
Office of Inspector General

*Modernizing the Federal Aviation
Administration: Challenges and Solutions*

Report Number: AV-2000-039

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U.S. Department of
Transportation
Office of the Secretary
of Transportation
Office of Inspector General

Memorandum

Subject: **ACTION**: Modernizing the Federal Aviation
Administration: Challenges and Solutions
Report No. AV-2000-039

Date: February 17, 2000

From: Alexis M. Stefani
Assistant Inspector General for Auditing

Reply To
Attn Of: JA-10:x60500

To: Federal Aviation Administrator

On February 3, 2000, at a joint hearing of the Committee on the Budget and the Subcommittee on Transportation and Related Agencies, Committee on Appropriations, U.S. Senate, we provided testimony on modernizing the Federal Aviation Administration (FAA). Our testimony focused on three issues - proposals for restructuring FAA, acquisition and personnel reforms, and financing FAA. A copy of our statement is attached for your information.

There have been several proposals to increase the amount of funds available for FAA operations and air traffic control modernization efforts. While there are investment opportunities, additional funding alone will not get the desired results. To make sound financial and managerial decisions, FAA should accelerate the implementation schedule for its cost accounting system. FAA originally planned for its cost accounting system to be fully implemented by October 1, 1998. Earlier this year, FAA estimated its system would be fully implemented by September 30, 2001. However, FAA recently delayed the completion schedule until sometime in Fiscal Year 2002 because of funding constraints. FAA needs a reliable cost accounting system sooner, not later.

In addition to a cost accounting system, FAA needs a strategic business plan that provides key corporate strategies and operating plans to control costs. Lastly, to offset increased costs which resulted from the 1998 collective bargaining and compensation agreement with the controllers, FAA should identify, quantify, and implement productivity gains included in that agreement.

Accordingly, we recommend that FAA:

1. Reverse its decision to delay the completion of its cost accounting system and accelerate the implementation schedule for this system.

2. Develop a strategic business plan to provide key corporate strategies and operating plans over the next several years, and describe the timing and impact of those strategies. This plan should outline agency strategies for investing in future technologies, as well as how the agency will control the rising costs of operations.
3. Identify, quantify, and implement productivity gains included in the 1998 collective bargaining and compensation agreement with air traffic controllers.

In accordance with Department of Transportation Order 8000.1C, we would appreciate receiving your written comments within 30 days. If you concur with our findings and recommendations, please indicate for each recommendation the specific action taken or planned and target dates for completion. If you do not concur, please provide your rationale. Furthermore, you may provide alternate courses of action that you believe would resolve the issues presented in this report.

We appreciate the courtesies and cooperation extended by your staff. If you have any questions or need further information, please contact me at 366-1992 or David A. Dobbs, Deputy Assistant Inspector General for Aviation, at 366-0500.

Attachment

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Mr. Chairmen and Members of the Full Committee and Subcommittee:

We appreciate the opportunity to discuss “Modernizing the Federal Aviation Administration: Challenges and Solutions.”

FAA oversees the largest, busiest, and safest air transportation system in the world. FAA also is responsible for operating air traffic control, which is the nerve center of the Nation’s air transportation system. Until Monday night, the safety record for the last two years was remarkable. This is a credit to FAA and all segments of the aviation community. At the same time, FAA and the aviation community are facing a number of challenges. The demand for air travel has doubled since 1980 and is expected to continue to grow through 2015. Unfortunately, with the growth in demand has come growth in delays, and consumer dissatisfaction with airline service is high. In the last 5 years, delays have increased by over 50 percent.

Against this backdrop, FAA’s air traffic control modernization efforts and airport capacity have not kept pace with the demand for air travel. These are legitimate concerns and they are not new. Congressional hearings dating back to the mid-1980’s focused on the same subjects. As there were then, there are now proposals to restructure FAA’s air traffic functions to perform more like a commercial business and to provide additional funding for air traffic control modernization and airport improvement programs.

Today, I would like to make three points.

First, there is no air traffic system in the world as large and complex as that of the United States. It is safe, but actions are needed to make it more efficient. Any proposal to restructure FAA or have air traffic control run by a commercial type organization must be carefully examined. Furthermore, the oversight of aviation safety should not be transferred outside the Department of Transportation. This is an inherently governmental function for which the traveling public deserves the highest level of independent scrutiny and assurances.

If the Congress should choose to make any major changes to FAA’s structure or commercialize air traffic control services, we would urge great caution. Having first-hand experience in a limited air traffic control environment is essential before any expansive changes are considered. FAA’s oceanic air traffic control could provide this experience. Oceanic services are operationally distinct from domestic services and there would be limited impact on small carriers, general aviation, and air taxis. It is an area where the United States could solicit lessons learned from other countries that have already taken steps to commercialize air traffic control operations.

Second, Congress has already provided FAA with the tools necessary to modernize the National Airspace System and obtain the necessary skills to operate effectively.

In 1995, Congress exempted FAA from Federal procurement and personnel rules. After 4 years, there has been some progress, but overall, these reforms have had limited impact on bottom line results.

To its credit, FAA has adopted a “build a little, test a little” approach to its acquisitions and has made progress in reducing the time to award contracts under acquisition reform. In addition, FAA has deployed systems such as the Display System Replacement (new color displays for en route controllers) on time and within budget. However, cost and schedule problems persist with key modernization projects, such as efforts to install new computer systems in the terminal environment and move toward satellite-based navigation.

FAA has also had some success with personnel reform in that managers have been able to hire qualified candidates faster than under the Federal personnel system. By far, however, the most visible result of personnel reform to date has been the new compensation agreement with its controllers, which has improved management-labor relations. However, this agreement also has led to sharp increases in the agency’s operations costs, principally salaries, which now constrain funding for air traffic control modernization and airport development. It is a fact that the United States invested more in Fiscal Year (FY) 1992 in modernization than it will in FY 2000. But at the same time, operations costs increased almost 40 percent from \$4.4 billion to an estimated \$6.0 billion.

Exemptions from Federal rules may facilitate success, but management accountability, strong contractor oversight, effective cost controls, and a sound cost accounting system are the essential ingredients to modernize and effectively manage the air traffic control system.

Finally, several proposals have surfaced over the past year to finance FAA, all of which had one common thread -- to increase the amount of funds available for FAA operations and air traffic control modernization efforts. Based on FAA's estimates, by 2004 its total budget requirements will be over \$12 billion or 20 percent greater than in FY 2000. FAA faces significant risks in meeting its operations costs (primarily salaries) without crowding out capital investments. The means for financing these requirements is a major issue that the Department, Congress, and aviation users continue to debate.

There are investment opportunities that will significantly decrease airline costs, provide better and safer service to the flying public, and reduce FAA’s operating costs. These include data link communications, collaborative decision-making systems, and efforts to reduce runway incursions, a major area of safety risk, but additional funding alone will not get the desired results. For example, FAA must control its operating costs, do a better job of negotiating contracts for large

software-intensive efforts that include appropriate measures to withhold payments if progress is not satisfactory, and implement a sound cost accounting system.

FAA originally planned for its cost accounting system to be fully implemented by October 1, 1998, but has yet to implement the system. FAA recently delayed the completion schedule until some time in FY 2002 because of Operations funding constraints. This decision should be reversed. FAA needs a reliable cost accounting system sooner, not later. Any business that fails to track and control its costs would most likely go into bankruptcy.

In addition to implementing a cost accounting system, FAA needs to develop a strategic business plan -- a key tool for any successful business. The plan should provide key corporate strategies and operating plans over the next several years, and describe the timing and impact of those strategies. The plan should outline agency strategies for investing in future technologies, as well as how the agency will control the rising costs of operations and bring about productivity enhancements.

Restructuring FAA

There are a number of proposals under discussion regarding restructuring FAA to operate and perform more like a business. However, we want to make clear that there are no circumstances we can envision in which the Department of Transportation's role in oversight of aviation safety should be transferred outside the Federal Government. Safety oversight is an inherently governmental function for which the citizens of the country expect and deserve the highest level of independent scrutiny and assurances. But this does not mean we should not try to find ways to deliver air traffic control services and implement new technologies more efficiently and effectively. However, in light of the size, complexity, and safety record of FAA, any proposal to restructure or have air traffic control run by a commercial type organization must be very carefully examined.

There are primarily three concerns with proposals that would spin off air traffic control (ATC), air traffic controllers, and ATC infrastructure development and investment to a commercial enterprise, while simultaneously retaining safety oversight within FAA. These concerns include: (1) how a commercial enterprise would balance safety against costs and ensure that decisions come down on the side of safety; (2) whether a commercial enterprise would have the incentive to initiate research and development in cutting-edge technologies; and (3) whether a commercial operation could adequately protect and respond to the needs of all stakeholders, including passengers, in our diverse aviation system. FAA's stakeholders include over 194,000 general aviation aircraft, more than 5,000 public use airports, and over 12,000 small carriers and air taxis.

Numerous other countries, including Canada, Germany, Australia, and New Zealand, have assigned their ATC system, once provided by government, to entities having administrative and often financial autonomy. Canada transferred its civil air navigation services to NAV CANADA in November 1996, and some have cited it as a role model for FAA to follow. We greatly appreciate the information NAV CANADA has shared with us on their experiences in commercializing air traffic services. The experiences of NAV CANADA and other countries are instructive, but it is difficult to use their experiences as a conclusive point of reference because our air traffic control system is so much larger, diverse, and complex. Several differences are shown on the following chart.

Comparison of Attributes for FAA Air Traffic Services and NAV CANADA

Attributes	FAA Air Traffic Services	NAV CANADA	Percent of NAV CANADA to FAA Air Traffic Services
1998 Traffic Activity (En route) ¹	43,700,000	3,600,000	8%
1998 Traffic Activity (Towers) ²	53,800,000	5,300,000	10%
Domestic Customers ³	6,651	1,300	20%
Air Traffic Facilities ⁴	575	190	33%
Public Airports	5,324	1,254	24%
General Aviation Aircraft	194,800	15,000	8%
Staffing	36,400	5,200	14%
FY 1999 Funding ⁵	\$6.4 billion	\$568 million	9%

Notes:

1. En route traffic activity includes all aircraft handled by Center controllers.
2. Tower traffic activity includes take-offs and landings.
3. Domestic Customers include commercial air carriers, commuters, air taxis, and flight schools.
4. Air traffic facilities include Centers, Towers, Contract Towers, Flight Service Stations, and Approach Control Facilities.
5. Figures in U.S. Dollars. Fiscal Year 1999 figures for FAA Air Traffic Services include Air Traffic Services' Operations, FAA's Facilities & Equipment, and FAA's Research & Acquisitions' Operations. This excludes funding for other FAA lines of business such as aviation regulation and certification, and aviation security.

In the area of research and development, NAV CANADA officials told us that they avoid large research and development initiatives in favor of acquisitions that can return their investment in a shorter period of time. NAV CANADA is relying on FAA for key emerging technologies, including satellite-based navigation systems and a new automated controller tool called the Center TRACON Automation System that provides controllers with sequences for landing aircraft.

Although relatively small in comparison to FAA, NAV CANADA has made progress in developing new technologies for **oceanic** air traffic and eliminating the use of

paper flight strips for controlling aircraft at some domestic facilities. NAV CANADA's oceanic development efforts include aircraft surveillance and data link communications that are planned to be in use this fall. A similar effort for oceanic air traffic control in the United States -- the Oceanic System Development and Support contract -- was significantly reduced, largely due to technical and contractor performance issues, not a lack of funding. With regard to paper flight strips, FAA was unable to eliminate them in its domestic airspace because of controller concerns.

Because there is no frame of reference or experience base comparable to our ATC system that we can rely on for guidance, we urge great caution before proposing a major restructuring of what is already a very safe system, but a system also in need of improvement. In our opinion, the first course of action would be to implement a sound cost accounting system and effectively utilize the procurement and personnel reforms Congress has already given FAA. Secondly, if Congress decides to move toward commercialization, it must be done gradually in order to gain first-hand experience, and in a limited ATC environment, such as oceanic air traffic control in the Atlantic and the Pacific Oceans. The traffic load and mix handled by the United States oceanic environment is comparable in some important respects to that handled by some commercialized ATC enterprises, such as NAV CANADA and Airservices Australia.

By proceeding in this manner, Congress and the aviation community would be able to judge what works well and what does not, identify refinements that need to be made, and assess whether a commercialized ATC organization should or should not be considered for broader application in the United States.

Oceanic Air Traffic Control

The International Civil Aviation Organization (ICAO) delegated to the United States responsibility for providing ATC services in over 80 percent of the world's controlled oceanic airspace. There are labor, governance, financing, and transition issues that would have to be addressed if our oceanic ATC were to be operated by a commercial organization, but these issues are easier to resolve because the oceanic ATC environment is limited in scope. The commercialization of oceanic ATC would not be free from controversy; however, the issues involved are not nearly as complex or contentious as would be the case in the domestic ATC environment.

Attributes of FAA's Oceanic Air Traffic Control

- Mostly affects the large carriers who are suggesting commercializing or privatizing ATC
- Operationally distinct from domestic ATC services
- Major ATC modernization and avionics standardization opportunities -- FAA's schedules have slipped, modernization solution is not settled, and financing decisions have not been made
- Oceanic ATC operations projected to increase 5.4% annually
- Greater acceptance of user fees -- Congress has already approved the collection of overflight fees, and other countries already collect fees for oceanic services
- Limited impact on controllers and labor agreements -- only 300 of FAA's 14,900 controllers provide oceanic services
- Little impact on private (non-business) general aviation, small carriers, regional airlines, and air taxis

Acquisition and Personnel Reforms

In October 1995, Congress exempted FAA from the Federal procurement and personnel rules that FAA said hindered its ability to effectively modernize the air traffic system and acquire the staff and skills it needed to operate effectively. After 4 years, there has been some progress and FAA learned valuable lessons from its experience with the Advanced Automation System (the centerpiece of FAA modernization efforts in the late 1980's and early 1990's), but overall, these reforms have had limited impact on bottom line results.

At about the time these reforms were enacted, the Office of Inspector General, the General Accounting Office and others cautioned that neither procurement and personnel rules nor lack of funding were the source of the problems FAA was experiencing with its ATC modernization initiatives. Exemptions from Federal rules may facilitate success, but exemptions and additional funding are not substitutes for strong management, including oversight of contractors, effective cost controls, and a sound cost accounting system. We find that FAA still has much work to do in these management areas, so we reiterate these cautionary notes today.

Acquisition Reform

The driving forces behind granting FAA relief from acquisition rules and regulations were escalating costs and schedule slips with FAA's air traffic control modernization efforts. Between 1992 and 1994 alone, the overall estimated costs of the

modernization effort increased annually by about \$1.2 billion due in large part to problems with key projects. For example, the expected cost of FAA's Advanced Automation System (AAS) had increased from \$4.8 billion to over \$7 billion with key segments behind schedule by more than 8 years. Of the \$2.6 billion spent on AAS before it was restructured in 1994, about \$1.5 billion could not be salvaged for use in other modernization projects.

Since the advent of acquisition reform, problems with major acquisitions have been less severe, but major benefits have yet to be realized. To its credit, FAA has adopted a "build a little, test a little" approach to its acquisitions and has made progress in reducing the time to award contracts. FAA has deployed systems, such as the Display System Replacement (new en route controller displays) and the HOST (computers that receive, process, and track aircraft movement throughout the domestic en route and oceanic airspace), on time and within budget. Also, long-range surveillance radars, as well as Terminal Doppler Weather Radar that detects hazardous weather around airports, have been fielded. In the past, these systems experienced significant cost and schedule problems.

However, problems persist with technologically challenging systems, such as the Wide Area Augmentation System (WAAS), Standard Terminal Automation Replacement System (STARS), and Airport Movement Area Safety System (AMASS). WAAS is a satellite-based navigation system; STARS is a replacement

that will provide new color displays, processors, and computer software for terminal facilities; and AMASS is a key safety technology designed to help controllers prevent accidents on airport runways. These three systems alone have cumulative program costs of over \$4 billion, and are experiencing cost and schedule difficulties.

**Cost and Schedule Variances
in Key FAA Modernization Programs**

Program	Estimated Total Program Cost		Scheduled Operations*	
	Original (in Millions)	Current (in Millions)	Original	Current
WAAS	\$892.4	\$2,900.0	1998	2000
STARS	\$940.2	\$1,400.0	1998	2002
AMASS	\$59.8	\$151.8	1996	2002

*Note: The scheduled operation date for WAAS represents Phase-1 Initial Operating Capability, for STARS represents first full service Operational Readiness Demonstration, and for AMASS represents last System Operational Readiness Demonstration.

The problems with these acquisitions are not the result of a lack of funding or the result of burdensome procurement and personnel rules. What all these systems have in common are difficulties with software development and human factors. For example, WAAS has experienced development difficulty in a critical software safety package that, among other things, determines the effects of the ionosphere on the WAAS signal and the validity of the WAAS message. The STARS schedule has been impacted by the software development needed to resolve computer-human interface issues and other new requirements. As a result of these problems, schedules have proven to be unrealistic and costs have increased.

FAA has taken steps to address problems with WAAS, STARS, and AMASS but only after major problems have surfaced. FAA can do more to protect the Government, make contractors more accountable, and address human factors issues earlier in the development and acquisition processes.

Our recent work on Free Flight Phase 1 -- an initiative to introduce new automated controller tools and new information systems for FAA and airlines -- shows the need to enhance contractor accountability and institute cost control mechanisms for software-intensive contracts. For example, two contracts for a software-intensive controller tool are time and material contracts. With these types of contracts, there is little positive incentive for cost control or labor efficiency -- all risk is with the Government. FAA should negotiate contracts for software development with appropriate measures (cost ceilings, incentives, and earned value management techniques¹) as well as methods for withholding payment if progress is not satisfactory.

In addition, FAA needs to identify and resolve human factors concerns early in the acquisition process to avoid cost overruns and schedule delays. The need for human factors work extends beyond the traditional computer-human interface issues for FAA systems, such as STARS, and has important safety and workforce implications. Key

¹ Earned Value Management is a widely recognized way to measure technical progress with large scale, software intensive acquisitions. This management tool forecasts how much a program will cost and when it will be delivered.

issues that require FAA's attention include the impacts on the selection and training of controllers as a result of new automated controller tools as well as the impacts on pilots from new data link communications and cockpit display technologies.

Key emerging technologies, such as data link communications for controllers and pilots, new automated controller tools, and new cockpit display technologies have far-reaching human factors implications. In addition to resolving these issues, a key management issue for FAA is to know when "enough is enough" with respect to human factors. FAA cannot satisfy everyone, and exit criteria is needed to make the tough decisions. In our opinion, without exit criteria, FAA's costs to resolve human factors issues in the STARS Program will continue to increase.

In fairness to FAA, we must recognize that the development of new technologies, particularly those involving complex software and new aircraft avionics, involve research and development risks for which the United States bears much of the cost. Many of the firms developing these systems for FAA rank among the most technologically sophisticated in the world. Once developed, this technology is considered "off the shelf" and can be sold at a fraction of the costs to other ATC providers.

Personnel Reform

Personnel reform was designed to provide greater flexibility in hiring, training, compensating, and placing employees. FAA has had some success in that managers have been able to hire qualified candidates faster than they could under the Federal personnel system. But, by far, the most visible result of personnel reform to date is a 5-year collective bargaining and compensation agreement reached with the controllers in 1998.

This agreement has markedly improved management-labor relations with the controllers, contains assurances of productivity gains in the future, and establishes a ceiling of 15,000 air traffic controllers. However, the price tag for this agreement is large, resulting in a sharp increase in the agency's costs of operations. FAA now faces significant risks in funding the new controller pay system while, at the same time, meeting other critical agency requirements funded by the Operations account, such as hiring safety inspectors and developing a cost accounting system. These risks are compounded as FAA negotiates new wage agreements with its other workforces, such as maintenance technicians, who want similar treatment.

The costs associated with the new system are consequential from several points of view -- the impact on a controller's wages; continued increases in the portion of the agency's total budget that goes to the Operations account, comprised mostly of

salaries; and the effects of the agreement on FAA's capacity to increase investment in ATC modernization.

First, to illustrate the effect on an individual controller's wages, we looked at controller compensation before and after the agreement. Prior to October 1, 1998, the effective date of the new compensation package, air traffic controllers in the busiest facilities earned a base salary of up to \$86,000. With the new compensation system, these controllers received a pay increase as high as 20 percent in base pay distributed over 3 years *plus* the annual Government cost of living increases. Currently, those air traffic controllers assigned to FAA's busiest air traffic facilities can earn about \$111,000 before any premium pay is earned. When premium pay such as holiday, locality, and overtime are added, some of these controllers earn over \$142,000 annually. By October of this year, they will earn over \$147,000.

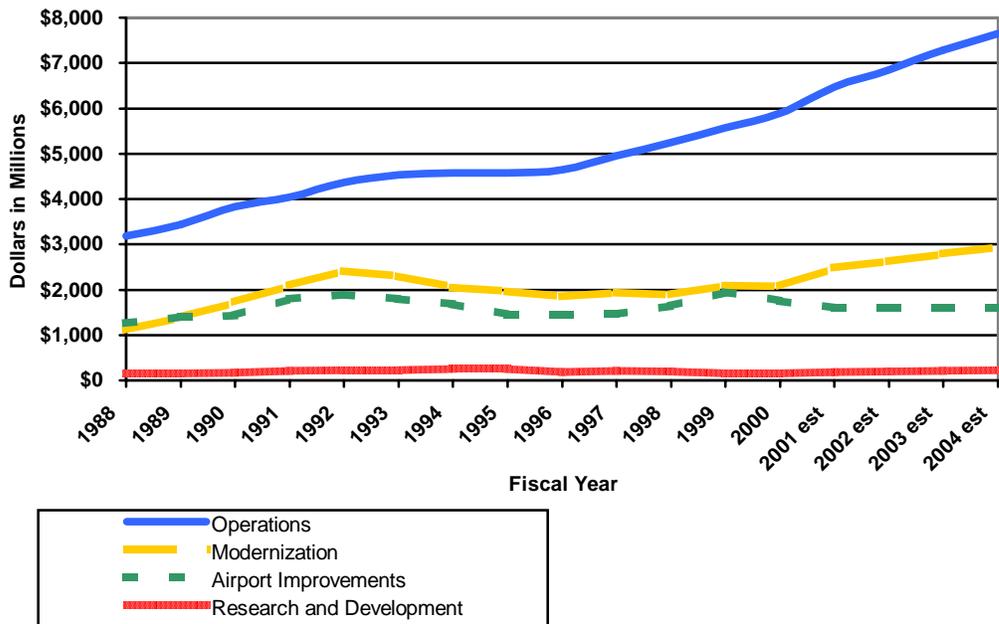
FAA estimates that its new compensation system will require nearly \$1 billion in additional funding over the 5-year life of the new agreement. This additional cost takes into account anticipated savings from a gradual reduction in the number of air traffic supervisors.

Second, to illustrate the effect of the agreement on operations costs and capital investments in modernization, it is important to recognize that FAA's operations costs have been rising since 1992, with significant increases in the last 3 years. *In fact, the*

United States invested more in FY 1992 in modernization than it did in FY 2000 (\$2.4 billion in 1992 vs. \$2.1 billion in 2000). But at the same time, the United States spent \$4.4 billion on operations (mostly salaries) in FY 1992, compared to an estimated \$6.0 billion in FY 2000. This trend shows no sign of abating.

The chart below illustrates increases in the cost of FAA operations, principally salaries, and the increasing disparity between the cost of operations (blue line) and the dollars available for modernization (yellow line). The chart shows why the increasing costs of FAA's operations must be contained.

**FAA's Budget by Program
(FY 1988-2004)**



FAA believes this problem will be partially mitigated by offsetting productivity gains, such as freezing the staffing level of 15,000 air traffic controllers for 3 years, eliminating 4-day work weeks at 24-hour facilities, and the performance of collateral duties by air traffic controllers. However, over a year after signing the agreement, FAA is still trying to identify and quantify productivity gains.

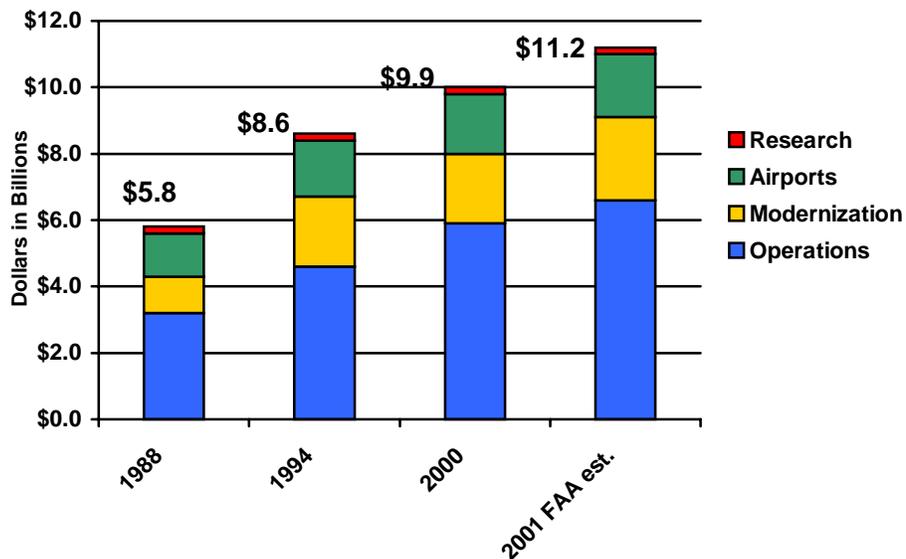
Last year, we recommended that FAA project the productivity offsets over the life of the agreement to better manage its future funding requirements. FAA did not agree, stating that a 5-year estimate would be speculative at best, relying too much on estimates regarding future aviation activity. In our opinion, it is not unreasonable to expect FAA to anticipate and plan for the costs associated with multi-year commitments. FAA needs to forecast and monitor projected revenues, savings, and productivity gains.

FINANCING FAA

Several proposals have surfaced over the past several years to finance FAA, all of which had one common thread—to increase the amount of funds available for FAA operations and air traffic control modernization efforts. While there are investment opportunities, additional funding alone will not improve FAA. There is a need for strong management controls, greater risk sharing with contractors, and a cost accounting system.

FAA's budget has increased nearly 73 percent from FY 1988 to FY 2000. Based on FAA's estimates, by 2004 its total budget requirements will be over \$12 billion or 20 percent greater than FY 2000. The means for financing these requirements is a major issue that the Department, Congress, and aviation users continue to debate.

**FAA's Budget by Program
(FY 1988-2001)**



FAA faces significant risks in meeting its operations cost increases without crowding out capital investments. As shown in the above chart, growth in the operations portion of FAA's total budget has constrained the funding available for modernization and airports. This occurs in an environment in which FAA's overall budget has continued to increase. Congress will need assurances that any additional funding for FAA will actually translate into capital investment and not be absorbed by FAA's operations.

For FY 2000, FAA was financed entirely from the Aviation Trust Fund. However, this is only a short-term measure because FAA's projected expenditures exceed revenues generated through excise taxes. For example, this year, projected expenditures exceed revenue from taxes by over \$700 million -- this does not include interest earned.

Alternative methods or a mix of methods will therefore be needed to meet all of FAA's requirements. Suggestions include raising aviation taxes so that the Trust Fund receives an adequate infusion of receipts to cover the aviation budget; establishing user fees -- an approach proposed by the Administration; tapping the General Fund, which relies largely on Federal income taxes; and creating a General Fund entitlement for FAA.

The method of financing FAA and the level of increased funding is a policy matter that ultimately is a judgment for the Congress. There are investment opportunities with data link communications, collaborative decision-making systems, and efforts to reduce runway incursions. It would be a disappointment for all if additional funds went to cover cost growth in existing acquisitions or if capital investments could not be made because they were crowded out by the increasing costs of salaries and related expenses. FAA should address three key fiscal issues in managing its current budget as well as any increases it may receive.

- ***First, FAA's operations costs must be contained.*** FAA's budget requirements continue to increase largely due to the rising costs in FAA's Operations account. This account represents 60 percent of FAA's FY 2000 budget and is expected to grow to nearly \$7.6 billion or about 62 percent of FAA's budget by FY 2004.
- ***Second, risks with FAA's modernization efforts need to be shared.*** Contractors share risks with FAA but more can be done, particularly with software intensive acquisitions. This becomes increasingly important as FAA moves forward with several major software-intensive acquisitions, such as WAAS and Free Flight Phase 1 automated controller tools. As we noted earlier, FAA should negotiate contracts with appropriate controls to require contractors to share risks as well as provisions for withholding payments if progress is not satisfactory.
- ***Third, a reliable cost accounting system must be in place.*** FAA needs a cost accounting system to make sound financial and managerial decisions and support user fees. A cost accounting system helps an organization to accurately track and control its costs, which results in better decisions. However, the basic financial data have to be accurate and reliable. In past years, FAA's financial data were not reliable, which is why we have been unable to render a "clean" audit opinion on its financial statements. During FY 1999, FAA made an extraordinary and

labor-intensive effort to produce better financial data. We are currently auditing these data.

FAA is making progress in the development of its cost accounting system. FAA is currently developing the costs for providing its Oceanic and En Route services. FAA also intends to develop user fees, using its cost accounting system, to charge customers for the various services it provides. For example, FAA is currently developing user fees for flights that fly over the United States, but do not take off or land in the United States.

FAA originally planned for its cost accounting system to be fully implemented by October 1, 1998, but implementation is not complete. Earlier this year, FAA estimated its system would be fully implemented by September 30, 2001. However, FAA recently delayed the completion schedule until sometime in FY 2002 because of funding constraints. FAA needs a reliable cost accounting system sooner, not later. FAA should reverse its decision and accelerate the implementation schedule for its cost accounting system.

In addition to implementing a cost accounting system, FAA needs to develop a strategic business plan -- a key tool for any successful business. The plan should provide key corporate strategies and operating plans over the next several years, and describe the timing and impact of those strategies. The plan should outline agency strategies for investing in future technologies, as well as how the agency

will control the rising costs of operations and bring about productivity enhancements.

Mr. Chairmen, this concludes our statement. I would be pleased to answer any questions.