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FAA's Fiscal Year 2009 Budget Request: Key Issues Facing the Agency

Statement of
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Mr. Chairman and Members of the Subcommittee:

We appreciate the opportunity to testify today on the Federal Aviation Administration's (FAA) fiscal year (FY) 2009 budget request. Our testimony will focus on the key issues that will frame FAA's financial requirements over the next several years.

Meeting the current and forecasted demand for air travel is important to the flying public and the Nation's economic health and will remain a top priority for the Department. FAA is facing the formidable challenge of operating and maintaining an increasingly strained system while transitioning to the next generation of air traffic control. In addition, FAA must concurrently address attrition in two of its most critical workforces—air traffic controllers and aviation safety inspectors.

Escalating numbers of severe flight disruptions and delays as well as a sharp rise in consumer dissatisfaction are all signs of an increasingly strained system. The average delay length rose from 56 minutes in the summer of 2006 to 60 minutes in the summer of 2007. In addition, airlines cancelled nearly 48,000 flights at 55 large airport tracked by FAA—a 28 percent increase above the summer of 2006. Problems are likely to get worse in the near term as FAA forecasts that commercial airlines will transport over 1 billion passengers by 2015. At the request of this Subcommittee, we are preparing an "after-action" report on last summer's delays and assessing current efforts to improve airline customer service.

Within this context, FAA recognizes that it must also remain vigilant of its primary mission—ensuring the safety of the National Airspace System (NAS). While FAA oversees the safest air transportation system in the world, the recent close calls on the ground in Chicago and New York serve as reminders that all stakeholders must work to make our system even safer. Aviation stakeholders have expressed growing concerns regarding the rise in severe runway incidents—a serious risk to aviation safety. In FY 2007, there were 370 runway incursions; this is a 12-percent increase over FY 2006.

FAA has created a task force of stakeholders that includes pilots, airport managers, and controllers to address runway safety issues. Although this is a good step, the severity of recent incidents underscores the need for heightened attention. As we have noted in a series of reports and testimonies since 1997, a range of actions—including technological, procedural, and airport infrastructure improvements—are needed to enhance the margin of safety on the Nation's runways. We note that runway safety will be the subject of a hearing before this Subcommittee next week.

As the Subcommittee is aware, FAA does not have a long-term reauthorization or financing mechanism in place. Since September 30, 2007, FAA has been funded through short-term extensions of the existing laws and taxes. The most recent

extension expires in 3 weeks on February 29, 2008. Reaching agreement on a financing mechanism is an urgent matter because taxing and spending authority for FAA programs will expire at that time. Further, FAA has little to fall back on as the Trust Fund's uncommitted balance has been depleted to $1.5 billion.

Mr. Chairman, regardless of the funding mechanism ultimately decided upon by Congress, several key issues demand FAA's attention. These include (1) keeping existing modernization projects on track and moving forward with the Next Generation Air Traffic Management System (NextGen), (2) addressing key issues within two of FAA's most critical workforces, and (3) establishing realistic funding levels for airports. It is against this backdrop that we would like to discuss the Agency's FY 2009 budget request of $14.6 billion.

Keeping Existing Modernization Projects on Track, Reducing Risk With NextGen, and Setting Realistic Expectations

FAA's capital account is now being shaped by NextGen—an enormously complex effort that will cost tens of billions of dollars. FAA is requesting $2.7 billion for its capital account in FY 2009, an increase of over $200 million from the FY 2008 enacted level of $2.5 billion. Over $600 million in the FY 2009 request is dedicated to NextGen efforts, such as the Automatic Dependent Surveillance-Broadcast (ADS-B)—a new satellite-based surveillance system that has the potential to enhance safety and capacity.

It will be important to keep existing modernization efforts on track because 30 projects are expected to serve as platforms for NextGen initiatives. At the request of this Subcommittee, we examined progress with 18 of those major acquisitions with a combined value of $17.5 billion. We will be issuing our report next month.

While we are not seeing the massive cost growth or schedule slips that occurred in the past, we are concerned about several projects that continue to experience cost and schedule risks or reduced benefits. For example, FAA has spent about $314 million (57 percent) of planned funding for the Airport Surface Detection Equipment-Model X (ASDE-X) program (a technology to prevent accidents on runways). However, FAA has only deployed 11 of 35 systems for operational use and must now deploy the remaining systems at the more complex airports with less than half of the planned funds remaining.

FAA is making progress toward developing the NextGen Enterprise Architecture (a technical blueprint), which is planned to be implemented by 2025. The Agency is also exploring ways to accelerate NextGen. However, costs for NextGen remain uncertain, and FAA needs to establish reasonable expectations for NextGen investments and realistic timeframes for improvements to enhance capacity and reduce delays. At this juncture, FAA needs to pursue the following actions:

- *Conduct a gap analysis of the current NAS and future NextGen capabilities.* FAA's NextGen architecture does not detail how FAA will transition from the present NAS and the future NextGen architectures, which will have considerably different capabilities and performance parameters. Until FAA completes a gap analysis, it will not be able to determine technical requirements that translate into reliable cost and schedule estimates for major acquisitions.
- *Set expectations and establish NextGen funding priorities.* At this point, it is difficult for decision makers and FAA to determine what to invest in first or what can be accelerated. FAA needs to better understand costs and benefits and then identify the high priority improvements and reflect those priorities in budget requests.
- *Develop an interim architecture for what can be accomplished by 2015.* Because of the significant differences between the present system and the NextGen architecture and concept of operations, FAA should develop an interim architecture for the 2015 timeframe. This would help FAA to determine reasonable goals, establish priorities, fully identify adjustments to existing projects, refine requirements for new systems, and understand complex transition issues.
- *Develop a strategy for acquiring the necessary skill mix to effectively manage and execute NextGen.* In response to our February 2007 report,[1] FAA contracted with the National Academy of Public Administration to assess the skill sets needed for NextGen. A preliminary report[2] highlighted the need for proficiency in systems integration and systems engineering, particularly with an understanding of the human factors discipline. FAA must anticipate needed skill sets for NextGen to avoid the problems that have plagued its modernization efforts.

Addressing Key Issues Within Two of FAA's Critical Workforces

In FY 2009, FAA must continue to address air traffic controller and safety inspector attrition. Ensuring that it has the right number of fully certified controllers and inspectors at the right locations remains a key challenge for FAA.

Addressing Controller Attrition and Training: The long-expected surge in controller attrition has begun. Since 2005, 3,300 controllers have left the Agency. The total rate of attrition was 23 percent higher than FAA had 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. Still, FAA faces a major challenge as it must hire and train 15,000 new controllers through 2016.

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[1] OIG Report Number AV-2007-031, "Joint Planning and Development Office: Actions Needed To Reduce Risks With the Next Generation Air Transportation System," February 12, 2007. OIG reports and testimonies are available on our website: www.oig.dot.gov.

[2] Report by a panel of the National Academy of Public Administration, "Workforce Needs Analysis for the Next Generation Air Transportation System (NextGen), Preliminary Findings and Observations," December 2007.

As a result of the high level of controller attrition, FAA is facing a fundamental transformation in the composition of its controller workforce. The overall percentage of controllers in training has grown substantially over the past 3 years. From April 2004 to September 2007, the overall size of the controller workforce remained constant. However, during the same period, the number of controllers in training increased by 1,177, or 53 percent, while the total number of fully certified, or Certified Professional Controllers (CPC), decreased by the same amount. New controllers now represent 23 percent of the workforce (up from 15 percent in 2004). However, that percentage can vary extensively by location—from as little as 2 percent (e.g., Boston TRACON) to as much as 50 percent (e.g., Las Vegas TRACON).

A major challenge in addressing the attrition surge will be to train new controllers to the CPC level at their assigned locations. Facility training can take up to 3 years and is the most expensive part of new controller training. 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 location) can become on-the-job training (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 8 years and beyond.

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. However, controllers are not qualified CPCs until they have certified on all positions within their assigned area. In addition, 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.

We recently completed an audit of FAA's controller facility training program—our second review of this program since 2004. Overall, we found that the program continues to be extremely decentralized and the efficiency and quality of the training varies 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, but many of FAA's efforts are still in the early stages. To achieve its goals for the controller workforce, FAA will need to take the following actions:

- *Clarify responsibility for oversight and direction of the facility training program at the national level.* Facility training is primarily the responsibility of the Air Traffic Organization's Vice President for Terminal Services and Vice President for En Route and Oceanic Services. However, the 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 Controller Workforce Plan. Both have key roles in the controller training process as well. As a result of these overlapping responsibilities, we found there is 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 responsible for facility training. FAA needs to clarify responsibility for oversight and direction of the facility training program at the national level and communicate those roles to facility managers.

- *Establish realistic standards for the level of developmental controllers that facilities can accommodate.* Given the various sizes and complexities of FAA's more than 300 facilities, FAA needs to identify (by facility) how many developmental controllers facilities can realistically accommodate. FAA must consider several factors, such as: (1) the number of available OJT instructors, (2) available classroom space, (3) the number of available simulators, (4) all training requirements, and (5) the number of recently placed new personnel already in training.
- *Implement key initiatives proposed in its 2004 Controller Workforce Plan.* FAA has not implemented key initiatives to improve facility training that it proposed in the 2004 Controller Workforce Plan. These include, "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. However, FAA never issued this policy.

In addition, FAA has not comprehensively evaluated its facility training program. In its 2004 Controller Workforce Plan, FAA stated 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 for this effort to help reduce the time it takes new controllers to become CPCs. However, FAA never conducted the evaluation. FAA must follow through with this evaluation and its Controller Workforce Plan initiatives.

To its credit, FAA has successfully implemented an important initiative—increasing the use of training simulators at towers. Simulators were recently installed at four towers: Chicago O'Hare, Miami, Ontario, and Phoenix. Results thus far indicate that simulators are a valuable training tool. 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 needs to ensure that this initiative remains on track to capitalize on the success this training has demonstrated.

Addressing Inspector Attrition: FAA is also facing substantial safety oversight challenges due to potential attrition in its inspector workforce. FAA has about 4,100 inspectors to oversee a dynamic and rapidly changing industry, which includes 118 commercial air carriers, almost 5,000 foreign and domestic repair stations, over 700,000 active pilots, and over 1,600 approved manufacturers.

Last year, FAA's hiring efforts kept pace with retirements, and the Agency ended the year with 133 additional inspectors over FY 2006 levels. However, FAA must continue to closely oversee this effort since nearly half of the inspector workforce will be eligible to retire in the next 5 years.

FAA will never have an inspector workforce that is large enough to oversee all aspects of the industry, so it is important for the Agency to place inspectors where they are most needed. To maximize its limited inspector resources, FAA has been working toward risk-based safety oversight systems for air carriers, repair stations, and manufacturers. These systems target inspector resources to areas of greatest risk. However, unless FAA develops a reliable staffing model, it will not be able to effectively use its inspectors. At the direction of Congress, the National Research Council completed a study[3] of FAA's current methods for allocating inspector resources in September 2006 and recommended that FAA develop a new staffing model.

It has been over a year since the Council study, and FAA is still in the early stages of developing a new staffing method. FAA has established an interim target date to assess current staffing methods and begin identifying the elements of the next generation staffing tool by September 2008. FAA recently finalized milestones to develop and implement the new model and plans to begin using it by October 2009. Making measurable progress toward a new staffing model is a key watch item, and we will continue to monitor this important initiative.

Establishing Funding Levels for the Airport Improvement Program

FAA is requesting $2.75 billion for the Airport Improvement Program (AIP) in FY 2009. The AIP supports the airport system by providing funds to primarily enhance safety and security, maintain the infrastructure, increase capacity, and mitigate airport noise in surrounding communities. Because Vision 100[4] expired at the end of FY 2007, and a long term reauthorization is not yet in place, there are no funding targets for FY 2008 and beyond. The FY 2009 request is again a substantial reduction from the FY 2007 authorized level in Vision 100. Congress is now faced with the challenge of determining AIP funding levels for FY 2009.

Aviation congestion continues to be a top priority for the Secretary. However, it is increasingly difficult for airports and FAA to meet this challenge with no AIP

[3] "Staffing Standards for Aviation Safety Inspectors," September 20, 2006.
[4] Vision 100 - Century of Aviation Reauthorization Act, Pub. L. No. 108-176 (2003).

authorization. The Omnibus Appropriations Bill,[5] which funded FAA in FY 2008, provided an appropriation for the AIP account but did not extend the AIP contract or obligation authority beyond December 31, 2007. As a result, FAA no longer has the contract authority to issue new AIP grants, although it can fund previously issued grants.

According to FAA, it is using excess funds on existing grants to cover its operating costs until a temporary or final reauthorization is passed. However, the current authority to spend money from the Trust Fund expires at the end of this month.

The uncertainty of future AIP grant authority makes it difficult for the Nation's airports to determine when, or if, they will receive their AIP grants. Smaller airports are more vulnerable because they have fewer revenue sources than large airports. Many smaller airports must suspend projects until they are assured of AIP grant funds. Lengthy delays in the release of AIP grants could prevent airports from taking full advantage of the construction season and delay important safety and capacity projects that could reduce congestion in the busy travel season ahead.

I would now like to discuss these matters in greater detail.

[5] H. Rep. No. 2764 (2008).

FAA'S FY 2009 BUDGET

FAA is requesting $14.6 billion for FY 2009, a decrease of $272 million from its FY 2008 enacted budget. As with last year's submission, FAA is presenting its budget request in a format and structure that mirror its plans to shift from the current excise taxes to a structure that relies on, among other things, cost-based user fees beginning in FY 2010. FAA's budget request funds four accounts as follows:

- **For the Safety and Operations account,** FAA is requesting $2.05 billion (14 percent of FAA's total budget)—an increase of $159 million over the FY 2008 budget for comparable functions. For safety-related functions, such as safety inspectors and certification activities, FAA is requesting $1.19 billion, an increase of $52 million from this year's levels.
- **For the Air Traffic Organization (ATO) account,** FAA is requesting $9.67 billion (66 percent of FAA's total budget)—an increase of $309 million over comparable functions in the FY 2008 enacted budget. For the salaries and expenses of operating the ATO, FAA is requesting $7.079 billion—an increase of $113 million over this year's levels. FAA is also requesting $2.59 billion in capital program funds for the ATO—an increase of $196 million from this year's budget. Capital projects associated with other functions, such as safety, are now included in the Safety and Operations account.
- **For the AIP account,** FAA is requesting $2.75 billion (19 percent of FAA's total budget)—a decrease of $765 million from the FY 2008 enacted levels. We note that since FY 2001, the AIP account has been funded at about $3.2 billion or higher each year.
- **For the Research, Engineering, and Development (RE&D) account,** FAA is requesting $171 million (1 percent of FAA's total budget)—an increase of $24 million from the FY 2008 request.

To demonstrate in terms of the old and new budget presentation, table 1 summarizes the FY 2009 budget request in the FY 2007 four-account format.

Table 1. FAA Budget FY 2007 Through FY 2009
($ in Millions)

Account	FY 2007 Enacted	FY 2008 Enacted*	FY 2009 Request
Operations	$8,374	$8,740	$8,998
Facilities & Equipment	$2,518	$2,514	$2,724
Airport Improvement Program	$3,515	$3,515	$2,750
Research, Engineering, and Development	$130	$147	$171
Total	**$14,537**	**$14,915**	**$14,643**

Source: FAA's FY 2009 budget request
*Figures may not add up due to rounding.

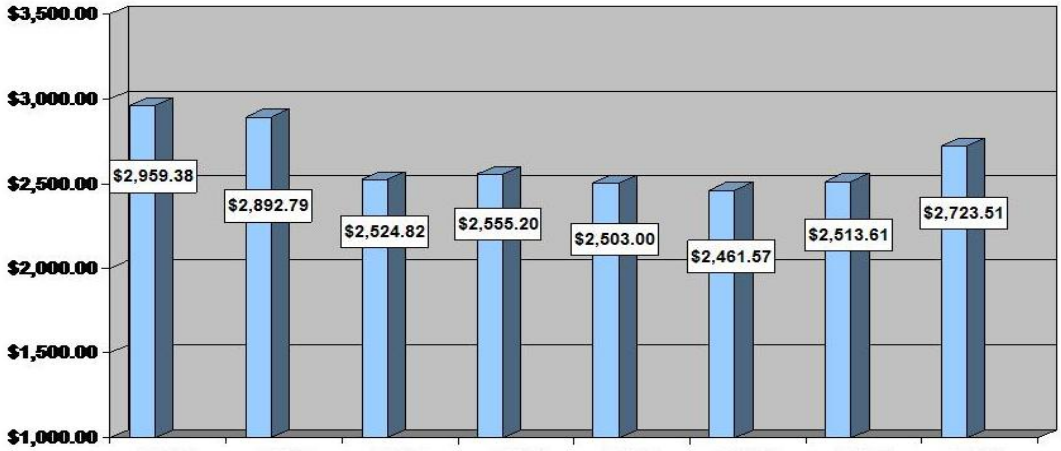
The FY 2009 budget would be financed by the two mechanisms currently used to fund FAA: excise taxes deposited into the Airport and Airway Trust Fund and a General Fund contribution. FAA estimates that the Trust Fund will contribute $11.9 billion, or 81 percent, toward its total budget and the General Fund will contribute $2.7 billion, or 19 percent. These amounts are similar to budget levels in previous years. The exhibit to this statement shows the past and projected revenues and uncommitted balances for the Trust Fund.

PERSPECTIVES ON FAA'S CAPITAL ACCOUNT

FAA is at a crossroads with its efforts to modernize the National Airspace System. The Agency will be challenged to keep ongoing projects on track, maintain aging facilities, and develop and implement NextGen initiatives. For FY 2009, FAA is requesting $2.7 billion for capital funding, an increase of 11 percent over last year's level. At the request of this Subcommittee, we are (1) updating our work on progress and problems with 18 major acquisitions valued at $17.5 billion and (2) reviewing how existing projects will be impacted by FAA's efforts to implement NextGen. We will issue our report later this month.

Between FY 2005 and FY 2008, FAA's capital account has remained steady at $2.5 billion annually (see figure 1 below) and has mainly focused on sustaining the existing system. As we have previously reported, increasing operations costs (mostly salary-driven) have crowded out capital investments. As the capital account stayed relatively flat, FAA deferred, cancelled, or postponed decisions on projects such as Controller-Pilot Data Link Communications (a way for controllers and pilots to share information that is analogous to wireless e-mail) and the Local Area Augmentation System (a satellite-based precision navigation system).

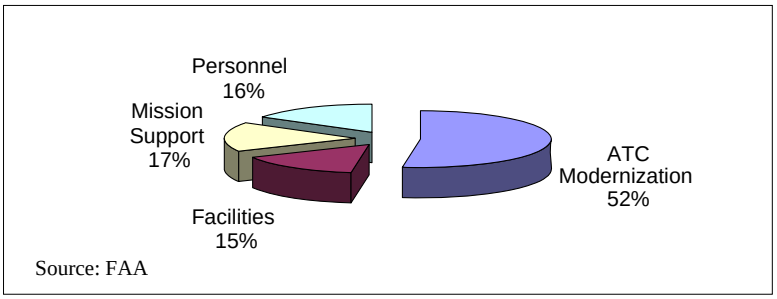
Figure 1. F&E Funding, FY 2003 to FY 2009
(Totals in Millions)



Source: FAA

From FY 2003 to FY 2007, FAA invested slightly over half of its capital budget in modernizing air traffic control equipment; the remainder was used for personnel, mission support, and facilities (see figure 2).

Figure 2. Breakout of FAA's Capital Budget, FY 2003 to FY 2007



Source: FAA

FAA is starting a new chapter in NAS modernization with NextGen, and the Agency's capital account is now being shaped by NextGen initiatives. Over $630 million in FY 2009 will be dedicated to NextGen-related programs, which include ADS-B and SWIM. Of this amount, $203 million is dedicated to eight new developmental initiatives, such as NextGen system development, trajectory-based operations, and flexible terminals and airports.

Progress and Problems With FAA Acquisitions

Overall, we are not seeing the significant cost growth and schedule slips with FAA major acquisitions that occurred in the past. This is because FAA has taken a more incremental approach to managing major acquisitions. When comparing revised baselines, only 2 of the 18 projects we reviewed have experienced additional cost growth ($53 million) and delays (5 years) since our last report in 2005.[6] However, from program inception, six programs have experienced cost growth of close to $4.7 billion and schedule delays of 1 to 12 years.

While FAA's incremental approach may reduce risk in the near term, it has left several programs with no clear end-state and less visibility into how much they will ultimately cost. A case in point involves modernizing facilities that manage traffic in the vicinity of airports, commonly referred to as "terminal modernization."

In 2004, faced with cost growth of over $2 billion for the Standard Terminal Automation Replacement (STARS) program, FAA rethought its terminal modernization approach and shifted to a phased process, committing STARS to just 47 sites at an estimated cost of $1.46 billion. FAA's original plan was to deploy the system to 172 sites for $940 million. FAA renamed this modernization effort the Terminal Automation Modernization-Replacement (TAMR) initiative.

In 2005, FAA approved modernizing displays through the TAMR program (referred to as TAMR Phase 2) by replacing legacy equipment at five additional small sites and replacing the aging displays at four large, complex facilities. However, this leaves over 100 sites still in need of modernization. Although FAA has not decided how it will modernize these sites, its FY 2008 budget submission indicates that this effort could cost over $1 billion. FAA is requesting $31.2 million for terminal modernization efforts for FY 2009.

There is no defined end-state for terminal modernization, and past problems with developing and deploying STARS leave FAA in a difficult position to begin introducing NextGen capabilities. Future terminal modernization costs will be shaped by (1) NextGen requirements, (2) the extent of FAA's terminal facilities consolidation, and (3) the need to replace or sustain existing (legacy) systems that have not been modernized.

[6] OIG Report Number AV-2005-061, "Status of FAA's Major Acquisitions: Cost Growth and Schedule Delays Continue To Stall Air Traffic Modernization," May 26, 2005.

Several Ongoing Projects Require Management Attention and Oversight

There are several ongoing acquisition programs that warrant attention because of their importance to NextGen and potential cost increases, schedule slips, or diminishing benefits.

En Route Automation Modernization (ERAM): This program replaces the hardware and software at facilities that manage high-altitude traffic and is a key platform for NextGen. With an estimated cost of $2.1 billion, ERAM is one of the largest, most complex acquisitions in FAA's modernization portfolio. FAA is requesting $203 million for ERAM for FY 2009, a reduction from the FY 2008 level of $369 million. ERAM is currently on schedule for deployment at the Salt Lake center in 2008, but considerable testing and integration work lies ahead. ERAM cost increases and schedule slips would have a cascading impact on other capital programs and could directly impact the overall transition to NextGen.

ASDE-X: ASDE-X is an important safety initiative to reduce the risks of accidents on runways. In FY 2008, FAA requested $37.9 million for the ASDE-X program. For FY 2009, it is requesting $32.7 million.

In October 2007, we reported[7] that the ASDE-X program is at risk of not meeting its goal to commission all 35 ASDE-X systems for $549.8 million by 2011 and may not achieve all planned safety benefits. As of FY 2007, FAA had expended about $314 million (57 percent) and obligated about $378 million (69 percent) of the planned funding. However, FAA had only deployed 11 of 35 systems for operational use. FAA must now deploy the 24 remaining systems at the more complex airports with less than half of the planned funds remaining.

In July 2007, FAA commissioned its ninth ASDE-X system for operational use at Louisville International Airport after addressing several longstanding technical problems. The Louisville system was the first to be deployed with the capability to alert controllers of potential collisions on intersecting runways and converging taxiways. However, under certain circumstances, when aircraft are operating on intersecting runways, the system still does not provide timely alerts to controllers. Moreover, FAA did not test the converging taxiway capability before operations began, and the system is susceptible to dropping targets during heavy precipitation.

FAA also faces challenges in meeting the unique needs of airports scheduled to receive ASDE-X. For example, in August 2007, FAA accelerated ASDE-X deployment at Chicago O'Hare International Airport. However, in January 2008, air traffic controllers expressed concern about the system's ability to accurately detect aircraft and vehicles during snow storms. FAA must focus on resolving operational performance issues before implementing key ADSE-X safety capabilities.

[7] OIG Report Number AV-2008-004, "FAA Needs To Improve ASDE-X Management Controls To Address Cost Growth, Schedule Delays, and Safety Risks," October 31, 2007.

FAA concurred with our recommendations to help the Agency achieve ASDE-X program goals and improve program management. These include: (1) improving ASDE-X management controls to reduce the risks of further cost growth and schedule delays; (2) resolving operational performance issues with key ASDE-X safety capabilities to reduce the risk of ground collisions on intersecting runways and taxiways, including during inclement weather; and (3) working with airlines and airports to provide safety enhancements that were excluded from the program re-baseline but are vital to reducing the risk of ground collisions caused by pilot and vehicle operator errors. We intend to follow up on these important issues next year.

FAA's Telecommunications Infrastructure (FTI) Program: The FTI program is a major air traffic control program intended to integrate seven FAA-owned and -leased telecommunications networks into a single network to reduce operating costs. FTI is a mission-critical program because its network carries, among other things, voice, radar, and flight data communications for air traffic control. In FY 2008, FAA requested $8.5 million to complete the FTI transition. For FY 2009 and beyond, FTI will be funded out of the Operations Account. For FY 2009, the Agency is planning to spend $186 million to support FTI operations and an additional $19 million for legacy telecommunications systems.

In April 2006, we reported[8] that FTI was unlikely to meet its December 2007 completion date and recommended that FAA improve FTI management controls and develop a realistic master schedule. FAA agreed and tasked the MITRE Corporation to conduct an independent assessment of the FTI master schedule. The assessment identified several risks associated with FAA meeting its transition deadline. Consequently, in August 2006, FAA's Joint Resource Council approved a second re-baseline of FTI's cost and schedule goals, which extended the completion date to December 2008 and increased the overall cost by over $100 million. FAA also reduced the total number of NAS services to be transitioned to FTI from 25,294 to 20,033.

Since we last reported, FAA has made progress transitioning to FTI. To its credit, FAA has delivered 18,025 of 20,033 planned services (as of December 31, 2007). However, we remain concerned about shifting requirements, eroding cost benefits, and risks to air traffic operations during the FTI transition.

Our work shows that the FTI schedule continues to fluctuate. Even though the last baseline significantly reduced the number of services planned for transition, this number has now climbed to 22,049. FAA attributes the increase to "emerging requirements."[9] Because FAA did not include these requirements in the last baseline, it is unclear what can be accommodated within current FTI cost and schedule

[8] OIG Report Number AV-2006-0147 "FAA's Telecommunications Infrastructure Program: FAA Needs To Take Steps To Improve Management Controls and Reduce Schedule Risks," April 27, 2006.

[9] These are requirements for new services that did not exist when the FTI program began, such as FS-21.

parameters. Further, the master schedule does not yet include requirements for moving forward with NextGen efforts. We recognize that these requirements will have to be addressed through adjustments to the FTI program or another effort.

FAA's main goal for FTI was to reduce Agency operating costs. Yet, we found that costs for FTI remain uncertain since FAA still has not validated cost and benefit estimates as agreed after our 2006 report. Although FAA reduced the number of services planned, the overall program cost estimate grew by over $100 million through FY 2017 and will continue to rise with emerging requirements. As costs escalate, cost savings continue to erode. In 2006, when FAA last re-baselined FTI, we estimated that cost savings decreased from $672 million to $442 million, when including sunk costs (previous investments in FTI). FAA also extended its contract for the most expensive legacy system (Leased Interfacility NAS Communications System) for 1 year with three 6-month options—this will further impact cost savings.

FTI continues to experience unscheduled outages that disrupt air traffic control operations. FTI-related outages at Chicago, Memphis, and Jacksonville caused simultaneous loss of primary and back-up FTI services, which led to flight delays. An internal FAA review found that primary and back-up FTI services were installed with inadequate separation (diversity). This problem exists at other locations, including several facilities that manage traffic in New York airspace. FAA must ensure it meets FTI diversity requirements to prevent outages. We will report on FTI later this year.

Air Traffic Management (ATM): This program provides FAA with the ability to manage air traffic and reduce the impacts of severe weather. FAA is requesting $90.2 million for ATM for FY 2009. ATM includes the Traffic Flow Management–Modernization program and the Collaborative Air Traffic Management Technologies program. There is a sense of urgency to complete this effort because the existing TFM hardware and software expires in 2009 and the age of the system prevents further upgrades.

To date, the ATM effort has not experienced cost increases or schedule delays. However, we are concerned about risks and what will ultimately be delivered since FAA and the contractor significantly underestimated the size and complexity of software development for TFM—concerns that have led to significant problems with other FAA modernization projects. FAA baselined the program in 2005 (and scheduled deployment for FY 2011) and has since modified the contract and adjusted the scope of the work. The challenges FAA faces with ATM include: (1) developing complex software and integrating ATM with other NAS systems and (2) determining cost and schedule decisions on the additional segments, which are unknown at this time.

Challenges With NextGen Programs

FAA has established initial cost and schedule baselines for the first segments of two key NextGen initiatives: ADS-B and SWIM. Both programs will require enhanced oversight as FAA begins integrating them with existing systems.

ADS-B: This program provides satellite-based technology that allows aircraft to broadcast their position to other aircraft and ground systems. For FY 2009, FAA is requesting $300 million for ADS-B. In August 2007, FAA awarded a service-based contract for the ADS-B ground infrastructure worth $1.8 billion. FAA estimates that ADS-B will cost about $1.6 billion in capital costs for initial segments of its implementation through 2014, which include the completion of a nationwide ground system for receiving and broadcasting ADS-B signals.

FAA must address several challenges to realize the benefits of ADS-B. These include: (1) gaining stakeholder acceptance and aircraft equipage, (2) addressing broadcast frequency congestion concerns, (3) integrating with existing systems, (4) implementing procedures for separating aircraft, and (5) assessing potential security vulnerabilities in managing air traffic.

As we noted in a hearing before this Subcommittee in October 2007,[10] the implementation of ADS-B is a long-term effort that will require significant investment from Government and industry. Given FAA's history with developing new technologies and its approach to ADS-B, in which the Government will not own the ground infrastructure, we believe this program will require a significant level of oversight. We will report on ADS-B later this year.

SWIM: This program provides FAA with a web-based architecture that allows information sharing among airspace users. For FY 2009, FAA is requesting $41 million for SWIM. In June 2007, FAA baselined the first 2 years of segment 1 (planned to occur between FY 2009 and 2010) for $96.6 million. FAA's latest Capital Investment Plan cost estimate for SWIM is $285 million. Current challenges include the work to determine requirements and interfaces with other FAA systems, including ERAM and ATM. Moreover, SWIM will require integration with other Federal agencies' operations to realize NextGen benefits and develop a robust cyber security strategy and design. While FAA has begun initial efforts, it still needs to establish the architecture, strategy, and design. Additional SWIM segments have yet to be determined, and the cost to fully implement SWIM is unknown.

[10] OIG Testimony Number CC-2007-100, "Challenges Facing the Implementation of FAA's Automatic Dependent Surveillance-Broadcast Program," October 17, 2007.

FAA Must Enhance Its Limited Cost and Schedule Metrics To Monitor NextGen Programs

FAA reports in the FY 2007 Flight Plan and its most recent Performance and Accountability Report that 100 percent of its critical acquisitions were within 10 percent of budget estimates and 97 percent were on schedule. In FY 2006, FAA tracked about 29 projects, including acquisition of new radars. While FAA cost and schedule performance metrics are worthwhile tools, they have limitations that decision makers must understand to properly assess the health of FAA's major acquisitions.

- First, FAA's cost and schedule metrics are "snapshots" in time. They are not designed to address changes in requirements, reductions in procured units, or shortfalls in performance that occur over time.
- Second, FAA's budget metrics compare cost estimates taken during the fiscal year using updated, "re-baselined" cost figures—not estimates from the original baseline. This is why the Wide Area Augmentation System (a satellite-based navigation system) is considered "on budget" even though costs have grown from $892 million to over $3 billion since 1998. Although re-baselining a project is important to obtain reliable cost and schedule parameters, comparisons of revised baselines—absent additional information—do not accurately depict a program's true cost parameters.
- Finally, FAA's schedule metrics used for assessing progress with several programs in 2006 and 2007 were generally reasonable but focused on interim steps or the completion of tasks instead of whether systems met operational performance goals. For example, ASDE-X metrics focused on the delivery of two systems instead of whether the systems entered service or operated as planned. We also found that there are no written criteria for selecting or reporting the milestones, and FAA needs to develop written criteria for offices to improve milestone reporting.

To sufficiently measure progress with NextGen initiatives, FAA will need to explore a wider range of metrics that focuses on promised capabilities and benefits from bundled procedures and multiple systems. In our upcoming report, we will recommend that FAA develop new metrics to assess progress with NextGen with respect to enhancing capacity, boosting productivity, and reducing Agency operating costs.

Much Work Remains To Determine How To Transition Existing Projects to NextGen

In February 2007, we recommended that FAA examine existing projects to determine if they were still needed and, if so, what adjustments would be required. FAA concurred with our recommendation and stated that it has begun this assessment. To

date, however, FAA has not made major adjustments to modernization projects to accelerate NextGen.

According to FAA, approximately 30 existing capital programs will serve as "platforms" for NextGen. Over the next 2 years, FAA must make over 25 critical decisions about ongoing programs. These decisions have significant budget implications and affect all major lines of the modernization effort with respect to automation, communications, navigation, and surveillance.

- **Automation:** FAA will approve a limited number of "candidate capabilities" and enhancements for the second major ERAM software release. In FY 2008, FAA will identify the requirements and cost parameters for new capabilities based on ERAM targeted for the 2012 to 2018 timeframe. FAA will also have to address what changes are needed to modernize its terminal facilities and whether or not it will pursue a "common automation platform" for terminal and en route environments in the future.
- **Communications:** Between FY 2008 and FY 2009, FAA plans to decide how to move forward with data communications and when to restart a data link communications program for controllers and pilots. Costs remain uncertain, and FAA faces a myriad of complex questions about its overall technical approach, implementation plans, and rulemaking initiative timeline.
- **Navigation:** FAA intends to decide how much of the existing ground-based navigation system will be retained. Specifically, in FY 2008, FAA will consider how best to move forward with the next generation precision and approach landing system and whether to pursue the Local Area Augmentation System—which has been in research and development status since FY 2004.
- **Surveillance:** As part of the effort to move forward with ADS-B, FAA must decide how to best incorporate "fusion" into existing air traffic control automation systems. Fusion in this context is defined as taking all surveillance data available for an aircraft and using the best data or combination of data to determine aircraft position and intent. Industry groups have asked FAA to accelerate its work on fusion.

FAA Needs To Refine Its Plans To Move Forward With NextGen, Reduce Risks, and Focus Investment Decisions

FAA has made progress in developing the NextGen Enterprise Architecture[11] (a technical blueprint), which is planned to be implemented by 2025. FAA has also progressed towards technical roadmaps for the automation, communications, navigation, and surveillance lines of effort. In addition, FAA has decided to rely on

[11] The NextGen Enterprise Architecture is a blueprint that links FAA's core programs and systems to the Agency's mission. This includes the transition from the "as-is" to the "to-be" environment.

the Operational Evolution Partnership (OEP), the Agency's blueprint for enhancing capacity, to help manage and implement NextGen initiatives.

However, planning documents we reviewed, including the NextGen Enterprise Architecture, lack detail with respect to requirements, particularly for automation, that could be used to develop reliable cost estimates and schedule. These documents describe a general path for almost 60 decisions that have to be made through 2025. An October 2007 MITRE Corporation assessment[12] of the Enterprise Architecture highlighted several areas that need improvement, including unresolved technical issues and gaps between the Enterprise Architecture and the NextGen concept of operations. MITRE noted that, in most cases, information in the NextGen Enterprise Architecture remained at too high of a level to be effective.

Costs for NextGen remain uncertain, and FAA needs to establish reasonable expectations for NextGen investments and realistic timeframes for improvements to enhance capacity and reduce delays. At this juncture, FAA needs to pursue the following actions:

- **Conduct a gap analysis of the current NAS and NextGen:** FAA's NextGen architecture does not detail how FAA will transition from the present NAS and the future NextGen architectures, which are considerably different. Understanding this gap is important because one industry analysis we have seen suggests that FAA could face a $50 billion software development effort with NextGen. Until FAA completes a gap analysis, it will not be possible to determine technical requirements that translate into reliable cost and schedule estimates for major acquisitions.
- **Set expectations and establish NextGen funding priorities:** At this point, it is difficult for FAA to determine what to invest in first to move forward with NextGen. FAA needs to identify the highest priority operational improvements (high-density airports; high-altitude, trajectory-based operations; or networked facilities) and systems for NextGen from the large number of possibilities in various planning documents. These priorities should then be reflected in NextGen planning documents and budget requests.
- **Develop an interim architecture for what can be accomplished by 2015:** Because of the significant differences between the current system and the NextGen architecture and concept of operations, some FAA and industry officials believe FAA should develop an interim architecture or "way-point" for the 2015 timeframe that is consistent with plans in the OEP. This would help to bridge the gap between current systems and plans for the future. It would also help FAA to determine reasonable goals, establish priorities, fully identify adjustments to

[12] "Observations, Results, and Recommendations, NextGen v2.0 Assessment," Center for Advanced Aviation Systems Development, MITRE Corporation, October 15, 2007.

existing projects, refine requirements for new systems, and understand complex transition issues.

- **Develop a strategy for acquiring the necessary skill mix to effectively manage and execute NextGen:** In our February 2007 report, we recommended that FAA determine what skill sets and expertise would be required and obtained to manage and execute NextGen initiatives. This includes a robust in-house capability for managing contracts. In response, FAA contracted with the National Academy of Public Administration to assess the skill sets needed. A preliminary report highlighted the need for proficiency in systems integration, managing large-scale programs, and systems engineering, particularly with an understanding of the human factors discipline. A final report is planned for September 2008. FAA must anticipate needed skill sets for NextGen to avoid the problems that have plagued its modernization efforts.

PERSPECTIVES ON FAA'S OPERATIONS ACCOUNT

FAA's operating costs, which primarily consist of salaries and benefits, are the largest portion of FAA's budget, representing about 61 percent of FAA's total budget request. For FY 2009, FAA is requesting $8.998 billion, an increase of $258 million over FY 2008. FAA has a long history of persistent growth in its operating costs, and this will continue to be a significant challenge for the Agency.

In FY 2009, FAA must continue to address air traffic controller and safety inspector attrition. Ensuring that it has the right number of fully certified controllers and inspectors at the right locations remains a key challenge for FAA.

The Expected Surge in Controller Attrition Is Occurring

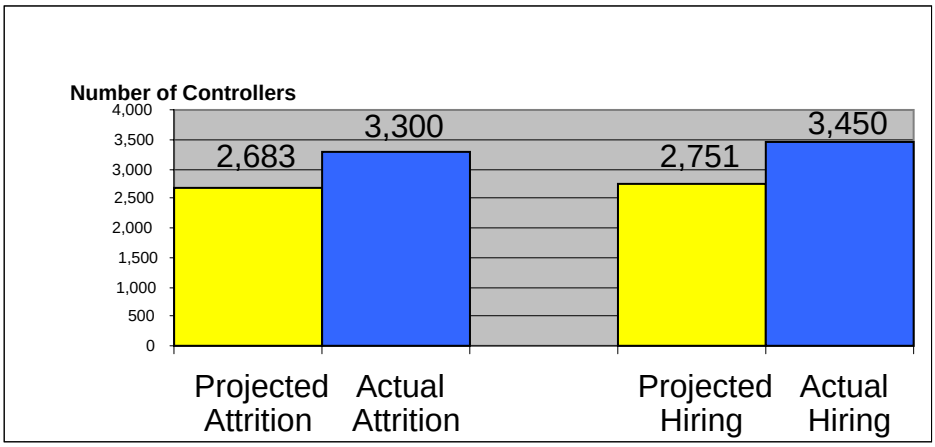
In 1981, following a period of labor unrest, an overwhelming majority of the air traffic control workforce went on strike. When 10,438 striking controllers did not return to work, then-President Reagan fired them. Between 1982 and 1983, FAA hired over 8,700 new controllers. Between 1983 and 1991, FAA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

The long expected surge in controller attrition has begun. Since 2005, 3,300 controllers have left the workforce[13]—only 37 of these left because they had reached the mandatory retirement age of 56. The total rate of attrition was 23 percent higher than FAA had projected. However, FAA has accelerated its hiring efforts to

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

fill vacancies. Since 2005, FAA has hired 3,450 new controllers—25 percent more than projected. Still, FAA faces a major challenge as it must hire and train 15,000 new controllers through 2016. Figure 3 shows FAA's estimates and actual numbers for controller attrition and new controller hiring from FY 2005 through FY 2007.

Figure 3. Controller Attrition and Hiring Projected Versus Actual (FY 2005 to FY 2007)



Source: FAA

As a result of increasing controller attrition, FAA is facing a fundamental transformation in the composition of its controller workforce. The overall percentage of controllers in training has grown substantially over the past 3 years. From April 2004 to September 2007, the overall size of the controller workforce remained constant. However, during the same period, the number of controllers in training increased by 1,177, or 53 percent, while the total number of fully certified or CPCs decreased by 1,177 (see table 2). FAA expects the percentage of controllers in training to increase to as much as 30 percent of the workforce over the next 4 years.

Table 2. Total Controller Workforce Composition

Date	CPCs	Controllers In Training*	Total
April 2004	12,328	2,209	14,537
September 2007	11,151	3,386	14,537**
Difference	(-1,177)	+1,177	--

* Includes newly hired or developmental controllers and transferred CPCs in training at new locations.
** This number does not include new hires in training at the FAA Academy.
Source: FAA

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 Controller Workforce Plan. 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 a "snapshot" of the controller workforce and provide a benchmark for year-to-year comparisons.

Training New Controllers to the Certified Professional Level Is a Critical Component for Addressing the Surge in Attrition

A major challenge in addressing the surge in controller attrition will be to train transferring and new (or developmental) controllers to the CPC level at their assigned locations. Facility training can take up to 3 years and is the most expensive part of new controller training. Developmental controllers and transferring veteran controllers face a demanding training process at their assigned locations. The training is conducted in stages and consists of a combination of classroom, simulation, and OJT. After controllers complete classroom and simulation training they begin OJT, which is conducted by a 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 location) 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 8 years and beyond.

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. However, controllers are not qualified CPCs until they have certified on all positions within their assigned area. In addition, 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.

We recently completed an audit of FAA's controller facility training program—our second review of this program since 2004. Overall, we found that the program continues to be extremely decentralized and the efficiency and quality of the training varies 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 192 facilities in 2007. However, many of FAA's other efforts are still in the

early stages of implementation. To achieve its goals for the controller workforce, FAA will need to take the following actions:

Clarify responsibilities for oversight and direction of the facility training program at the national level. Since the creation of the Air Traffic Organization, FAA has assigned national oversight responsibility for facility training to the Air Traffic Organization's Vice President for Terminal Services and the Vice President for En Route Services. However, the 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 Controller Workforce Plan. Both play key roles in the controller training process as well.

As a result of these overlapping responsibilities, we found that there is 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 responsible for facility training. In our opinion, FAA needs to clarify responsibility for oversight and direction of the facility training program at the national level and communicate those roles to facility managers.

Establish realistic standards for the level of developmental controllers that facilities can accommodate. FAA plans to increase the number of developmental controllers to over 30 percent of the total controller workforce. This would be the highest percentage of developmental controllers in the past 15 years. In its Controller Workforce Plan, FAA estimates that the controller workforce at each facility can comprise up to 35 percent in developmental controllers and still maintain operations and training.

FAA also estimates that if facilities exceed that amount, training times would significantly increase because the number of developmental controllers would surpass available training capacity. However, we found that many facilities already meet or exceed the 35-percent level. As of September 2007, 61 facilities nationwide (nearly 20 percent of all FAA air traffic control facilities) exceeded that level, compared to just 22 in April 2004. This represents a 177-percent increase in just 3 years. For example, as of September 2007:

- Miami Center had 195 CPCs and 108 developmental controllers (36 percent developmental).
- Oakland Center had 164 CPCs and 100 developmental controllers (38 percent developmental).
- Las Vegas TRACON had 23 CPCs and 23 developmental controllers (50 percent developmental).

Most facility managers, training officers, and union officials we spoke with 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 percent and 25 percent of a facility's total controller workforce.

The difference between these estimates and FAA's maximum percentage is disconcerting, particularly since 61 facilities already exceed the FAA limit. A significant issue is that 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 that could be trained at individual facilities. However, it appears 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. In our opinion, FAA needs to re-examine its estimate and identify (by facility) how many developmental controllers facilities can realistically accommodate.

In determining this amount, FAA needs to consider several factors at each location, such as the number of available OJT instructors, available classroom space, the number of available simulators, and the number of recently placed new personnel already in training.

Implement key initiatives proposed in its 2004 Controller Workforce Plan. FAA has not implemented several key initiatives relating to facility training that it first proposed in its December 2004 Controller Workforce Plan. 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. However, FAA never issued this policy.

In addition, FAA has not comprehensively evaluated its facility training program. In its 2004 Controller Workforce Plan, FAA stated 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 for this effort to help reduce the time it takes new controllers to become CPCs. However, FAA never conducted the evaluation.

To its credit, FAA has successfully implemented an important initiative—increasing the use of training simulators at towers. Tower simulators were recently installed at four towers: Chicago O'Hare, Miami, Ontario, and Phoenix. The simulators are 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, and managers of the facilities with simulators are pleased with the results. NASA Ames Research Center conducted an evaluation and found that at the Miami tower, it took 60 percent fewer days for developmental controllers to complete ground control training. Further, at Chicago O'Hare, NASA reported that it took developmental controllers 42 percent fewer days to complete ground control 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.

We are conducting other congressionally requested reviews of related controller issues. At the request of Chairman Costello, we are reviewing controller training failures (developmental and transferring controllers who fail training either at the FAA Academy or at their assigned facility). At the request of Senator Durbin of Illinois, we are reviewing factors that could affect controller fatigue. This issue was identified by the National Transportation Safety Board after the crash of Comair 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.

Oversight of a Dynamic Aviation Environment Requires Strategic Inspector Placement and a Reliable Staffing Model

Safety is FAA's highest priority. FAA and the U.S. aviation industry have experienced one of the safest periods in aviation history. While much of the credit for this impressive safety record is due to safety systems that air carriers have built into their operations, FAA regulations and inspectors play an important role in providing an added layer of safety oversight. This oversight covers a vast network of operators and functions, which make up the largest, most complex aviation system in the world (see table 3 below).

Table 3. FAA Inspectors' Workload

Commercial Air Carriers	118		Flight Instructors	89,396
Repair Stations	4,978		FAA Designee Representatives	11,292
Active Pilots	749,834		Aircraft	319,549
Approved Manufacturers	1,647		FAA-Licensed Mechanics and Repairmen	361,273

Source: FAA

FAA's approximately 4,100 inspectors must oversee both domestic and foreign aspects of these operations. This task is made more difficult by the rapidly changing aviation environment. We see two issues that warrant attention this year: FAA must (1) maximize risk-based oversight programs and (2) develop and implement a reliable staffing model to ensure it has a sufficient number of inspectors where they are most needed.

FAA Needs Effective Oversight Systems To Maximize Inspector Resources

To maximize its limited inspector resources, FAA has been working toward risk-based safety oversight systems for air carriers, repair stations, and manufacturers. These systems target inspector resources to areas of greatest risk.

FAA has worked to move its safety oversight for aircraft repair stations to a risk-based system over the past 2 years. However, FAA's new system does not include a process for overseeing critical repairs performed by non-certificated repair facilities. In December 2005, we reported[14] that FAA must understand the full extent and type of work that is being performed by non-certificated repair facilities. These facilities are not licensed or routinely visited by FAA inspectors but perform critical maintenance, such as engine replacements. FAA's efforts to identify which non-certificated repair facilities perform this type of maintenance for air carriers are still underway.

FAA will also need to modify its risk-based system for manufacturers so that inspectors can more effectively oversee manufacturing operations in today's complex aviation environment. FAA's current oversight system does not take into account the increasingly prominent role that aircraft parts and component suppliers now play in aviation manufacturing. In the past, manufacturers built the majority of their aircraft within their own manufacturing facilities using their own staff. Now, manufacturers use domestic and foreign part suppliers to build large sections of their aircraft. Given

[14] OIG Report Number AV-2006-031, "Review of Air Carriers' Use of Non-Certificated Repair Facilities," December 15, 2005.

these changes, FAA needs to strengthen its system for overseeing aircraft and aircraft part suppliers so that its oversight is effective and relevant.

FAA Needs a Reliable Staffing Model To Strategically Place Inspectors

In addition to targeting inspector resources through risk-based oversight, FAA must have a reliable staffing model on which to base its inspector assignments. FAA has made at least two attempts to develop a staffing model to determine the number of inspectors needed and the best locations for placement. Neither model, however, provided FAA with an effective approach for allocating inspector resources.

Last year, FAA's hiring efforts kept pace with retirements, and the Agency ended the year with 133 additional inspectors over FY 2006 levels. Because of staffing gains in FY 2007 to 2008, FAA's budget request for FY 2009 does not include funding for any additional inspectors over the FY 2008 levels. However, FAA must continue to closely oversee this hiring effort since nearly half of the workforce will be eligible to retire within the next 5 years. FAA will never have an inspection workforce that is large enough to oversee every aspect of aviation operations, but it must develop a reliable staffing model in order to effectively use its inspector resources.

At the direction of Congress, the National Research Council evaluated FAA's current methods for allocating inspector resources in September 2006. This study reported similar concerns that we identified in past reports—that FAA's current method of allocating inspectors is antiquated and must be redesigned to effectively target inspectors to those areas of higher risk. The Council also reported that the changing U.S. and global aviation environments will be key drivers of future inspector staffing needs. For example, airlines' outsourcing of aircraft maintenance, FAA's shift to a system safety oversight approach, and safety inspectors' attrition and retirement are all important factors that must be considered in determining staffing needs.

It has been over a year since the Council study, and FAA is still in the early stages of developing a new staffing method. FAA has established an interim target date to assess current staffing methods and begin identifying the elements of the next generation staffing tool by September 2008. FAA recently finalized milestones to develop and implement the new model and plans to begin using it by October 2009. Making measurable progress toward a new staffing model is a key watch item, and we will continue to monitor this important initiative.

ESTABLISHING FUNDING LEVELS FOR AIRPORTS

Airport Improvement Program

FAA is requesting $2.75 billion for the AIP in FY 2009. Because Vision 100 expired at the end of FY 2007, and a long term reauthorization is not yet in place, funding targets do not exist for FY 2008 and beyond. The FY 2009 request is again a substantial reduction from the FY 2007 authorized level in Vision 100. Congress is now faced with the challenge of determining AIP funding levels for FY 2009.

The AIP supports the airport system by providing funds to primarily enhance safety and security, maintain the infrastructure, increase capacity, and mitigate airport noise in surrounding communities. AIP authorized funding has steadily increased over the last 9 years. Since 2001, the AIP has been authorized at $3.2 billion or higher each year. The House passed the FAA Reauthorization Act of 2007,[15] which would have provided from $3.8 billion to $4.1 billion per year for FY 2008 through FY 2011. The FY 2007 and FY 2008 budget request for AIP funding were also $2.75 billion—nearly $1 billion less than authorized under Vision 100 for FY 2007. However, Congress has provided FAA with $3.5 billion in AIP funding each year since FY 2005.

Aviation congestion continues to be a top priority for the Secretary. However, it is increasingly difficult for airports and FAA to meet this challenge with no AIP authorization. The Omnibus Appropriations Bill, which funded the FAA in FY 2008, provided an appropriation for the AIP account but did not extend the AIP contract or obligation authority beyond December 31, 2007. As a result, FAA no longer has the contract authority to issue new AIP grants, although it can fund previously issued grants. According to FAA, it is using excess funds on existing grants to cover its operating costs until a temporary or final reauthorization is passed. However, the current authority to expend money from the Trust Fund expires at the end of this month.

The uncertainty of future AIP grant authority makes it difficult for the Nation's airports to determine when, or if, they will receive their AIP grants. Smaller airports are more vulnerable because they have fewer revenue sources than large airports. Many smaller airports must suspend projects until they are assured of AIP grant funds. Lengthy delays in the release of AIP grants could prevent airports from taking full advantage of the construction season and delay important safety and capacity projects that could reduce congestion in the busy travel season ahead.

With growing demands for airport improvement projects and potentially less AIP funding available, AIP funds must be directed to the Nation's highest priority projects

[15] H. Rep. No. 2881 (2007).

while meeting the unique needs of small airports. Our recent audit on the AIP[16] found that FAA policies and procedures, for the most part, ensure that high priority projects are funded with AIP funds. We also found, however, that AIP Military Airport Program set-asides (MAP) can provide funds for low priority projects at an airport that meets set-aside program requirements while higher priority projects at other airports could go unfunded.

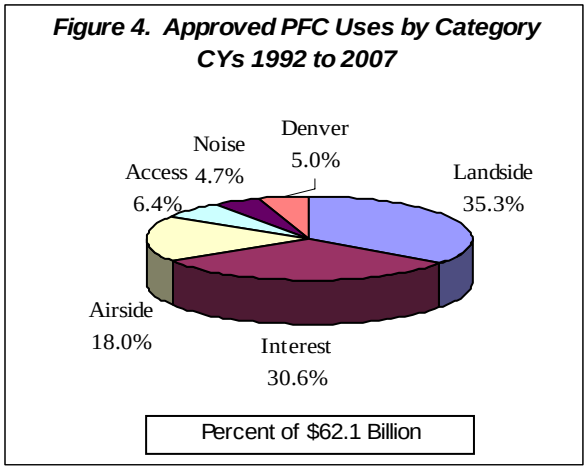
We recommend that FAA monitor and track MAP projects to ensure that the MAP is achieving its intended goal to enhance capacity and reduce congestion in metropolitan areas. When MAP projects do not meet this goal, FAA should re-direct the funding toward other projects at MAP airports that could potentially enhance capacity and reduce congestion in metropolitan areas or projects that enhance the overall National Airspace System. These include runway extensions, runway rehabilitations, or other safety or capacity projects.

Passenger Facility Charges

In addition to AIP funds, passenger facility charges (PFC) have become an important funding mechanism for airports. Between 1992 and 2007, FAA approved the collection of $62.1 billion in PFCs. Of this amount, airports have collected approximately $24.7 billion, with another $2.7 billion anticipated for 2008. In comparison, airports received about $38.7 billion in AIP grants between 1992 and 2007, with FAA requesting another $2.75 billion for 2009.

Overall, airports anticipate using 35.3 percent of PFC collections to finance landside projects (e.g., terminals, security, and land), another 30.6 percent for bond interest payments, 18 percent for airside projects (e.g., runways, taxiways, and equipment), 6.4 percent for access roadways, 4.7 percent for noise abatement, and 5.0 percent for the Denver International Airport (see figure 4).[17]

Figure 4. Approved PFC Uses by Category CYs 1992 to 2007



Currently, PFCs are capped at $4.50 per segment of flight (a maximum of $18.00 on a round trip). The current cap on PFCs is an important matter for this Subcommittee and has significant implications for major airports' capital expenditure plans. Over 77 percent (285 of 370) of the airports are approved to collect the maximum PFC charge. The current cap has led some airports to collect

[16] OIG Report Number AV-2008-002, "Prioritization of Airport Improvement Program Funding," October 26, 2007.
[17] FAA tracks Denver's PFC separately due to its large size and because it was used to fund the new airport, not specific projects.

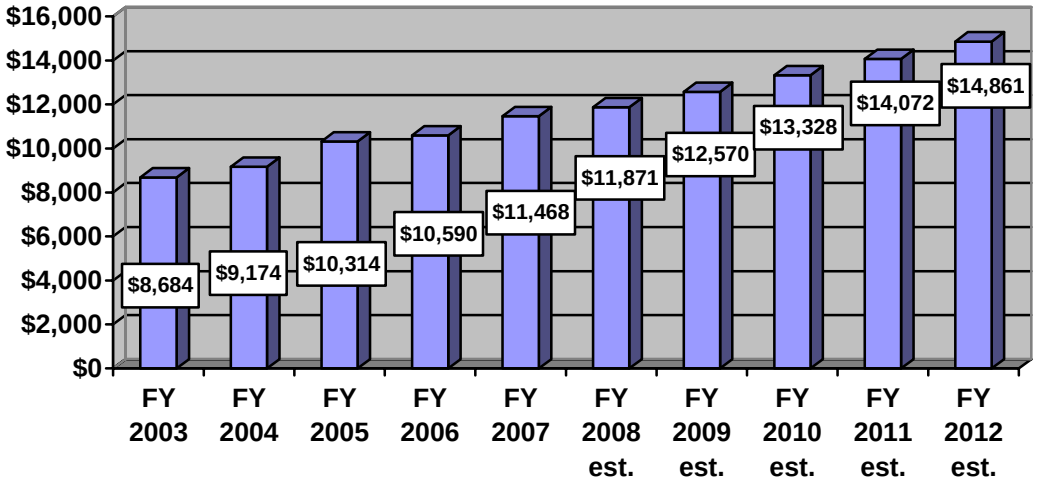
PFCs for extremely long periods of time to cover the cost of their projects. These include: Bentonville, Arkansas (41 years); Miami, Florida (35 years); Denver, Colorado (34 years); and Raleigh, North Carolina (29 years). Moreover, based on 2007 data, 48 percent of airports collecting PFCs have set collection periods of longer than 10 years. Other airports, such as Chicago O'Hare International Airport, anticipate future increases in the cap as part of their financing plans.

The FAA Reauthorization Act of 2007, as passed by the House, increases the PFC ceiling to $7.00 from the current limit of $4.50 per trip segment. Airport associations support this increase in the PFC ceiling. However, one airline association has stated its concern that approval for airport improvement projects, especially those funded through the PFC program, does not provide airlines with a meaningful role in those critical decisions. Determining how future airport projects are funded and what the levels of AIP funding and PFC charges should be are important issues as the Congress decides how best to finance FAA.

That concludes my statement, Mr. Chairman. I would be happy to address any questions you or other Members of the Subcommittee may have.

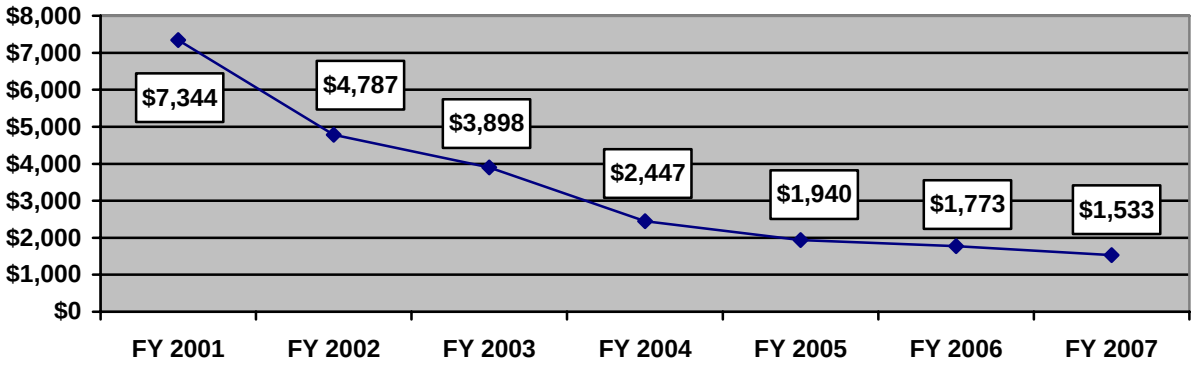
EXHIBIT.

Figure 5. Airport and Airway Trust Fund Tax Revenues FY 2003 to FY 2012
($ in Millions)



Source: FAA

Figure 6. Airport and Airway Trust Fund Uncommitted Balance, FY 2001 to FY 2007
($ in Millions)



Source: FAA

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

FAA's Fiscal Year 2009 Budget Request: Key Issues Facing the Agency

Section 508 Compliant Presentation

Table 1. FAA Budget FY 2007 Through FY 2009

- For FAA's Operations Account: The FY 2007 enacted amount was $8,374,000,000. The FY 2008 enacted amount was $8,740,000,000. The FY 2009 budget request is $8,998,000,000.

- For FAA's Facilities and Equipment Account: The FY 2007 enacted amount was $2,518,000,000. The FY 2008 enacted amount was $2,514,000,000. The FY 2009 budget request is $2,724,000,000.

- For FAA's Airport Improvement Program Account: The FY 2007 enacted amount was $3,515,000,000. The FY 2008 enacted amount was $3,515,000,000. The FY 2009 budget request is $2,750,000,000.

- For FAA's Research, Engineering, and Development Account: The FY 2007 enacted amount was $130,000,000. The FY 2008 enacted amount was $147,000,000. The FY 2009 budget request is $171,000,000.

- The totals for all four accounts are as follows: The FY 2007 enacted amount was $14,537,000,000. The FY 2008 enacted amount was $14,915,000,000. The FY 2009 budget request is $14,643,000,000.

(Note: Figures may not add up exactly due to rounding.)

Source: FAA's FY 2009 Budget Request

Figure 1. Facilities and Equipment Funding, FY 2003 to FY 2009

Fiscal Year	Amount
FY 2003	$2,959,380,000
FY 2004	$2,892,790,000
FY 2005	$2,524,820,000
FY 2006	$2,555,200,000
FY 2007	$2,503,000,000
FY 2008	$2,461,570,000
FY 2008 (enacted)	$2,513,610,000
FY 2009 (requested)	$2,723,510,000

Source: FAA

Figure 2. Breakout of FAA's Capital Budget, FY 2003 to FY 2007

Budget Item	Percentage
Air Traffic Control Modernization	52 percent
Facilities	15 percent
Mission Support	17 percent
Personnel	16 percent

Source: FAA

Figure 3. Controller Attrition and Hiring Projected versus Actual, FY 2005 to FY 2007

- For this period, projected controller attrition was 2,683. Actual controller attrition was 3,300.

- For this period, projected controller hiring was 2,751. Actual controller hiring was 3,450.

Source: FAA

Table 2. Total Controller Workforce Composition

- In April 2004, there were 12,328 Certified Professional Controllers and 2,209 Controllers-in-Training. The total number of controllers was 14,537.

- In September 2007, there were 11,151 Certified Professional Controllers and 3,386 Controllers-in-Training. The total number of controllers was 14,537. (Note: This number does not include new hires in training at the FAA Academy.)

- The number of Certified Professional Controllers in September 2007 was reduced by 1,177 compared to April 2004. The number of Controllers-In-Training in September 2007 was increased by 1,177 compared to April 2004.

(Note: Controllers-In-Training include newly hired or developmental controllers and transferred Certified Professional Controllers who are in training at new locations.)

Source: FAA

Table 3. FAA Inspectors' Workload

Commercial Air Carriers	118	Flight Instructors	89,396
Repair Stations	4,978	FAA Designee Representatives	11,292
Active Pilots	749,834	Aircraft	319,549
Approved Manufacturers	1,647	FAA-Licensed Mechanics and Repairmen	361,273

Source: FAA

Figure 4. Approved Passenger Facility Charge Uses by Category Calendar Year 1992 to 2007

Access Roadways	6.4 percent
Airside Projects	18.0 percent
Denver Airport	5.0 percent
Interest Payments	30.6 percent
Landside Projects	35.3 percent
Noise Abatement	4.7 percent

Note: Table figures show percent of $62.1 billion approved.
Source: Office of Inspector General analysis of Federal Aviation Administration data

Figure 5. Airport and Airway Trust Fund Tax Revenues, FY 2003 to FY 2012

Fiscal Year	Revenue Amount
FY 2003	$8,684,000,000
FY 2004	$9,174,000,000
FY 2005	$10,314,000,000
FY 2006	$10,590,000,000
FY 2007	$11,468,000,000
FY 2008 (estimated)	$11,871,000,000
FY 2009 (estimated)	$12,570,000,000
FY 2010 (estimated)	$13,328,000,000
FY 2011 (estimated)	$14,072,000,000
FY 2012 (estimated)	$14,861,000,000

Source: FAA

Figure 6. Airport and Airway Trust Fund Uncommitted Balance, FY 2001 to FY 2007

Fiscal Year	Uncommitted Balance
FY 2001	$7,344,000,000
FY 2002	$4,787,000,000
FY 2003	$3,898,000,000
FY 2004	$2,447,000,000
FY 2005	$1,940,000,000
FY 2006	$1,773,000,000
FY 2007	$1,533,000,000

Source: FAA