

Source: FAA

Historically, CPCs transferred to increasingly complex terminal facilities at higher pay scales as part of their career progression. Although CPC-ITs had to certify on each position at the new facility, they normally became certified faster than inexperienced, developmental controllers because of their previous experience in controlling air traffic. Until recently, prospective terminal controllers were seldom assigned to large TRACONs and towers, without first learning to control air traffic at slower-paced, less complex terminal facilities.

We found that where facilities are forced to redesign their training programs to accommodate new hires, it takes longer for controllers to certify as CPCs.

Finding

For example:

- At the Potomac TRACON, managers historically received very few inexperienced, newly hired developmental controllers. According to those managers, most new controllers transferred to the facility from lower-level facilities and had previous experience controlling traffic. Since most of the TRACON's current new controllers are inexperienced, developmental controllers, the TRACON's management is considering adding a 6- to 7-week class to review basic air traffic fundamentals. The facility manager also told us that existing minimum and maximum training hours assigned to each training stage are determined at her "best guess."

- At the Chicago TRACON, managers had to extend their facility training program by 10 weeks to accommodate the additional training needs of inexperienced, developmental controllers. This facility historically received more experienced controllers.

- At the Atlanta TRACON, managers stated that, prior to 2007, they had never trained any inexperienced, developmental controllers. As a result, managers convened a working group to redesign the facility's training program. The updated facility training order, which was released in August 2007, established new classroom and OJT training hours for developmental controllers with no prior air traffic control experience.

Some stakeholders have expressed concerns that many developmental controllers are now being directly placed at busy, higher-level facilities with no prior experience. We are conducting other related audits to review this issue. At the request of Chairman Costello of the House Subcommittee on Aviation, we are reviewing controller training failures (developmental and transferring controllers who fail training either at the FAA Academy or at their assigned facility). As part of that review, we are examining possible root causes of training failures, which can include the facility level where new controllers are placed.

In addition, at the request of Senator Durbin of Illinois, we are reviewing factors, training-related or otherwise, that could affect controller fatigue. The National Transportation Safety Board identified this issue after the crash of Comair flight 5191 in 2006. We are focusing our current efforts at Chicago O'Hare Tower, Chicago TRACON, and Chicago Center but may review other locations and FAA's national efforts based on the results of our work at Chicago.

Finding

FAA Needs To Clarify Responsibilities for Oversight of the Facility Training Program at the National Level

In our June 2004 report, we concluded that facility training was decentralized and FAA provided minimal management oversight of facility training at the national level. During our current review, we found that significant confusion persists. For example:

- Facility managers were still confused as to what office is ultimately responsible for facility training. Air traffic facility managers we interviewed across the country were unable to tell us who or what office at FAA Headquarters is in charge of facility training. They consistently reported that no one manages facility training at the national level.

- The ATO's Director of Technical Training and Development stated that while he was in charge of most aspects of training for controllers, he was not responsible for the facility training program. He stated that the responsibility for facility training rested with the Vice Presidents for Terminal and En Route facilities.

- FAA's National Training Order 3120.4L indicates that the Controller Training Division has overall responsibility for facility training. The order states the following: "As directed by the Chief Operating Officer (COO), the Vice President, Acquisition and Business Services, is responsible for Air Traffic technical training. The Manager, Controller Training Division, is delegated authority in all matters related to the training programs and policies described in this order." However, there is no "Controller Training Division" listed in the Agency's organization chart under FAA's Acquisition and Business Services or under FAA's Air Traffic Organization.

FAA Headquarters officials stated that after FAA created the ATO, it assigned national oversight responsibility for facility training to the ATO's Vice President for Terminal Services and Vice President for En Route and Oceanic Services. In addition, the ATO's Vice President for Acquisition and Business Services oversees new controller hiring and the FAA Academy training program, and the Senior Vice President for Finance oversees the development of the CWP. All four offices play key roles in the controller training process.

We found that these overlapping responsibilities are causing the confusion at the facility level. FAA needs to communicate who has the authority and responsibility for oversight and direction of the facility training program at the national level and include this information in the next update of FAA's National Training Order 3120.4L, which is due this summer.

Finding

FAA Must Ensure There Are No Gaps in Training Support as It Pursues a New Training Contract Initiative

FAA is pursuing a new controller training initiative: Air Traffic Control Optimum Training Solutions (ATCOTS). According to FAA officials, the Agency initially planned to contract out as much as 80 percent of controller training. The scope of the contract was to include initial recruitment and hiring, FAA Academy training, and major portions of controller facility training; however, FAA has since altered both the proposed contract scope and the proposed timeline.

FAA now plans to consolidate two existing contracts—Washington Consulting Group (WCG) and Oklahoma University (OU)—to provide performance-based controller training support. The OU contract currently provides instructors and administrative support to the FAA Academy, while the WCG contract provides similar support services to air traffic control facilities. On August 1, 2007, FAA placed the following "contract opportunity statement" on its website:

> As a result of the analysis and the examination of potential alternatives, the originally envisioned wide-ranging contracting effort does not represent the best solution. Rather, air traffic controller training will be improved by consolidating the two existing contracts (Washington Consulting Group contract and Oklahoma University contract) into one performance-based contract. There will be no change to the current FAA training infrastructure.

> The FAA is in the process of restructuring ATCOTS so that the chosen service provider will be required to continually improve performance in order to keep abreast of changing FAA requirements. To this end, the FAA is seeking comments on the draft PWS (Performance Work Statement), potential performance metrics, pricing structures, and proposed acquisition timeline.

According to air traffic control managers, the current WCG contract is an effective means of providing classroom and simulation training to developmental controllers because contract trainers are usually experienced, retired air traffic controllers from that location. In addition, using contract trainers to provide the classroom portion of OJT frees up controllers to provide OJT on live air traffic. Table 3 below shows how FAA has significantly expanded the WCG contract support for facility training over the past 3 years.

Finding

Table 3. WCG Contract Support, 2004 to 2007

Updates	Number of Facilities Supported	Number of WCG Employees
September 30, 2004	53	486
November 7, 2007	190	825

Source: FAA

FAA plans to award a contract for ATCOTS to a single vendor by June 2008. That timeframe, however, is already more than 1 year behind the original target date. If the date of award slips again, there could be serious consequences to the facility training program because the WCG contract expires in September 2008.

According to facility managers, the training support provided by the WCG contract is a critical component for managing their training programs. In fact, many facility managers stated that training at their locations would cease altogether if the contract ended without support replacement. In our opinion, FAA needs to develop a contingency plan for actions needed to ensure continuous training support during the change from the current WCG contract to any follow-on contract.

FAA Needs To Implement Key Initiatives Designed in 2004 To Improve Facility Training

FAA has made limited progress toward key initiatives relating to facility training that it first proposed in its December 2004 Controller Workforce Plan. We found that while the annual CWP presented a comprehensive list of initiatives for training new controllers, each subsequent update provided fewer details concerning the status of the training initiatives. Specifically, FAA has not (1) developed a written policy governing the use of developmental controllers for operational purposes, (2) consistently analyzed data in the national training database to identify trends (both in en route and terminal) and communicated best practices, and (3) conducted a comprehensive evaluation of facility training. All of these were key training initiatives proposed in the 2004 CWP.

To its credit, however, FAA has successfully implemented an important initiative—increasing the use of training simulators. In addition, FAA has begun disseminating facility best practices through national working groups and monthly training teleconferences.

Finding

FAA Must Mandate That Controller Training Be Prioritized

Once developmental controllers have certified on a sector, they can independently work that sector for the facility; however, developmental controllers do not become CPCs until they certify on all sectors within their assigned areas, usually between five and seven sectors. Training new controllers to the CPC level is important for two reasons: (1) only CPCs are qualified to control traffic at *all* positions of their assigned area and (2) only CPCs certified for at least 6 months (at their assigned locations) can become OJT instructors for other new controllers.

It is important to note that new controllers who have completed portions of training and have been certified on a position can independently staff that position to alleviate short-term staffing shortages. Controllers are not qualified CPCs, however, until they have certified on all positions within their assigned area. Therefore, using position-qualified controllers extensively to staff positions can lengthen the time required to become CPCs since they are not training on other new positions.

In its 2004 CWP, FAA stated that it would "develop, implement and enforce a policy that assigns facility training as a priority second only to operations." This was to be accomplished through the following actions:

- Placing developmental controllers only at facilities that had available training capacity.

- Requiring facility managers to establish OJT as a facility priority and only allow suspension of training for critical operational necessities.

- Establishing nominal "time-to-certify" metrics for en route and terminal training programs and hold managers accountable for achieving those targets.

We found that FAA never issued a policy to implement those requirements. In fact, at almost every facility we visited, managers continued to use developmental controllers in some sort of operational capacity for controlling traffic. Some facilities used developmental controllers repeatedly to supplement staffing for operations.

Additionally, FAA did not establish a policy for holding managers accountable for achieving nominal "time-to-certify" metrics for en route and terminal training programs. These are both critical initiatives, and FAA must follow through with its planned actions and ensure they are implemented.

Finding

FAA Must Use Its National OJT Training Database To Identify Trends and Establish Facility Training Best Practices

In June 2004, we recommended that FAA develop and implement a national training database to collect data from field facilities, analyze the data at the national level, and determine if there were any trends (positive or negative) that required intervention. FAA subsequently included the national OJT training database as an initiative in its December 2004 CWP. According to FAA, implementing the initiative would include recommending best practices to facility managers based on a "snapshot" of the database by March 2006 and then applying the best practices by May 2006.

In the 2007 update of the CWP, FAA stated that it had "fully implemented the on-the-job training database for both en route and terminal training." We found, however, that while facilities were entering their training data on a monthly basis, FAA Headquarters was not reviewing the data for accuracy. During this review, we tested the accuracy of the underlying data. We found that while data from the en route facilities appeared to be fairly accurate, data from terminal facilities were not. Examples of obvious inaccuracies include the following:

- At four terminal facilities, the database indicated that the average times for developmental controllers to certify and become CPCs at those locations *were actually negative numbers*.

- At one terminal facility, the database showed that one developmental controller had certified as a CPC nearly 6 months *before* he arrived at the facility.

- At a Level 6 air traffic control tower (one of the least complicated types of facility operated by FAA), the database showed that two developmental controllers each took *7.94 years* to become CPCs.

We also found that FAA Headquarters did not consistently use the database to identify positive or negative trends. For example, at the end of our audit, we observed that managers from the en route division were using the data to identify anomalies among various en route facilities' training efforts; however, managers within the terminal division were not. This could be related to the accuracy of the data entered by terminal managers.

FAA must begin using the national OJT database to identify trends at individual facilities that could indicate training problems and take the corrective actions needed. Until FAA is assured that the data in the national training database are accurate in both en route and terminal divisions, it cannot use the data to identify anomalies or best practices from the national statistics. FAA must take the actions necessary to ensure that the entered data are accurate.

Finding

At the end of our audit, we observed FAA Headquarters managers discussing best practices at the national level and communicating those initiatives to facilities through national working groups. In addition, training managers from both terminal and en route facilities were participating in monthly training teleconferences to discuss training difficulties and other suggestions.

During our facility visits, we learned of several unique training methods devised by facility managers. For example:

- At the Atlanta TRACON, all new developmental controllers begin facility training on the least complex airspace controlled by the facility. Once the developmental controller has gained both experience and confidence in his or her abilities, the manager moves the new controller to more complex airspace. Though developmental controllers have only recently been assigned to the TRACON, training records indicate that they seem to be completing the certification process much more quickly than those first placed in more complex areas.

- At the Las Vegas TRACON, 40 percent of the OJT instructors have less than 5 years of training experience. As a result, managers selectively use less experienced instructors on less complicated airspace and more closely oversee their development as instructors. The more experienced instructors are then available to teach the more complicated areas.

- At the Las Vegas TRACON, managers alternate developmental controllers between training and operations to ensure their progression in facility training while maintaining sufficient staffing levels to control traffic. Once a developmental controller certifies on a position, he or she then spends 4 hours out of each shift staffing that position and another 4 hours training on new positions. As the developmental controllers certify on other positions, they also are rotated through additional control positions to stay current on the airspace and procedures of each position.

- At the Jacksonville En Route Center, the training manager rotates developmental controllers as remote pilot operators in simulator problems. Remote pilot operators are often contract employees who assist controller training by acting as "pilots" in a simulator setting. This practice initially helps new personnel to become familiar with the facility's airspace, basic air traffic control, and communications procedures. As developmental controllers proceed through training, the remote pilot operations reinforce their newly learned skills.

Finding

- At the Oakland En Route Center, officials have proposed that FAA directly hire contract remote pilot operators as air traffic controllers. According to managers at Oakland, employees working as remote pilot operators go through a substantial amount of training that includes learning air traffic control and communications skills, as well as knowledge of facility airspace and procedures. The managers noted that because of the training required to become a high performing remote pilot operator, they often demonstrate the skills needed to become an air traffic controller. They also suggested that recent graduates of colleges and universities affiliated with FAA's Collegiate Training Initiative Program could be productively employed as remote pilot operators while awaiting FAA appointments or undergoing medical and security clearance processing.

We shared some of these initiatives with other en route and terminal facility managers during our facility visits. In numerous instances, facility managers expressed interest and told us they intended to try some of the initiatives within their own training programs.

In our opinion, these are the types of best practices that FAA should gather at the national level and disseminate to field facilities, and FAA Headquarters managers now appear to be undertaking those actions. FAA should encourage such efforts and identify other methods for effectively communicating best practices.

In past audits, we found similar needs for communicating best practices. For example, in May 2007, we reported[7] on runway safety efforts at four airports that had experienced a surge in runway incursions in 2005 and 2006—Boston, Chicago, Philadelphia, and Los Angeles. We found that airport operators at all four locations responded to the rise in runway incursions by improving airport lighting, adding better signage, and improving runway and taxiway markings.

While the implementation of these actions varied among the airports, they all had the potential to reduce runway incursions system-wide. Other than informal networking, however, there were no formal means for the various users to share actions that had reduced or prevented runway incursions at their locations.

Our recommendations included developing an automated means, such as establishing an intranet site through the Regional Runway Safety Offices, to share best practices for reducing runway incursions with all users of the National Airspace System. In response, FAA implemented a best practices website for runway safety in December 2007. FAA should consider implementing a similar website for its facility training program.

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[7] OIG Report Number AV-2007-050, "Progress Has Been Made in Reducing Runway Incursions, but Recent Incidents Underscore the Need for Further Proactive Efforts," May 24, 2007.

Finding

Figure 3. Picture of a Tower Station

Source: FAA

FAA Must Comprehensively Evaluate the Facility Training Program

In the December 2004 Controller Workforce Plan, FAA stated that it would

> conduct a thorough review of facility training to ensure it begins where the Academy ends. This review will take into consideration other efficiency gains identified in this plan and will result in facility training programs tailored to meet the needs of developmental controllers of the future. This effort will contribute to the Agency's goal to reduce the time to CPC.

FAA stated that it planned to adjust the facility training program based on this evaluation by December 2006. FAA repeated the same statement in the 2006 update of the CWP but completely eliminated any mention of this initiative in its 2007 update.

We found that FAA never conducted the evaluation or made adjustments to the facility training program that were planned for completion by December 2006. Consequently, all facility training changes to date were made by facility staff without national guidance or oversight and were based solely on individual facility needs.

To eliminate duplicative efforts in redesigning training programs at each facility, FAA needs to conduct a comprehensive review of facility training as stated in the 2004 CWP. This will ensure that efficiencies are realized throughout the redesign process and will allow larger facilities to modify their programs to accept new hires for the first time.

Finding

FAA Must Ensure That the Planned Increased Use of Simulators Remains On Track

FAA's 2004 CWP included initiatives for increasing the use of training simulators at towers and en route facilities (see figure 4). To its credit, FAA has successfully implemented this important initiative and must ensure that it remains on track.

FAA recently installed simulators at four towers—Chicago O'Hare, Miami, Ontario, and Phoenix. The simulators can be programmed with scenarios and occurrences exclusive to those airports, using actual aircraft with their respective call signs. By using simulators, controllers gain inherent knowledge of a particular airport, its airspace, and application of air traffic procedures for that specific location. The simulators also have a function that writes software for additional airports; this allows controllers from surrounding facilities to utilize the simulators.

Figure 4. Picture of Controllers Using a Tower Cab Simulator

Source: FAA

Results thus far indicate that simulators at tower facilities are valuable training tools, and managers of facilities with simulators are pleased with the results. NASA Ames Research Center evaluated this training, and its results confirm the value of simulators (see table 4 below). For example, NASA's evaluation found that it took 60 percent fewer days for developmental controllers to complete ground control training at the Miami tower. At Chicago, NASA reported that it took developmental controllers 42 percent fewer days to complete ground control training.

Finding

Table 4. Results of NASA Ames Air Traffic Simulator Evaluation

Facility - Position	Percent Fewer Days To Complete Training	Percent Fewer Hours of OJT Training
Ontario Tower - Ground	31 percent	59 percent
O'Hare Tower - Ground	42 percent	38 percent
Miami Tower - Ground	60 percent	21 percent

Source: FAA 2007 Controller Workforce Plan Update

FAA plans to install 12 additional tower simulators this year (6 at large airports and 6 at the FAA Academy) and 12 next year (at other airports).

En route facilities are using dynamic simulation labs to support their facility training programs. A more advanced program—the En Route Training Simulation System—will provide simulation capabilities until the En Route Automation Modernization is fully functional beginning in FY 2008. This program will be used at the Salt Lake, Albuquerque, Miami, and Washington en route centers; managers are optimistic that it will reduce the number of students backlogged in the training program at those four facilities. These simulators were not in use during our site visits.

Finding

RECOMMENDATIONS

We recommend that FAA:

1. Convene a working group that includes facility managers, training managers, and union representatives to identify a target percentage or percentage range of developmental controllers that facilities (by facility type—both en route and terminal) can realistically accommodate while accomplishing facility training and daily operations.

2. Include in the next update to the Controller Workforce Plan the actual number of CPCs, CPC-ITs, and developmental controllers by location to provide stakeholders with an accurate picture of the current composition of the controller workforce.

3. Establish a method for placing newly hired controllers at facilities that considers the availability of OJT instructors, classroom space, and simulators as well as training requirements of existing CPC staff.

4. Include the initial results of the Agency's new controller retention bonuses in the 2009 update of the Controller Workforce Plan.

5. Designate authority and responsibility for oversight and direction of the facility training program at the national level in the next update of FAA's National Training Order 3120.4L, which is due this summer.

6. Develop a contingency plan for actions needed to ensure continuous training support during any change from the current WCG contract to any follow-on contract.

7. Issue written guidance requiring facility managers to establish OJT as a facility priority and only allow suspension of training for critical operational necessities.

8. Issue written guidance that holds managers accountable for achieving nominal "time-to-certify" metrics for en route and terminal training programs.

9. Establish procedures for ensuring the accuracy of data input into the national training database and use the database to identify trends (negative and positive) at individual facilities (en route and terminal) that could indicate training problems and take corrective actions as needed.

10. Establish additional methods for disseminating successful training methods used at individual facilities that could be applied at other locations (en route and terminal), such as an intranet website for facility training.

11. Conduct a comprehensive review of facility training as stated in the 2004 Controller Workforce Plan.

12. Ensure that the installation of additional simulators at terminal and en route facilities remains on schedule to capitalize on the significant success this type of training has demonstrated thus far.

AGENCY COMMENTS AND OFFICE OF INSPECTOR GENERAL RESPONSE

We provided FAA with our draft report on March 31, 2008, and requested its comments within 15 calendar days. We received FAA's comments on May 19, 2008. FAA fully concurred with 8 of our 12 recommendations, partially concurred with 2, and non-concurred with 2.

Full Concurrence

FAA concurred with the following recommendations and provided milestones for implementing the planned actions:

- Convene a working group to identify target percentages of developmental controllers that facilities can accommodate (recommendation 1).

- Develop a contingency plan for actions needed for continuing training support (recommendation 6).

- Establish additional methods for disseminating successful training methods (recommendation 10).

- Conduct a comprehensive review of the facility training program (recommendation 11).

- Ensure that installation of simulators remains on track (recommendation 12).

We consider these recommendations resolved and open pending completion of the planned actions.

FAA also concurred with the following recommendations but did not provide milestones for implementing the planned actions:

- Establish a method for placing newly hired controllers at facilities that considers available training resources (recommendation 3).

- Designate authority and responsibility for oversight of the facility training program (recommendation 5).

- Establish procedures for ensuring the accuracy of data input to the national training database (recommendation 9).

We request that FAA provide implementation milestones, and upon receipt we will consider these recommendations resolved and open pending completion of the planned actions.

Partial Concurrence

FAA partially concurred with the following recommendations:

- Include results of the Agency's new controller retention bonuses in the next update to the Controller Workforce Plan (recommendation 4).

   FAA stated that to imply that only retention bonuses have an effect on staffing levels would be misleading. Further, FAA stated that it does not believe that the Controller Workforce Plan is the appropriate medium to provide such information.

   Although we never implied that retention bonuses were the only factor that can affect staffing levels, we believe FAA should track the impact of this incentive to ensure the bonuses are effective in retaining veteran controllers at the facilities where they are most needed. On condition that FAA will provide the results of the retention bonuses upon request from our office or other stakeholders, we will consider this recommendation closed.

- Issue written guidance requiring facility managers to establish OJT as a priority and only allow suspension of training for critical operational necessities (recommendation 7).

   Our recommendation reflects FAA's 2004 Controller Workforce Plan, which states that the Agency will "develop, implement, and enforce a policy that assigns facility training as a priority second only to operations." In its response, FAA stated that the recommended guidance will be coordinated and issued by the En Route and Oceanic Services and the Terminal service units.

We question FAA's *partial* concurrence, since its response implies it plans to issue the guidance as we recommended. We request that FAA clarify whether it actually plans to issue the recommended guidance as stated and inform our office of the planned issuance date. Upon receipt of that information, we will consider this recommendation resolved.

Non-Concurrence

FAA did not agree with the following recommendations:

- Include the actual number of CPCs, CPC-ITs, and developmental controllers by location in its next annual update to the Controller Workforce Plan (recommendation 2).

  FAA stated that it does not believe that an annual snapshot of this information accurately captures the changing controller workforce and that the information would be of little use to readers of its Controller Workforce Plan.

  We strongly believe that periodic comparisons of the of the controller workforce provide critical data points for the Congress, the Secretary, and other stakeholders who must ensure FAA has enough certified controllers to safely operate the National Airspace System. This is particularly important given the length of time required for new controllers to become CPCs. Training new controllers to the CPC level is critical because only CPCs are qualified to control traffic at all positions of their assigned area, and only CPCs can become OJT instructors for other new controllers. Having enough OJT instructors at all locations is a vital part of FAA's plan to hire and train 17,000 new controllers through 2017.

  Since FAA does not believe a recurring update to its annual Controller Workforce Plan accurately portrays the changing dynamics of the controller workforce, then it should provide that information on a more frequent periodic basis (e.g., quarterly) to FAA's congressional committees of jurisdiction and our office under separate cover. We therefore request that FAA reconsider its position on this recommendation.

- Issue written guidance that holds managers accountable for achieving nominal "time-to-certify" metrics (recommendation 8).

  FAA stated that additional written guidance is not needed since it already established nominal time-to-certify metrics in the FY 2008 Air Traffic Organization and Service Level Strategic Mapping Plans, which were issued after we completed our audit fieldwork.

Although FAA stated it disagreed with our recommendation, it took actions that directly addressed it. A non-concurring response normally indicates that the Agency neither agrees with the recommendation nor intends to address it. In this instance, FAA's actions appear to address our concern, and we expected the Agency would concur with the recommendation and explain any proactive actions taken in its response. While FAA did not choose this approach, its actions taken address the intent of our recommendation; we therefore consider the recommendation closed.

FAA General Comments

FAA included two general comments in its response:

- First, FAA states that using 2004 data as a benchmark year for comparing the composition of the controller workforce to later years is misleading because there was an exceptionally small number of trainees within the workforce in 2004. We chose 2004 as a benchmark for comparison purposes based on two factors: (1) 2004 was the last year we audited this program; therefore, the base year created a natural benchmark for *all* our comparisons; (2) 2004 was the year FAA first published its plans for addressing the expected surge in controller retirements (the Controller Workforce Plan).

- Second, in regards to the new pay rules which could significantly decrease CPCs' base salaries when transferring to higher-level, busier facilities, FAA stated our report ignored the fact that the Agency preserved the ability to use tools to incentify [*sic*] transferring controllers as necessary (Article 108). FAA's statement is incorrect. Our report discussed in detail FAA's planned incentive bonuses and recommended that FAA report the effectiveness of those efforts. We would also direct FAA to page 7 of our report, the last sentence of the fourth paragraph, in which we state, "FAA's personnel reform allows the Agency to waive the salary adjustments if deemed appropriate on a case-by-case basis."

ACTIONS REQUIRED

For recommendations 1, 6, 8, 10, 11, and 12, no further information is required. In accordance with Department of Transportation 8000.1C, we request that FAA provide us with the following information within 15 calendar days. For recommendations 3, 5, and 9, please provide us with the implementation dates of the planned actions. For recommendation 4, please provide us with the initial results of the controller retention bonuses to date. For recommendation 7, please clarify whether the Agency plans to issue the recommended guidance as stated and, if so, inform our office of the planned issuance date. We request that FAA reconsider its position regarding recommendation 2.

EXHIBIT A. SCOPE AND METHODOLOGY

We conducted this performance audit in accordance with generally accepted Government Auditing Standards prescribed by the Comptroller General of the United States. As required by those standards, we obtained evidence that we believe provides a reasonable basis for our findings and conclusions based on our audit objectives. We conducted the audit between June 2007 and March 2008 using the following methodology.

During this audit, we visited FAA Headquarters, the FAA Training Academy, the National Air Traffic Controllers Association Headquarters, 6 en route facilities, and 14 terminal facilities. We reviewed and analyzed FAA's December 2004 Controller Workforce Plan and its associated FY 2006 and FY 2007 updates. Members of the audit team also attended an FAA conference concerning the proposed ATCOTS and planned milestones.

To evaluate the controller facility training program at the national level, we interviewed several FAA Headquarters officials. We also reviewed updated facility staffing levels and ranges, discussed the status of the national training database with FAA Headquarters officials and facility managers, evaluated Controller Workforce Plan initiative timelines and discussed the proposed ATCOTS. During site visits, we reviewed the status of facility training programs and average training times and evaluated facility-specific best practices. We also asked facility managers if they shared effective best practices with other facility managers.

To determine the status of key 2004 Controller Workforce Plan initiatives, we conducted interviews with managers at all levels of the Agency. We were specifically interested in determining if FAA had developed a written policy mandating that developmental controller training be prioritized over operational staffing. We also determined the status of the national training database, the national evaluation and redesign of the facility training program, and facility training simulators.

To determine national controller staffing levels, we analyzed FAA's national staffing database. We then compared the data with staffing ranges in the 2007 Controller Workforce Plan update to determine if FAA is accurately presenting the status of facility staffing. We also analyzed the percentage of trainee controllers in the workforce and determined which facilities had a higher percentage of trainees than FAA recommends. We also compared a staffing "snapshot" of two periods to determine if the composition of the workforce has changed.

EXHIBIT B. FACILITIES VISITED OR CONTACTED

En Route Centers

- Atlanta Center
- Chicago Center
- Jacksonville Center
- Miami Center
- Oakland Center
- Washington Center

Terminal Radar Approach Control Facilities (TRACON)

- Atlanta TRACON
- Chicago TRACON
- Las Vegas TRACON
- Potomac TRACON

Air Traffic Control Towers (ATCT)

- Atlanta ATCT
- Chicago Midway ATCT
- Chicago O'Hare ATCT
- Dulles ATCT
- Jacksonville ATCT
- Las Vegas ATCT
- Manassas ATCT
- Miami ATCT
- Reagan National ATCT
- Palwaukee ATCT

FAA Headquarters, Washington, District of Columbia

FAA Training Academy, Oklahoma City, Oklahoma

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Exhibit C. Major Contributors to This Report

APPENDIX. AGENCY COMMENTS

Federal Aviation Administration

Memorandum

Date: May 19, 2008

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

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

Prepared by: Anthony Williams, x79000

Subject: OIG Draft Report: Air Traffic Controller Facility Training Program Federal Aviation Administration

Thank you for providing us the opportunity to review and comment on your draft report entitled: "Air Traffic Controller Facility Training Program Federal Aviation Administration," dated March 31. This report contains twelve recommendations. The FAA concurs with recommendations 1,3,5,6,9, 10, 11, and 12; non-concurs with recommendations 2 and 8; and partially concur with recommendations 4 and 7.

Following the overall comments is the FAA's response to each recommendation.

Overall Comments

The FAA will hire and train nearly 17,000 new air traffic controllers over the next 10 years. Simultaneously, the agency must manage today's air traffic while integrating new technologies into air traffic operations. While developmental training is very important, we do not think it is more important than the overall operational performance of the National Airspace System (NAS).

The FAA set ambitious training goals in the first Controller Workforce Plan (CWP), published in December 2004. One of those goals compressed the training time required to reach Certified Professional Controller (CPC) status from three to five years down to two to three years. We are very proud of the progress we are making in both our Terminal and En Route facilities towards this goal. The goal, however, was an internal one, not an operational requirement, and we believe that the subject report overstates the consequences to the NAS should our training times exceed those established in the original Plan.

Developmental controllers can and do control traffic as they progress towards CPC status. This has been a practice in FAA facilities for the last 40 years. Our on-the-job training (OJT) program is designed to provide trainees with sufficient seasoning time as well as opportunities to develop their skills. Facilities often allow them to work under the direction of a supervisor in order to gain

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experience, so even if the process takes longer, it can result in a more-seasoned trainee. However, no trainee works live traffic independently until the controller has been certified to work that traffic position.

The OIG draft report correctly states that one of the benefits of developmentals progressing to CPC is that only CPCs can in turn provide OJT to other developmentals. However, as long as there are sufficient numbers of CPCs to provide OJT, as well as staff the more difficult positions that developmentals cannot, there is no pressing need for facilities to sacrifice operational performance in order to simply train developmentals.

OIG Recommendation 1: Convene a working group that includes facility managers, training managers, and union representatives to identify a target percentage or percentage range of developmental controllers that facilities (by facility type—both en route and terminal) can realistically accommodate while accomplishing facility training and daily operations.

FAA Comments: Concur. The FAA will convene a workgroup to identify a percentage range target for developmental controllers based on facility type. This target range is simply a guideline that indicates that a facility has a particular number of trainees in its pipeline. Where each of those trainees are in the training cycle, as well as other facility level indicators such as traffic forecasts, retirement forecasts, overtime usages, technology integration projects, etc., must all be evaluated on a case-by-case basis to determine whether a facility is potentially in need of management focus. Furthermore, training and other facility indicators are dynamic and will evolve throughout the year, rendering "point in time" snapshot of trainee ratios less meaningful. The FAA will determine the composition of this workgroup. We anticipate this workgroup will hold its first meeting no later than June 1.

OIG Recommendation 2: Include in the next update to the Controller Workforce Plan the actual number of CPCs, CPC-ITs, and developmental controllers by location to provide stakeholders with an accurate picture of the current makeup of the controller workforce.

FAA Comments: Non-Concur. The agency does not believe that providing a snapshot at this level of information once a year in our update to the CWP accurately captures the dynamic staffing profile or status of this workforce. There are 314 FAA facilities with different staffing levels. As we continue to bring in a new generation of controllers, the numbers in these categories could change frequently. Furthermore, trainees can and do control traffic as they progress towards CPC status. The service units track the progress of individual trainees through the training database, and take appropriate action as necessary throughout the year. Publishing annual static snapshots of total trainees by facility will be of little meaningful use to readers of the Controller Workforce Plan.

OIG Recommendation 3: Establish a method for placing newly hired controllers at facilities that considers the available number of OJT instructors, available classroom space, the available number of simulators, and training requirements of existing CPC staff.

FAA Comments: Concur. The resources above should be considered as a factor in the placement of developmentals in facilities. As a means to achieving this, the facility training managers and the headquarters program managers in the En Route Service Unit have collaborated on a training schedule that identifies the number of new employees each facility is capable of handling at one time, the number of available OJT instructors, lab availability, and incoming technological changes that will impact training within the facility. This schedule was established for the current fiscal year and has been in use since October. The schedule for fiscal year (FY) 2009 has been developed and will be finalized during the third quarter of this year.

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The Terminal Service Unit will convene a working group made up of facility and training managers whose goal will be to establish "feeder facilities" taking into account the available number of OJT instructors, available classroom space, the available number of simulators, and contract training support. The expectation is that once certified, controllers from the feeder facilities will progress to higher level facilities. Future hiring plans will allocate a predetermined percentage of new hires to these feeder facilities.

OIG Recommendation 4: Include the initial results of the Agency's new controller retention bonuses in the next update of the Controller Workplace Plan.

FAA Comments: Partially concur. Offering retention incentives is a common, long-standing practice in both government and the private sector but retention bonuses are just part of an overall "toolkit" of strategies the FAA uses. Staffing dynamics at each facility are different; therefore, different strategies may be needed to ensure appropriate staffing. To imply that only retention bonuses have an effect on staffing levels would be misleading. Consequently, FAA does not believe that the Workforce Plan is the appropriate medium to provide such information, but if requested, FAA would provide it to the OIG separately.

OIG Recommendation 5: Designate authority and responsibility for oversight and direction of the facility training program at the national level in the next update of FAA's National Training Order 3120.4L, which is due summer 2008.

FAA Comments: Concur. As noted in FAA Order 3120.4L and cited in the draft report, the Manager, Controller Training Division (now Air Traffic Controller Training and Development Group, AJA-51) is delegated authority in all matters related to the national training program and policies described in this Order. In addition, *AlA-51* sets national program policy and guidance for air traffic technical training through this Order.

ATO En Route, Terminal, and System Operations are responsible for ensuring their facility training program requirements are in accordance with FAA 3120.4. These lines of business are responsible for conducting their respective training programs.

ATO Safety provides oversight for facility training. They conduct periodic facility evaluations. The results are consolidated and reported to Terminal, En Route and System Operations service units to address.

OIG Recommendation 6: Develop a contingency plan for actions needed to ensure continuous training support during any change from the current WCG contract to any possible follow-on contract.

FAA Comments: Concur. The Training Support for Air Traffic (TSAT) contract (WCG support to the field) and the Air Traffic Control Optimum Training Solution (ATCOTS) procurement are both administered in the office of the Director ATO Technical Training and Development. Both program managers have been communicating to ensure that there is no lapse in training support during the change from the current TSAT contract and the follow-on contract. The contingency plan is to award a bridge contract to the TSAT vendor on a month-to-month basis until award of ATCOTS. Both program managers will be monitoring the status of the ATCOTS procurement to ensure that there is adequate time to implement any follow-on contractual actions.

OIG Recommendation 7: Issue written guidance requiring facility managers to establish OJT as a facility priority and only allow suspension of training for critical operational necessities.

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FAA Comments: Partially Concur. Guidance will be coordinated and issued by the En Route and Oceanic Services and the Terminal service units. This guidance however will not place training above operational integrity which could potentially introduce delays into the system, and artificially drive up staffing requirements, which we do not believe is in the best interest of the flying public.

OIG Recommendation 8: Issue written guidance that holds managers accountable for achieving nominal "time-to-certify" metrics for en route and terminal training programs.

FAA Comments: Non-Concur. Additional written guidance is not needed to establish accountability for air traffic managers. Nominal time to certify metrics, e.g., three years in the en route option, have already been established and are contained in the FY 2008 ATO and Service Level Strategic Mapping Plans (SMP). These expectations have been communicated through the Service Area and Service Delivery Points. Air Traffic Managers have been briefed on these performance expectations and tracking is being accomplished through the National Training Database. The national Air Traffic Technical Training Managers for both En Route and Oceanic Services and Terminal Services accomplish required follow-up to ensure compliance with these goals, with non-compliance being properly justified.

In addition, a training metric has been established in the SMP which tracks the number of developmentals on track to make CPC in three years or less. The results are shown in terms of a percentage. Ninety percent on track is the goal for both En Route and Terminal service units.

OIG Recommendation 9: Establish procedures for ensuring the accuracy of data input into the national training database and use the database to identify trends at individual facilities (en route and terminal) that could indicate training problems and take corrective action as needed.

FAA Comments: Concur. FAA created a national OJT database that tracks all developmentals in all phases of facility training. Both En Route and Terminal personnel input training completion data for all developmentals while facility training is under way.

- There are target training days allotted for each stage of training for each developmental. This data can be rolled up by facility, region, or service unit.

- This data is reviewed at Headquarters regularly by facility and managers are held accountable when they are over the time allotment in each training phase.

- The data is also reviewed for trends, problems, and other areas that may need attention.

- This tracking system has significantly reduced facility training time by injecting transparency and accountability into the system.

- This system will continue to be upgraded to include information on each developmental from selection to CPC.

In addition, there is an error check on the system which tests for the most common types of errors. We have contract support which tests the accuracy of data inputted on a regular basis. The FAA is changing some of the categories the facilities use to input data and are eliminating the option of "other" as an entry option to increase the accuracy of the data. This data is used to identify trends and bring to light those facilities that might have training issues or problems that need to be resolved. Those facilities not making flight plan goals are highlighted.

Due to multiple training variables at field facilities, it is more challenging for terminal to input consistent data into the system. To remedy this, we recently began conducting an ongoing Training

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Summit with respective training stakeholders who represent Terminal, En Route, and other elements of air traffic. In these meetings, this issue has been presented and the recommendation was made to create a task force to develop a process ensuring accurate, consistent, and efficient data input for the system. This team is currently being formed.

OIG Recommendation 10: Establish additional methods for disseminating successful training methods used at individual facilities that could be applied at other locations (en route and terminal), such as an internet website for facility training.

FAA Comments: Concur. Dissemination of successful training practices is important to assist facilities in improving training performance. In accordance with the CWP, the FAA is bringing on new hires at a pace not seen in recent history. This in turn creates an accelerated demand for training. Training managers throughout ATO field facilities are developing innovative solutions to help developmentals acquire the necessary skills and knowledge to get certified.

For example, we recently formed a training work group that crafted a Strategy for Training to address the specific needs of the FAA and to forge goals for the future ATO training system. This strategy is being developed in a phased approach involving all relevant stakeholders and lays out vision, goals, implementation strategy, and initiatives.

We are also conducting weekly training summit meetings with respective training stakeholders to share best practice and other relevant training and development information. These stakeholders represent a cross-section of air traffic functions in headquarters, at the academy, and in the field facilities. The Director, Technical Training and Development has also compiled a comprehensive list of training information, facts, trends, and statistics which, once approved, will be placed on the directorate website. This site also includes other relevant training information and we foresee it evolving to include more best-practice information about training methods at the facility level.

Finally, our Terminal and En Route Services have been implementing efforts as well. For example, the En Route and Oceanic Services Unit currently conducts monthly training telecons including detailed discussions of facility performance and initiatives taken to improve training performance. En Route and Oceanic Services also conducts an annual Quality Assurance and Training conference at which goals, initiatives, and recognition of outstanding training performance is accomplished.

OIG Recommendation 11: Conduct a comprehensive review of facility training as stated in the 2004 Controller Workforce Plan.

FAA Comments: Concur. The contractor that wins the ATCOTS procurement will perform an initial analysis of the current environment and establish benchmarks for the existing training processes within 90 days of contract award. The contractor will also conduct analysis and recommend improvements to the program in order to increase quality and efficiency while meeting our controller proficiency requirement.

OIG Recommendation 12: Ensure that the installation of additional simulators at terminal and en route facilities remains on schedule to capitalize on the significant success this type of training has demonstrated thus far.

FAA Comments: Concur. En Route and Oceanic Services has completed the installation of the En Route Training Support System (ERTSS) at six targeted facilities and at the Academy. This solution relied heavily on commercial off-the shelf hardware, and previous FAA Academy successful software (SIGNAL) to provide additional training capacity at targeted facilities. The ERTSS solution enables

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En Route and Oceanic Services to redeploy these systems as previous sites ease a training backlog situation.

Also, Terminal Services is on schedule to install 12 tower simulators in FY 2008. Site surveys have been held at the Academy and at five of the six operational sites. The sixth site survey started the week of April 7, 2008. The six FAA Academy systems will be installed by August 2008. The six operational systems will be installed by September 2008. We are still on schedule to install the remaining 12 tower simulators by September 2009.

Comments on Findings:

Page 3 - Table 1. OIG shows a growth in trainee percentages off an artificially low base. At 15.2 percent, the draft report depicts one of the lowest trainee percentages in the last 40 years for comparison. End of fiscal year trainee ratios have historically been higher than even the 24.5 percent December 2007 level for most of the last 40 years. See Figure 5.3 on page 28 of the 2008 update to the Controller Workforce Plan for a more complete picture of historical trainee ratios.

Page 7 - CPC-IT transfers are down primarily because the FAA is doing a better job of managing the transfers to facilities where we need them and discouraging transfers where we don't. In the decade before we ramped up our hiring again in FY 2005, transfers were a relatively larger source of talent to replace controller attrition due to retirements, promotions, etc. Now that new hires are being reintroduced to the system at more normal levels, CPC-ITs will playa relatively smaller role in the replacement cycle. However, we will continue to solicit CPC-IT transfers to supplement staffing at individual facilities as necessary as we have the tools to do so a part of the current contract. The OIG draft report also states that if controllers transfer to a new facility their pay "would" be adjusted to the

w pay bands. This statement is inaccurate in that it ignores the fact that FAA preserved the ability to use tools to incentify transferring controllers as necessary (see pay Article 108).

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

Review of the Air Traffic Facility Training Program
Section 508 Compliant Presentation

Table 1. Total Controller Workforce Composition

April 2004	12,328 Certified Professional Controllers	2,209 Controllers in Training	14,537 in total
December 2007	11,026 Certified Professional Controllers	3,584 Controllers in Training	14,610 in total
Difference between April 2004 and December 2007	1,302 less Certified Professional Controllers	1,375 more Controllers in Training	Total difference between time periods: 73 more controllers difference

Source: OIG analysis of FAA data

Table 2. Comparison of Controller Pay Bands

Under the old pay system (Air Traffic Control Pay System), the minimum and maximum salaries for controllers at air traffic control (ATC) levels 3 through 12 were as follows:

ATC Level	Minimum Salary	Maximum Salary
ATC Level 3	$44,800	$62,720
ATC Level 4	$47,822	$66,951
ATC Level 5	$54,278	$75,989
ATC Level 6	$59,978	$83,969
ATC Level 7	$66,277	$92,788
ATC Level 8	$73,236	$102,530
ATC Level 9	$80,925	$113,295
ATC Level 10	$93,063	$130,288
ATC Level 11	$97,947	$137,126
ATC Level 12	$102,846	$143,984

Under the new pay system, the minimum and maximum salaries for controllers at air traffic control (ATC) levels 3 through 12 are as follows (note: these figures include the 2007 pay band increase):

ATC Level	Minimum Salary	Maximum Salary
ATC Level 3	Not applicable	Not applicable
ATC Level 4	$37,800	$50,925
ATC Level 5	$37,800	$50,925
ATC Level 6	$45,475	$58,600
ATC Level 7	$46,100	$63,725
ATC Level 8	$53,775	$71,400
ATC Level 9	$56,100	$79,325
ATC Level 10	$63,775	$87,000
ATC Level 11	$68,500	$98,525
ATC Level 12	$76,175	$106,200

Note: New pay system effective as of January 7, 2007
Source: FAA

Figure 2. En Route Versus Terminal Training Processes

Terminal facility training involves the following:

Stage 2: Flight data. Steps to completion are (1) classroom training, (2) on-the-job training, and (3) certification.

Stage 3: Clearance delivery. Steps to completion are (1) classroom training, (2) on-the-job training, and (3) certification.

Stage 4: Ground control. Steps to completion are (1) classroom training, (2) on-the-job training, and (3) certification.

Stage 5: Local control/cab coordinator: Steps to completion are (1) classroom training, (2) on-the-job training, and (3) certification.

Stage 6: Non-radar terminal control: Steps to completion (if applicable): (1) classroom training, (2) simulation training (3) on-the-job training, and (4) certification.

Stage 7: Radar control: Steps to completion (if applicable): (1) classroom training, (2) simulation training (3) on-the-job training, and (4) certification.

Note: the order of stages 3 through 7 may be changed at the discretion of the facility manager.

Average training time to reach certified professional controller level is as follows:

- High-level terminal (ATC level 9 through 12) = 36 months.
- Mid-level terminal (ATC level 6 through 8) = 24 months
- Low-level terminal (ATC level 4 through 5) = 8 months

En route facility training involves the following:

Stage 2: Assistant controller (flight data). Steps to completion are (1) classroom training, (2) on-the-job training, and (3) certification.

Stage 3: Non-radar and radar associate (RA). Steps to completion are (1) classroom training, (2) on-the-job training, (3) simulation, and (4) certification. (Note: certification on two positions qualifies a developmental to work independently and to proceed to stage 4 training.

Stage 4: Radar controller: Steps to completion are (1) classroom training, (2) on-the-job training, (3) simulation, and (4) certification. (Note: certification on two positions qualifies a developmental to work independently. Note: developmentals continue training on remaining RA and other positions until they reach Certified Professional Controller. Note: average training time to reach Certified Professional Controller equals 36 to 60 months.)

Source: FAA

Table 3. Washington Consulting Group (WCG) Contract Support, 2004 to 2007

As of September 30, 2004, the number of facilities supported was 53. The number of WCG employees was 486. As of November 7, 2007, the number of facilities supported was 190. The number of WCG employees was 825.

Source: FAA

Table 4. Results of NASA Ames Air Traffic Simulator Evaluation

Facility - Position	Percent Fewer Days To Complete Training	Percent Fewer Hours of OJT Training
Ontario Tower – Ground position	With the use of simulators, it took controllers 31 percent fewer days to complete training.	59 percent fewer hours of on-the-job training
O'Hare Tower - Ground position	With the use of simulators, it took controllers 42 percent fewer days to complete training.	38 percent fewer hours of on-the-job training
Miami Tower - Ground position	With the use of simulators, it took controllers 60 percent fewer days to complete training.	21 percent fewer hours of on-the-job training

Source: FAA 2007 Controller Workforce Plan Update