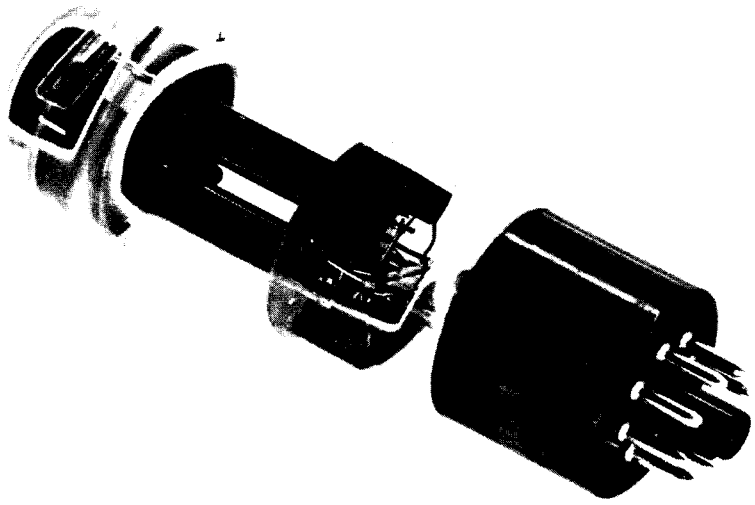
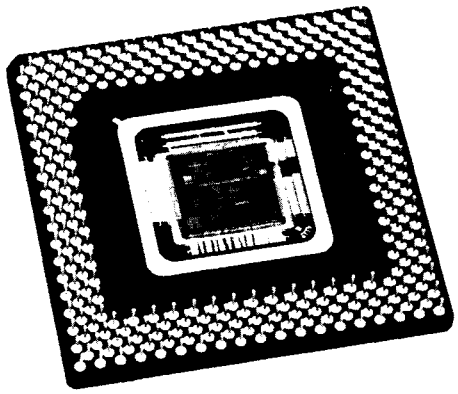


AIR TRAFFIC CONTROL CORPORATION STUDY

Report
of the
Executive Oversight Committee
to the
Secretary of Transportation

May 1994



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

Assistant Secretary

400 Seventh St., S.W.
Washington, D.C. 20590

May 3, 1994

The Honorable Federico Peña
Secretary of Transportation
Washington, D.C. 20590

Dear Mr. Secretary:

I am pleased to present to you the report of the interagency Executive Oversight Committee on the future of the air traffic control (ATC) system.

This report is about change: improving aviation travel. It is also about reinventing government: in the words of the Vice President, "moving from red tape to results to create a government that works better and costs less."

Our nation's ATC system is the busiest in the world. The aviation industry relies on it 24 hours a day, 365 days a year. Every flight by every airline is controlled by the ATC system from the time it pushes back from the gate to the time it arrives at its destination. General aviation, which is vital to the nation's economy, relies heavily on the services of ATC towers, approach control centers and flight service centers. In total, the ATC system regulates the movements of over 60 million commercial and general aviation flights a year, and 474 million passengers. By the year 2005, those numbers are expected to grow to almost 74 million flights and over 740 million passengers.

There is widespread recognition that some reform of the FAA is now called for. After six months of analysis and building on the work and experiences of many others, the EOC has concluded that the problems faced by the ATC system require bold and fundamental changes.

While the report goes into great detail about the problems faced by the U.S. ATC system in the 1990's, a few points are worth highlighting here:

- The FAA's ATC system has failed to keep up with the high-tech aviation industry it serves. Instead, it relies on outdated technology from the 1940's, 1950's and 1960's at many of its facilities. In some cases, replacement parts for this equipment are only made overseas. In others, they are no longer manufactured anywhere. When this equipment breaks down, it is only the perseverance and creativity of dedicated FAA employees that get it up and running again.

- The FAA is the largest and one of the last users of vacuum tubes, which elsewhere have become technological artifacts. Tubes still are used at over 500 ATC sites. Parts from old vacuum tubes have been used to restore burned out tubes to service. Vacuum tube technology was developed at the beginning of this century -- within a couple of years of the Wright brothers' first flight at Kitty Hawk. Its successor, the transistor, was invented in 1947. The successor to transistors, the integrated circuit or microchip, was developed in the late 1950's, and has gone through many generations since then. A modern microchip is the equivalent of over 3 million vacuum tubes.

- The FAA also relies on 1960's UNIVAC mainframe computers that are as big as a truck, but have 1/10 of the computing capacity of today's most basic personal computer. The use of outdated ATC equipment and technology is commonplace. Many air traffic controllers are relying on equipment that was installed before they were born.

These are graphic symptoms of the fundamental problem: the ATC system faces overwhelming obstacles to effective operations. These include 47,200 pages of Federal personnel laws and regulations, and 10,500 pages of procurement laws and regulations. These mountains of red tape get in the way of good management, cause delays, increase costs, and foster a bureaucratic culture that puts filling out forms ahead of getting results. No wonder the thousands of good and dedicated FAA employees feel frustrated and hamstrung, rather than invigorated and encouraged, in their jobs. They deserve better, so they can do better for us all.

The Executive Oversight Committee examined a range of approaches to improving the ATC system. These approaches ranged from making incremental changes within the existing FAA organizational structure to turning the ATC system over to a private company. We evaluated how these alternatives would permit the ATC system to be modernized quickly, how obstacles to its day-to-day operations could be removed, how users and employees could help shape its future and change the organization's culture, and how aviation safety could be enhanced. We also considered these reforms individually, as elements that could be adopted discretely, to provide some measure of improvement in operations. It became clear to us, however, that the whole reform adds up to more than the sum of its parts. Together, they provide the systemic change that will fundamentally improve the environment in which air traffic services are developed, implemented, operated, maintained, and enhanced.

We recommend, therefore, the creation of a United States Air Traffic Services Corporation. This recommendation is consistent with the findings of several independent reports produced over the past decade, and with the positive experience of several other nations that have adopted government ATC corporations. This new corporation will be:

- Wholly owned by the federal government.
- Run by a Board of Directors that includes user and employee representatives, who will have a strong voice in decision-making about the future of the ATC system; and managed by a Chief Executive Officer.
- Not-for-profit.
- Self-sufficient, with revenues earned by charging fees to users of the ATC system.
- Freed from the suffocating bureaucratic procurement and personnel rules that inhibit rapid modernization and sound management.
- Subject to safety regulatory oversight of the FAA.

Safety will remain paramount for two key reasons. First, the rapid introduction of up-to-date technology will improve the safety and efficiency of the system. Second, the FAA will continue to oversee the safety of the ATC system, just as it does today with the airline fleets, crews, and aircraft manufacturers. Congress, likewise, will continue to provide its safety oversight and policy direction.

This report reflects six months of thoughtful, cooperative, and hard work by the members of the Executive Oversight Committee, as well as the staff Task Force and Working Groups who provided the Committee with their analyses and expertise. I thank everyone for the long hours they have devoted to this project and for their commitment to this important endeavor.

We realize, however, that our report is but one step on the road to change. The next step is working with Congress, members of the aviation community, and the public to craft enabling legislation that will take us farther on this journey together.

Sincerely,

Frank E. Kruesi

Frank E. Kruesi
Chair, Executive Oversight Committee

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ABOUT THE FRONT COVER--A JAN6AS7G vacuum tube (slightly smaller than actual size) commissioned in 1946, and still in use in the AN/FPS long-range surveillance radar system is shown above. an Intel Pentium™ microchip is shown below (actual size). The Pentium™ microchip has as much capacity as over three million vacuum tubes.

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4. RECOMMENDED STRUCTURE OF THE U.S. AIR TRAFFIC SERVICES CORPORATION

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INTRODUCTION

The Secretary of Transportation established an Executive Oversight Committee (EOC) to study how the air traffic control (ATC) system could be restructured to make it more businesslike and to resolve long-standing problems in acquisition, budget/finance, and personnel. As noted in Vice President Gore's National Performance Review:

> *American needs one seamless air traffic control system from coast to coast--able to borrow on capital markets, to do long-term financial planning, to buy the equipment it needs when it needs it, and to hire and fire in a reasonable fashion.*[1]

The EOC was made up of senior executives from the Federal Aviation Administration (FAA), the Office of the Secretary of Transportation (OST), several organizations within the Executive Office of the President, three other government agencies and two existing government corporations. A Corporation Assessment Task Force (Task Force), made up of career executives from FAA, DOT, and other government entities, and FAA labor unions, was established to support the EOC. Maintaining the existing high level of ATC safety was the overriding criterion for their work. The EOC and Task Force directed research into the following areas:

- Review of prior studies on the need for restructuring the ATC system;

[1]Vice President Gore "Report of the National Performance Review--Creating a Government That Works Better & Costs Less" (September, 1993), p61.

- The success of other U.S. government corporations in resolving organizational problems similar to those of the ATC system;
- The experience in other countries that have restructured the provision of ATC services;
- Examination of the cost and existing use of ATC services;
- Identification and resolution of safety issues raised by corporatization;
- Assessment of the financial performance and viability of a government corporation to provide ATC services; and,
- Identification of best practices in acquisition, budget/finance, governance and personnel that would be possible under corporatization, and the limitations on achieving these if ATC remained within a government agency.

The EOC and Task Force also conducted extensive outreach with users, other U.S. government corporations, foreign civil aviation authorities and ATC organizations, financial and business interests, and other interested parties. The EOC held a public meeting on February 22, 1994 to provide interested groups and the public an opportunity to comment on the potential restructuring of ATC. This report transmits the findings and recommendations of the EOC to the Secretary of Transportation.

THE NEED FOR CHANGE

FAA's problems are not new and have been widely recognized. Since 1985, seven major studies have recommended creating a government corporation to provide ATC services. These studies included Presidential Commissions appointed under both Democratic and Republican administrations--the Aviation Safety Commission (1988) and the National Commission to Ensure a Strong Competitive Airline Industry (1993). In addition, Vice President Gore's effort to improve government, the National Performance Review (NPR), endorsed those earlier recommendations and called for the formation of an air traffic control corporation to operate, maintain and invest in the ATC system. In the last ten years, the following studies recommended that a government corporation be established for ATC or all of FAA:

- National Performance Review, *From Red Tape to Results: Creating a Government that Works Better & Costs Less*, September 1993;

- National Commission to Ensure a Strong Competitive Airline Industry, *Change, Challenge and Competition: A Report to the President and Congress*, August 1993;

- Reason Foundation Policy Study, *How to Spin Off Air Traffic Control*, August 1993;

- Department of Transportation, *Report on Independent ATC Corporation*, April 1988;

- Aviation Safety Commission, *Aviation Safety Commission: Final Report and Recommendations*, April 1988;

- National Academy of Public Administration, *The Air Traffic Control System: Management by a Government Corporation, A Study for the Air Transport Association of America*, March 1986;

- Air Transport Association, *Federal Corporation Approach to the Management and Funding of the Air Traffic Control System*, September 1985.

The U.S. ATC system is the safest in the world. However, FAA is struggling to keep up with rapidly advancing technology, such as the use of global positioning system (GPS) satellites, which offer the potential to improve safety substantially and reduce the cost of aircraft operations. Government acquisition regulations and procedures hamper FAA's ability to effect timely delivery of advanced technology ATC systems. The U.S. General Accounting Office (GAO) noted in a recent report that major acquisitions for the ATC system were delayed for five years on average and that nearly every project incurred significant cost increases.[2] FAA still operates systems using vacuum tube technology dating from the 1940's, 1950's and 1960's. Technology has developed well beyond this, first moving to transistors and now to microchips. Maintenance for these old systems is a problem because replacement parts are hard to find and new technicians must be trained to work on obsolete technology.

FAA will face an increasingly difficult time in acquiring the necessary budgetary resources to operate and modernize the ATC system if it is subject to the governmental

[2]Air Traffic Control: Status of FAA's Modernization Program, United States General Accounting Office, April 1993.

pressures to reduce the deficit. In contrast to prior years where FAA was able to operate with increased budget authority, overall governmental constraints on spending will increasingly affect the ATC system. This will occur even though most of ATC costs are met through user taxes, the proceeds of which will continue to grow with increased aviation activity.

Comprehensive reform of the existing structure is needed for the ATC system to meet the challenges of the technological revolution during a period of fiscal austerity. FAA has tried internal restructuring again and again without success--in the last decade it has attempted 24 reorganizations and reforms without solving its fundamental problems.

FINDINGS

The EOC concluded that continued operation of the ATC system as part of a traditional government agency will not resolve the problems that impede its operation and modernization. Because air traffic services are critical inputs to the production of airline services, these problems unduly affect the operations and increase the costs of airline services. As noted by the National Commission To Ensure a Strong Competitive Airline Industry:

> *To understand the central role of the air traffic control system in the operational functioning and economic well-being of the airline industry, it is important to recognize that virtually everything an airline does--from pushing off the gate and taking off and landing airplanes to selecting and changing flight paths--can be done only with the prior approval of a federal air traffic controller. Thus, in a very real sense, the federal government controls the production line of the U.S. airline industry. In the history of American business, there has never been a major commercial industry whose minute-by-minute operating efficiency was capped by the daily operating efficiency of the federal government--except for the airlines.*[3]

The EOC found that, while incremental reforms can be undertaken as "building blocks," a traditional government agency is simply not structured to manage a high technology operational service such as air traffic control. A change in the structure of the

[3]National Commission to Ensure a Strong Competitive Airline Industry, "*Change, Challenge and Competition: A Report to the President and Congress,*" (August 1993), p10.

organization providing ATC services is required. This conclusion is supported by the following findings:

- The ATC system operates safely due to the combined efforts of the FAA work force and system users, including commercial and non-commercial aviation and the military. However, efficiency is sacrificed by imposing large cost penalties on airlines, passengers, cargo shippers, general aviation and all other ATC system users.

- The ATC system is unable to respond quickly to its customers' needs and to modernize its infrastructure. The physical plant of the ATC system is characterized by obsolete technology; for example, it is the world's largest user of vacuum tubes. Most of the acquisition programs designed to modernize the system have experienced lengthy delays and significant cost overruns.

- The record of the last ten years shows that the fundamental problems of the ATC system cannot be solved by internal reforms. These problems result from operating ATC within a traditional government agency. Although individual reforms would be helpful, they would not address the ATC system's problems comprehensively.

- Other countries have undertaken major structural changes in the provision of air traffic control services. In these countries, delays have been reduced, the cost to system users lowered and the quality of ATC service substantially improved. Their experience also shows that with more businesslike operations safety can be maintained and even enhanced.

- ATC is the kind of public service best delivered by a businesslike entity such as a government corporation. The system has large investment needs, most of the costs are already paid for by users through taxes and the benefits of air traffic services accrue to those paying the taxes. Businesslike incentives in the ATC system's use, and in its management and investment programs will provide large benefits to those users.

- A government corporation can be structured to be financially self-sufficient, with no reliance on appropriated funds. Businesslike financial practices can reduce the financial burden on both users and the general taxpayer. This can be done while protecting important investment programs such as the Airport Improvement Program.

- A government corporation, freed from the constraints of the federal budget process, could significantly accelerate ATC system modernization and investment to deliver large benefits to users by allowing them to operate more efficiently and lower their own costs. Significant technological changes on the horizon, such as the use of global positioning system satellites for ATC, can provide substantial savings to users. It is critical to realize these benefits as soon as possible.

- Financing ATC on a businesslike basis means that the funds for future investments will not have to be set aside today. They could be spent when the actual investment takes place. In addition, selective and prudent borrowing could be used to fund improvements that would be repaid as the benefits are realized.

- The financial analyses underlying the EOC's recommendations are conservative, and allow for all ATC system costs and the operations of the remaining FAA.

- An ATC corporation can be structured to protect the interests of and access for general aviation and public users.

- Most importantly, such structural change can be made while maintaining and even enhancing the high level of ATC safety and protecting national security interests.

THE RECOMMENDED MODEL FOR U.S. AIR TRAFFIC CONTROL

The EOC recommends that a wholly-owned U.S. government corporation be established to operate, maintain and modernize the ATC system. The U.S. Air Traffic Services Corporation (USATS) will operate as a not-for-profit organization and derive its support from fees levied on commercial users of the ATC system. General aviation and public users will be permanently exempted from user fees. User charge levels will be developed in consultation with those who use the system and will be subject to disapproval by the Secretary of Transportation. Such fees will replace an equivalent amount of existing indirect aviation taxes so as not to increase the total financial burden on system users.

The EOC believes that it is important to have an independent ATC organization to improve efficiency. A Board of Directors, with strong user representation, will ensure that the corporation produces services efficiently and maintains control over its costs. The ATS

Corporation would have the responsibility for controlling air traffic, maintaining the equipment of the National Airspace System (NAS), modernizing ATC facilities and equipment, conducting research into future ATC systems, and supporting national security activities. It will coordinate planning efforts with FAA and will have delegated authority to develop airspace regulations. The corporation would come under the control of the Department of Defense in times of crisis or war.

Retaining a core FAA for safety regulation of the corporation builds upon the highly successful model of FAA safety regulation of airlines, aircraft manufacturers, and other aviation enterprises. The core FAA would retain its historical mission of assuring aviation safety and security through its existing regulatory functions, such as inspection and surveillance of the airlines and certification of new aircraft. The core FAA also would be charged with safety oversight of the USATS. It would also manage aviation safety and security research programs, and the promotion of airport safety and development. The FAA Administrator would have the power to intervene to resolve safety or national security issues. The core FAA would retain its current relationships with DOT, DOD, NTSB and Congress. It would be subject to the same budget and oversight processes as it is today. The DOT and FAA would continue to retain authority for international agreements, using the corporation's technical expertise where appropriate.

The essential features of the EOC's recommended structure for USATS include the following:

- **Maintaining Accountability for Safety**--USATS will be responsible for the safe and secure operation of the ATC system, and will be subject to the regulatory oversight of the FAA. USATS will receive the same safety oversight regarding air traffic operations from the National Transportation Safety Board as FAA does today.

- **Supporting the National Defense Mission**--There will be no break in the operation of the joint civil-military ATC system. National defense interests with regard to Special Use Airspace and acquisition will be protected, and the existing authority of the Secretary of Defense concerning the use of the National Airspace System will be maintained. The Department of Defense will be represented on the corporation's Board of Directors.

- **Preserving Oversight**--The corporation will be housed within the Department of Transportation, and the Secretary will retain oversight through membership on the Board of Directors and the authority to disapprove the level of user charges and borrowing. FAA, DOT and Congress will also retain safety oversight through the FAA's regulatory

authority and the Administrator's power to intervene in compelling safety and national security issues.

- **Responsiveness to Users**--Users will be represented on the USATS's 's Board of Directors and will have a direct voice in decisionmaking. The corporation will be required to consult with users prior to changing rates and charges. The corporation will be required to operate under public notice procedures before it could close facilities or discontinue safety services.

- **Encourage Cost/Productivity Improvements**--The efficient operation of the corporation will be assured through user membership on the Board and the linkage of the user charges to the cost of producing services. A significant role for users in the governance of USATS promises to improve the functioning of the corporation dramatically.

- **Meeting International Commitments**--The corporation will provide technical expertise to support international agreements where appropriate. The corporation's user charges will conform to international standards, and will be developed through consultation with users.

Shifting the provision of ATC services to a government corporation will result in more businesslike practices. In particular, the USATS will fund its capital improvement program using funds raised in private markets or through borrowing from the Treasury. The corporation will have incentives to operate efficiently because the market will look to debt coverage in determining the level and cost of funds provided to the corporation. User participation on the Board will provide incentives to invest in those projects that provide tangible returns in terms of reduced operating costs for the corporation or its customers. The corporation also will bear any liability costs resulting from operation of the ATC system thereby providing direct incentives for the safe and efficient provision of services. The development of best practice personnel and acquisition systems also will provide the corporation with incentives to manage the operations and investment programs using businesslike incentives.

FINANCIAL PERFORMANCE

The EOC has reviewed a number of detailed staff analyses prepared for the Task Force which project the financial performance of USATS and the core of FAA under different scenarios. The EOC recognizes that the corporation will develop and implement its own financing and investment plans. However, the EOC also recognized that, how

USATS achieves financial viability and the funding status of the remaining FAA, are important issues to both users and other interested parties. Based on its reviews, the EOC is confident that USATS will be financially viable and will not rely on appropriated funds. All the planned programs for the ATC system and the remaining FAA can be undertaken. In fact, USATS will be able to increase investment accelerating ATC system modernization, without increasing the financial burden on users, through the prudent use of borrowing. In addition, a viable Trust Fund can be maintained for the investment programs for the remaining FAA, including the Airport Improvement Program.

Depending on the particular scenario analyzed, it also may be possible to reduce the financial burden on both system users and the general taxpayer. The management, personnel, acquisition, governance and budgeting reforms embodied in USATS would permit the corporation to reduce costs and increase the efficiency of investment. With strong user representation on the Board, the corporation will be better able to coordinate its investments with those of its customers, facilitating ATC system improvements as well as improvements in aircraft equipment necessary to use the system.

TRANSITION TO USATS

An interim CEO will be appointed by the President within 30 days of enactment of the corporation's enabling legislation. The USATS will commence activities within one year, subject to certification by the FAA Administrator that all required actions have been completed. A portion of the existing aviation taxes will be converted to user fees for the initial year of the USATS's operations. During that period, a schedule of fees will be developed by the corporation based on a detailed study of the cost and use of the ATC system. These fees will be established in consultation with users and will be subject to disapproval by the Secretary of Transportation.

1

INTRODUCTION

1.1 BACKGROUND

The National Commission To Ensure A Strong Competitive Airline Industry and the Vice President's National Performance Review (NPR) recommended major changes in the organization of the Federal Aviation Administration's (FAA) air traffic control (ATC) services. These studies concurred with earlier ones in concluding that the performance of the U.S. aviation industry is unnecessarily constrained by government operation of the ATC system, that FAA must undergo significant change to meet the challenges of the twenty-first century and that a government corporation should be created to provide air traffic services.[4]

The recommendation that a government corporation should be established to provide air traffic control services was carried forward to a January 1994 policy statement, *The Clinton Administration's Initiative to Promote a Strong Competitive Aviation Industry*:

> *In response to the recommendations of both the National Performance Review and the National Airline Commission, a Committee of Administration experts is developing a detailed plan to restructure FAA's ATC services as a government corporation. Our goal is to make ATC more businesslike and to overcome certain chronic impediments to good management, such as inflexible personnel rules and burdensome procurement regulations, that have frustrated efficient and effective delivery of ATC services.*

[4]The EOC reviewed 13 studies and reports on restructuring FAA. Seven of the 13 recommended some form of government corporation for all or part of FAA, while only one recommended reforming FAA without any organizational change. These studies are discussed in Section 15 of this report.

To implement this initiative, the Secretary of Transportation established a two-tier study group to examine how ATC could be restructured: an Executive Oversight Committee (EOC) was formed to direct and oversee a Corporation Assessment Task Force, which conducted analysis and outreach on behalf of the EOC. The EOC consisted of senior officials from the Office of the Secretary of Transportation (OST), FAA, several organizations within the Executive Office of the President, three other government agencies and two existing government corporations. The Task Force comprised individuals from OST, FAA, other agencies, government corporations and FAA labor unions. Attachment A lists the members of the EOC and the Task Force.

The Task Force began its activities in September 1993 and continued its outreach and analysis through January 1994. The Task Force chartered four Working Groups to examine issues in specific areas and to identify best practices for a restructured ATC organization; the four groups were: Governance, Acquisition, Budget and Finance and Personnel. The Working Groups began their activities in October and submitted initial reports in early December.

The Task Force briefed the EOC on its deliberations through bi-weekly meetings. The EOC reviewed the results of the Task Force's work and directed additional analyses where appropriate. Throughout its evaluation of proposals for restructuring ATC, the EOC's fundamental criterion was that any proposed change must maintain the current high level of aviation safety.

The Task Force provided an initial draft report to the EOC, setting forth key issues, in January 1994. After review of these materials, the EOC and Task Force refined the corporation design. This report reflects the work of the EOC, the Task Force and the Working Groups. It constitutes the recommendations of the EOC to the Secretary of Transportation for establishing the U.S. Air Traffic Services Corporation (USATS) to operate, maintain and modernize the U.S. ATC system.

1.2 STUDY PROCESS

The study was designed to identify the major forces driving organizational reform, consider alternative organizational models for restructuring ATC, and to determine which model was the best alternative. The major issues in the assessment of the models were their potential impact on safety and national security, responsiveness to customers, financial viability, productivity and continuity of service.

The EOC employed outside experts to assist it in the key study areas of acquisition, budget and finance, and personnel. The following firms were asked to identify best industry practices in the following areas:

- Acquisition--Arthur D. Little & Company;
- Budget and Finance--Arthur Andersen & Co.; and
- Personnel--Towers Perrin.

The EOC, Task Force and Working Groups were supported by Gellman Research Associates, Incorporated (GRA), a consulting firm specializing in transportation economics and policy analysis. GRA performed FAA's Cost Allocation Study in 1986, and has detailed knowledge of FAA's costs and programs[5].

GRA was supported by Mr. Erwin von den Steinen of International Transport Policy Associates, a recognized expert in international ATC organizations and Mr. Alan Dean and Mr. Harold Seidman, recognized experts in the structure and operation of government corporations, who are affiliated with the National Academy of Public Administration. Dr. Clinton V. Oster of Indiana University prepared a paper on the safety issues raised by proposals to restructure the ATC system. The Center for Naval Analyses identified specific problems in FAA's operations that compel change.

Arthur Andersen & Company, in addition to supporting the Budget and Finance Working Group, assisted in the development of a financial restructuring plan for the corporation. Believing that safety should always have the highest priority in the consideration of any changes in the ATC system, the EOC requested that the Flight Safety Foundation--the preeminent aviation safety organization--to provide input on the safety imiplications of several proposed corporation models during the formative stages of the study, and to prepare an independent assessment of the safety issues in the selected model. The Flight Safety Foundation report should be completed in the near future.

The EOC, Task Force and Working Groups also conducted significant outreach efforts, which ultimately led to meetings with representatives of the civil aviation and air traffic services authorities from Australia, Canada, Germany, New Zealand and the United Kingdom. The study group also met with representatives of financial institutions such as Morgan Stanley, Bankers Trust, and Marsh McLennan. The study group sought comments from various Department of Defense organizations, the National Academy of Public Administration, the Tennessee Valley Authority and other government corporations, held listening sessions with the aviation community and arranged for presentations by members

[5] The FAA Cost Allocation Study is a seven volume report prepared in 1986 for the Office of Aviation Policy and Plans by Gellman Research Associates, Inc.

of the National Airline Commission and the NPR. The EOC also conducted a public meeting on February 22, 1994 to provide interested groups and the public an opportunity to comment on the restructuring of ATC. A more complete discussion of these outreach activities is contained in Section 7 of this report.

1.3 REPORT ORGANIZATION

The report contains the results of six months of effort by the EOC, Task Force and Working Groups. This report provides the EOC recommendations and also provides a source of information on the issues and deliberations that led to these recommendations. The report is organized into the following sections:

- Section 2: The ATC System and Need for Change--Describes the existing ATC system and the need for change;
- Section 3: Compelling Reasons for Restructuring ATC--Reviews the problems under the current organizational structure, describes how these problems can be resolved by creating a government corporation to provide ATC services and gives an overview of a government corporation;
- Section 4: Models--Discusses the recommended structure of USATS and its relationship to FAA, and describes alternative organizational models that were evaluated but not selected;
- Section 5: Safety--Describes the safety considerations in establishing USATS, how safety will be assured in the corporation, and the relationship of USATS to FAA;
- Section 6: National Security--Identifies the role of the ATC system in national security, describes support of the national defense mission, and discusses existing FAA-DOD relationships;
- Section 7: Outreach--Summarizes the outreach activities conducted during the study by the EOC, Task Force and Working Groups;
- Section 8: Governance--Describes how the recommended corporation will be governed;
- Section 9: Acquisition--Describes current acquisition system problems and presents an overview of the recommended acquisition system;

- Section 10: Personnel--Describes existing problems with FAA's personnel policies and practices and identifies personnel practices appropriate for USATS.

- Section 11: Budget and Finance--Summarizes the existing budget and financing system and the problems that this causes; recommends changes in budget and finance practices;

- Section 12: Business Plan Summary--Summarizes the business and financial issues that must be resolved for USATS to be financially viable;

- Section 13: International ATC Precedents--Describes the experience of other countries in restructuring their ATC systems;

- Section 14: U.S. Government Corporation Precedents--Reviews the experience of other U.S. Government Corporations;

- Section 15: Review of Prior Studies--Provides a synopsis of the reports of the NPR and the National Airline Commission, and summarizes other studies that have examined changes in the structure of the ATC system;

- Section 16: International Obligations--Describes how international obligations can be met by USATS;

- Section 17: Transition--Describes the activities that will have to be undertaken during the transition to USATS and during its start-up.

- A series of attachments contains materials to supplement the analyses and information in the main body of the report:

  - Attachment A lists the members of the EOC and Task Force;

  - Attachment B provides data to support the allocation of FAA's costs to specific air traffic services; and

  - Attachment C presents a summary of the analysis of the costs and benefits of accelerating ATC system investment.

2

THE ATC SYSTEM AND THE NEED FOR CHANGE

2.1 THE U.S. ATC SYSTEM

The U.S. operates a unified ATC system to serve the needs of both civil and military aviation. Although FAA manages the system, ATC services are provided by both FAA and the Department of Defense (DOD). Broadly, the ATC system consists of air traffic control and flight services facilities, navigation and landing aids, the staff to operate and maintain existing facilities, and the staff that conducts research into future ATC systems, develops these systems, and brings new ATC equipment into service. In FY1993, support of the ATC system required about 70 percent ($6.3 billion) of FAA's total budget and about 85 percent of its total personnel (full-time equivalents).

The U.S. operates the largest ATC system in the world. Fourteen of the world's 15 busiest commercial airports (in terms of commercial aircraft operations) are in the U.S. (London-Heathrow ranks 12th.) The U.S. has about one-half of the world's air traffic activity. The ATC system provides about 600,000 ATC services each day, including activity at FAA and DOD facilities. The major types of ATC facilities include the following:

- Air Route Traffic Control Centers (ARTCCs)--FAA operates 21 ARTCCs, which provide radar separation for aircraft flying at higher altitudes between terminal areas. Centers handled about 38 million aircraft in FY1993. FAA also provides oceanic air traffic control services.

- Terminal Radar Approach Controls (TRACONs)--FAA operates 167 radar approach control facilities, which provide separation services for aircraft operating in busy terminal areas. TRACONs handled about 53 million operations in FY1993. FAA establishes radar approach control services when

activity levels support such a facility. FAA has begun a program to consolidate existing TRACONs into Metropolitan Control Facilities to reduce the cost of operating these facilities, and to provide more effective coordination in high traffic locations. This is being accomplished as facilities are modernized. DOD operates 63 radar approach control facilities which serve both civil and military traffic.

- Air Traffic Control Towers (ATCTs)--These facilities control aircraft on the airport surface and landing or taking off at the airport. FAA operates 402 air traffic control towers, which had 60.1 million operations in FY1993. About one-half of the tower operations were at facilities that also had primary approach control; the other half were at Visual Flight Rule (VFR) or non-radar towers or towers with secondary approach control services. In addition, the FAA contracts-out low activity towers. There were 27 contract towers, which handled a total of 1.7 million operations, in FY1993. DOD control towers serve mostly military installations, but they are a part of the national ATC system.

- Flight Service Stations (FSSs)--Flight service stations, which serve principally general aviation, provide flight plan filing and pre-flight weather briefing services. FSSs also remain in contact with flights to provide updated weather information and to provide advisory and other services. FAA is completing consolidation of existing FSS facilities into automated flight service stations (AFSS). At the end of FY1993, FAA operated 59 AFSS facilities and 74 FSS facilities. When consolidation is complete, FAA will operate 61 AFSS facilities, and 31 auxiliary FSS in locations with unique weather or operational characteristics. FAA also provides some flight services to pilots via call-in computer in its direct user access terminal system (DUATS). FAA produced 37.2 million flight services and 11 million DUATS transactions in FY1993.

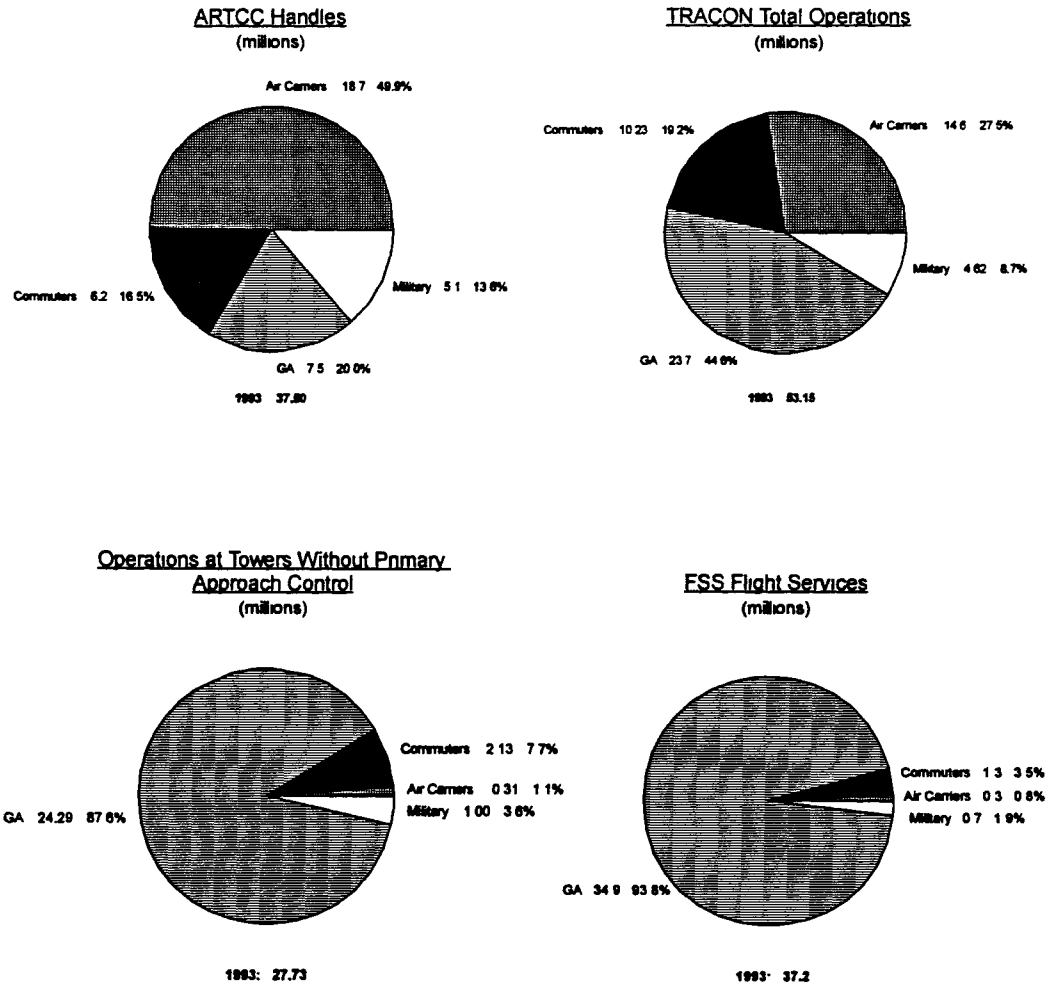
2.1.1 THE USE OF FAA ATC SERVICES

FAA provides ATC services to a broad spectrum of users. For example, air carrier users can be subdivided into passenger and cargo flights, domestic and international flights, and scheduled and non-scheduled flights. However, activity is measured at FAA ATC facilities for four major user types: air carrier, commuter/air taxi, general aviation and military. Figure 2-1 shows the distribution of activity for the four major user types at each type of ATC facility in FY1993. Air carriers account for almost one-half of the total

activity at ARTCCs. General aviation (GA) use of the en route system is predominantly by larger and more sophisticated GA aircraft that are equipped to operate under instrument flight rules (IFR) and typically operate with IFR flight plans.

Figure 2-1

Services Provided by FAA Facilities by User Group



Source Tabulated from FAA Air Traffic Activity Database

Figure 2-2 shows the percentages of GA aircraft and flight hours operated under IFR flight plans. Only two percent of the hours flown in single-engine piston aircraft with three

or fewer seats are under IFR flight plans, while 97 percent of the hours flown by turbojet aircraft are under IFR flight plans.

Figure 2-2

General Aviation Use of IFR Flight Plans

Aircraft Type	Total		IFR Flight Plan			
	Number of Active Aircraft	Hours Flown	Number of Active Aircraft	Percent of Total Number of Active Aircraft	Hours Flown	Percent of Total Hours Flown
Fixed Wing - Piston						
1 Eng.: 1-3 seats	52,524	5,659,846	3,133	6.0%	118,737	2.1%
1 Eng.: 4+ seats	91,046	12,393,505	39,872	43.8%	2,174,376	17.5%
2 Eng.: total	18,451	3,171,634	14,951	81.0%	1,485,067	46.8%
Total Piston	162,107	21,229,172	57,974	35.8%	3,778,393	17.8%
Fixed Wing-Turboprop	4,704	1,477,508	4,065	86.4%	1,043,405	70.6%
Fixed Wing-Turbojet	4,022	1,072,292	3,896	96.9%	1,039,703	97.0%
Rotorcraft						
Piston	2,211	414,119	16	0.7%	930	0.2%
Turbine	3,541	1,866,326	233	6.6%	12,361	0.7%
Other	7,836	409,872	93	1.2%	4,585	1.1%
All Aircraft	184,424	26,469,280	66,281	35.9%	5,879,377	22.2%

Source: General Aviation Activity and Avionics Survey, Calendar Year 1992, Prepared by FAA Office of Aviation Policy, Plans and Management Analysis

According to FAA's most recent forecast, the projected increase in ARTCC use is not constant across the user groups.[6] The total growth in ARTCC activity for each of the major user types over the FY1993 to FY2005 time period is estimated to be:

[6]FAA Aviation Forecasts: Fiscal Years 1994-2005, Report No. FAA-APO-94-1, March 1994.

- Air Carrier--25.8%;
- Commuter/Air Taxi--50%;
- General Aviation--17.6%;
- Military--4.2%.

Total TRACON activity for FY1993 is also shown in Figure 2-1 for the four user groups. General aviation accounts for about one-half of TRACON activity. The projected growth rates for the use of TRACON facilities by user group are approximately the same as for ARTCCs because each facility type handles different parts of the same IFR aircraft flights.

The most active ATC towers are at airports that are served by TRACONs providing primary approach control services. However, there are a large number of VFR Towers that have only secondary approach control services.[7] Figure 2-1 shows the activity at VFR Towers in FY1993. General aviation accounts for almost 90 percent of the activities. Total GA hours flown are expected to grow by 12 percent over the FY1993 to FY2005 time period, or about one percent per year.

FY1993 FSS activities by user group are also shown in Figure 2-1. Almost 95 percent of FSS services were used by general aviation. FAA forecasts show that conventional flight services (flight plans, pilot briefs and aircraft contacts) are projected to decline by about nine percent over the FY1993 to 2005 time period. However, DUATS transactions are projected to increase by about 80 percent over the same period.

The projections of future activity show that growth will be concentrated in those facilities which serve primarily IFR traffic. Low growth or declines in activity are projected for those facilities which serve VFR traffic. Higher growth rates are projected for air carrier and commuter/air taxi users than for general aviation and military users.

2.1.2 ATC SYSTEM COSTS

As shown in Section 12 of this report, the costs of the ATC system comprised facility operations and maintenance, equipment acquisition, research and development and

[7]Secondary approach control services are provided to airports that are satellites to a primary facility, or where tower en route control procedures are used.

overhead. These costs amounted to about $6.3 billion in FY1993. The total costs for the individual facility types in FY1993 are estimated as follows:[8]

- ARTCCs--$3.1 billion;
- TRACONs--$2.5 billion;
- VFR Towers--$211 million;
- Flight Service Stations--$385 million.

The acquisition and maintenance cost of en route and terminal navigation aids are included in ARTCC, TRACON and VFR Tower costs, respectively.

2.2 THE NEED FOR CHANGE

The FAA is an integral part of the U.S. aviation industry, which includes aircraft manufacturers, airlines, airports and other aviation companies. The aviation industry is a leading exporter and employer; in 1991, civil aviation provided over three million high-quality jobs and its employees earned almost $100 billion.[9] The aviation system is a vital national resource, essential to economic progress for the nation's citizens and businesses and in linking the U.S. to an increasingly global economy.

Combined with the diligence of the industry and its workers, FAA regulations, surveillance and standards have ensured that the U.S. aviation system is one of the safest transportation networks in the world and have supported the efficient expansion of American aviation. In 1993, the major carriers reported a total of 22 accidents--most of them minor--with no fatalities. The current accident rate for air carriers has stabilized at such a low level that a single accident can significantly change the reported accident rate. Commuter airlines, notwithstanding two recent accidents, continue to show a marked improvement in their safety record. General aviation also had its safest year on record, with accidents and fatalities each down about five percent from the 1992 levels.

In view of this excellent safety record and the steady growth of the aviation system, why are so many voices calling for fundamental change in the way FAA operates? They are doing so because the system is operating under constraints that unduly limit its ability to provide needed services as safely, efficiently and cost effectively as it should. These

[8]Estimates of FAA costs by ATC facility type are from an update of the 1986 FAA Cost Allocation Study. The methodology used to prepare these estimates is discussed in Attachment 3 of this report.

[9]The Economic Impact of Civil Aviation on the U.S. Economy UPDATE '91. Wilbur Smith Associates, April 1993.

limitations are significant today and will be more important in the future as increasing air traffic places additional demands of the ATC system.

The U.S. aviation system is on the verge of a technological revolution similar to that brought about by the introduction of jet aircraft some 30 years ago. Global navigation systems, satellite communications, data link, and ATC automation will provide tremendous savings to aircraft operators of all types through (1) more direct routings that save fuel and (2) reduced in-trail separation that will increase en route capacity. These savings will make our industry more competitive, and will directly benefits consumers, who now ultimately pay for the system's inefficiencies. FAA projects over 50 percent growth in passenger enplanements between 1994 and 2005, with over 800 million enplanements each year by the end of the period. The ATC system must be able to respond. However, organizational constraints raise serious questions about the ability of the ATC system to continue to perform as it has. The next section examines whether internal reform is likely to produce an acceptable solution to the problems of the ATC system or if more significant changes are required.

3

COMPELLING REASONS FOR RESTRUCTURING ATC

3.1 INTRODUCTION

The EOC conducted an in-depth assessment of organizational options for restructuring ATC. This section discusses compelling reasons for restructuring ATC, the evaluation of internal reform of FAA and the merits of establishing a government corporation to provide ATC services.

3.2 ECONOMIC AND TECHNOLOGICAL FACTORS

The changing economics of the aviation industry and rapid technological innovation in navigation and ATC systems have created a sense of urgency for restructuring the ATC system.

3.2.1 ECONOMIC IMPACT OF TECHNOLOGICAL CHANGE ON THE AVIATION INDUSTRY

The ability of the ATC system to provide efficient and safe separation services, using the most modern technology available, is vital to the economic health of the aviation industry. As it exists today, caught in a tangle of federal regulations and procedures, FAA cannot meet the current demands of the aviation industry and faces increasing problems in meeting future demands.

Of particular importance to the aviation industry is the timely implementation of advanced technology solutions to their problems. The Global Positioning System (GPS) is a prime example of an emerging technology whose swift implementation would provide great benefits to users. GPS-equipped aircraft would save fuel by flying more direct routes. GPS will also increase en route capacity by permitting the reduction of in-trail separation and by providing more accurate tracking of oceanic flights. These savings would make our industry more competitive and would benefit consumers as well.

The economic impact of these changes would be very significant. An airline would save 70 cents (at current prices) for each gallon of fuel that an aircraft does not burn because of more direct routes provided through satellite-based systems combined with ATC automation procedures. An airline could save as much as $300,000 per aircraft per year, an annual savings of $120 million for a 400 aircraft fleet. Additional savings would accrue from the increased cargo capacity made available by reduced fuel requirements (at seven pounds per gallon of fuel and at a current estimate of $3 in revenue per pound for air cargo) and from increased aircraft utilization.

Experimental flights using the National Route Plan offer evidence of additional benefits from direct routing. That program permits about 300 aircraft each day to fly direct routes between some 100 city pairs that are 1500 miles or more apart. If the savings realized by these experimental flights were extended to the entire U.S. airline fleet, savings of approximately three percent of aircrew costs and maintenance could be realized.

These examples indicate that the possible cost savings from direct routing would approach $l billion annually when applied to the entire industry. These savings could be retained by airlines as increased profits or passed on to their customers. Increases in profit would significantly bolster the financial health of the industry. More efficient air traffic services would also provide significant savings to passengers, who would see a reduction in lost time and productivity; in turn, this would make air travel more attractive. These benefits cannot be realized, however, until the ATC system is upgraded--and at this point FAA is the weak link in the technological revolution.

3.2.2 ECONOMIC IMPACT OF TECHNOLOGICAL CHANGE ON FAA

Today's aviation industry is facing a technological revolution, while much of the ATC system is supported by equipment from the 1950s and 1960s that is long past its original life expectancy. Maintaining this obsolete equipment makes FAA the world's largest buyer of vacuum tubes. ATC facilities use thousand of vacuum tubes each year and tube availability and reliability are becoming serious problems. FAA also faces problems in finding technicians to maintain this older equipment. As current electronics technicians

retire, FAA's ability to service and repair this equipment is continually diluted. Newly-hired technicians have not generally been trained to maintain older equipment and must therefore be retrained in vacuum tube technology. This training is conducted by experienced technicians since the original manufacturers in some cases no longer exist.

The contrast between the technology now used in aircraft and that still used at ATC facilities underscores the efficiency of a corporate structure. For example, on-board radar displays are far more sophisticated than those used in ATC facilities across the country. These cockpit displays provide pilots with detailed information on weather that is not readily available to controllers. This technology has been available for years but is not used by FAA ATC facilities. As a result, controllers often rely on pilots for weather information, which they then use to route aircraft.

The Air Transport Association and the airlines have stated repeatedly that FAA is having serious problems in keeping up with technological developments. For example, the airlines are cautious about buying new air navigation equipment offered by aircraft manufacturers because they don't believe the FAA will be able to make timely delivery on its end of system needs. They cite many examples of planned capabilities that were delayed for years or were finally overtaken by advancing technology: The Precision Runway Monitor program and the Microwave Landing System are just two examples.

Accelerating the transition schedule for system modernization would require additional funding estimated at $5.1 billion through FY2005. If this investment were made, an estimated $11.3 billion in user and ATC operating cost benefits would result. The estimated benefits of increased investments are discussed in greater detail in Section 12 and Attachment D of this report.

Unlike the previous decade, where federal spending grew, current and future budgets are severely constrained by efforts to reduce the deficit. The FAA is already facing the effect of these budget restrictions. It is not likely that the additional funds required to accelerate the transition to satellite-based ATC would be available from the traditional appropriations sources over the next several years.

3.3 WHAT MAKES ATC UNIQUE

What makes ATC unique among government services is the responsibility to provide, maintain and operate a safe, orderly and expeditious system, international in scope and serving both civil and military users. The U.S. ATC system controls substantial amounts of oceanic airspace, and has a leading role in developing worldwide standards.

ATC is the only non-defense governmental service operating 24 hours a day, 365 days a year, providing critical services that affect a significant segment of the national economy. The ATC system provides about 600,000 ATC services each day and maintain more than 8,500 navigation and surveillance aids used to guide and track aircraft.

In many respects, the ATC system is more like the private companies that FAA now regulates than it is like the rest of FAA.

The efficient operation of the ATC system and the agency's ability to meet future demands on that system are essential to the health of the aviation industry. The rules and regulations that FAA promulgates and the pace at which it deploys new technology have a direct influence on the day-to-day operation and the financial well-being of the industry. The interdependence of the airlines and the ATC system was highlighted by the National Commission to Ensure A Strong Competitive Airline Industry in its report:

> *To understand the central role of the air traffic control system in the operational functioning and economic well-being of the airline industry, it is important to recognize that virtually everything an airline does--from pushing off the gate and taking off and landing airplanes, to selecting and changing flight paths--can be done only with the prior approval of a federal air traffic controller. Thus, in a very real sense, the federal government controls the production line of the U.S. airline industry. In the history of American business, there has never been a major commercial industry whose minute-by-minute operating efficiency was capped by the daily operating efficiency of the federal government--except for the airlines.*

Because of this unique operational role, ATC has long been recognized as different from other governmental services by the media, the Congress and the public.

3.3.2 DEREGULATION OF THE AIRLINES

The aviation industry and FAA have received greatly increased attention since the passage of the Airline Deregulation Act in 1978. Since airlines were the first transportation industry to be substantially freed from government economic regulation, the implementation of the Act was seen as a prototype for the deregulation of other industries. The Act provided a new range of flexibility to the airline industry. As the industry adjusted to and became familiar with the flexibility of the deregulated environment, Congress, the travelling public, and the aviation community became increasingly frustrated with the cumbersome procedures that prevented the ATC system from quickly responding to the changing demands of the newly dynamic airline industry.

These concerns have prompted an almost continuous series of studies of the structure and operation of the FAA, with a particular focus on ATC. Given that the previously static regulated industry was now operating in the sometimes harsh light of deregulation, there was an increasing cry for a more businesslike operation of the FAA.

3.4 PROBLEMS AS A GOVERNMENT AGENCY

Internal changes in management and operations must accompany organizational change. But FAA has fundamental problems in acquisition, financing, personnel and governance. Examples of problems under the current FAA structure that need to be solved include:

3.4.1 ACQUISITION PROBLEMS

The FAA acquisition process takes too long, lacks flexibility and accountability, and results in products and services that cost too much. The statutes and regulations that govern FAA inhibit the ATC system in the timely acquisition of advanced technology equipment and result in the inefficient use of time, people and money.

- *As shown in Figure 3-1, the average delay of implementation of NAS plan projects is five years. All programs for which information is available have been delayed for at least one year and up to 12 years. Further, the unit costs for each project, with the exception of Airport Surveillance Radar, increased by 10 percent or more. The unit costs for the Voice Switching and Control System have more than quadrupled.*

- *Even a straightforward acquisition can take four years or more before a contract is awarded, in part because the budget process is so slow and in part because the selection process is so complicated. It takes two years just to get an equipment replacement through the FAA, DOT and Presidential budget process. Another two years are required to prepare the procurement request, advertise the proposal, conduct a technical evaluation of offers, negotiate with firms and award the contract. Prototype development and actual production typically add another three years to the equipment delivery schedule.*

Figure 3-1

CHANGES IN IMPLEMENTATION MILESTONES AND UNIT COSTS FOR 12 MAJOR FAA PROJECTS

Project	First-site Implementation Years Delayed 83 NAS - 92 CIP	Last-Site Implementation Years Delayed 83 NAS - 92 CIP	Percent Change in Unit Cost
Advanced Automation System	1	8	1.27
Air Route Surveillance Radar	9	1	0.11
Airport Surface Detection Equipment Radar	6	6	0.1
Airport Surveillance Radar	4	4	-0.3
Automated Weather Observing System	3	7	0.35
Central Weather Processor	1	Not Available	Not Available
Flight Service Automation System	7	6	0.22
Microwave Landing System	12	9	1.05
Mode S	7	3	0.4
Radar Microwave Link Replacement and Expansion	1	Not Available	0.38
Terminal Doppler Weather Radar	*	*	0.38
Voice Switching and Control System	6	5	4.44
Average	5	5	

- *The Advanced Automation System (AAS) is an excellent example of FAA's problems in acquisition. The replacement of the vintage computers has met with billion dollar cost overruns and years of delays. There are many reasons for this system's problems and Federal acquisition and budget processes contributed to them. What is clear, however, is that a corporation's users, represented on the Board of Directors, would never have tolerated these delays or cost overruns.*

- *FAA spent $80 million conducting design competitions for the Host computer contract, which called for off-the-shelf equipment. The production award for all the Host computers was for only $191 million. It took FAA seven years from the initial request to the final installation; in that time, the computers went from being state-of-the-art to being technologically obsolete.*

- *The aviation industry identified the need for additional instrument landing systems (ILS) to reduce delays at airports in 1986. Money for the systems was provided by Congress in the fiscal 1987 supplemental appropriation. FAA had tried to award the contract to the sole historical supplier of ILSs, but because of a protest by a potential competitor, FAA was forced into a lengthy competitive procurement. The historical supplier was ultimately awarded the contract, but the first ILS system was not installed until 1990.*[10] *FAA is required to solicit bids from all potential vendors, even when only one or a few are capable of delivering what is needed. This caricature of the competitive process creates delays and increases costs.*

3.4.2 FINANCIAL PROBLEMS

Although a large share of FAA's budget comes from user taxes, Congress must still appropriate funds for operations and investments. The modernization of the ATC system is delayed by FAA's dependence on annual appropriations and the federal budget process (including the pressures of the budget deficit.) FAA's inability to make sufficient investments imposes costs on system users. Eliminating these costs would more than offset the cost of improvements.

- *In 1990, all government agencies were threatened with a budget sequester; this required FAA and the airlines to develop contingency plans for the furlough of 25 percent of the air traffic controllers. The airlines characterized the impact of this plan, if carried out, as "catastrophic."*[11]

3.4.3 PERSONNEL PROBLEMS

FAA's human resources systems lack flexibility. Its personnel, compensation and incentive systems and rules are rigid, complex and over-proceduralized. They address

[10]Airport Magazine January/February 1994, p. 67

[11]Airport Magazine, ibid.

broad, government-wide concerns and do not directly support the ATC system's strategic objectives and unique needs.

- *FAA cannot readily deploy its controller workforce to the facilities where they are most needed or in response to changes in demand. This is due, in part, to the fact controllers' pay is determined by rigid federal classifications; controllers at facilities with widely varying workloads receive the same rate of pay and can be offered little incentive to move.*

- *In an era of rapid technological change, FAA will have to repeatedly create new positions and reclassify personnel to meet its needs. But the process of occupation change within the government is slow and ponderous. For example, creating the new occupation category of Airway Transportation System Specialist to maintain GPS equipment took six years. That is not acceptable.*

3.4.4 GOVERNANCE PROBLEMS

FAA is unable to fully control its operational decisionmaking because of extensive oversight by OST, OMB and Congress. The current budget process, with four separate budget accounts involving numerous line items, encourages micromanagement and reduces FAA's ability to meet changing needs by reallocating funds.

- *FAA acquisitions for the ATC system are characterized by lengthy delays and significant cost overruns. This occurs notwithstanding extensive oversight by FAA management, OST and OMB staff, and the Congress.*

3.5 EVALUATION OF INTERNAL REFORM OF FAA

There appears to be broad agreement that FAA faces major challenges, and that some type of reform is necessary. The EOC believes that this is a key point of consensus, and represents an important base that can be built upon. The question then becomes not whether to try to solve the ATC system's problems, but how that objective can best be accomplished. One approach to the problems confronting FAA would be to introduce reforms within FAA's existing organizational structure.

Under this approach, ATC would remain under FAA, and FAA would retain its current status and responsibilities as a Federal agency within DOT. However, changes would be made through the implementation of selected reforms in the areas of acquisition,

finance and personnel. These changes can be thought of as "building blocks," each of which could provide limited benefits to the FAA and the ATC system. The more blocks that are added, the greater the benefits.

3.5.1 ACQUISITION

Over 10,500 pages of acquisition laws and regulations affect FAA's ability to acquire technology in a timely, value-conscious and cost-effective manner. Many of the laws and regulations, designed with the best of intentions, combine to produce a rigid, burdensome and time-consuming acquisition approval process. These statutes and regulations include, but are not limited to the:

- Federal Aviation Act (Section 303)
- Brooks Act
- Competition in Contracting Act
- Federal Acquisition Regulations
- Small Business Act
- Office of Federal Procurement Policy Act
- Regulations for Construction, Services and Supplies
- Real Property and GSA regulations
- Procurement Protest Act
- Economy Act
- Other Administrative Acts and Executive Orders.

The 10,500 pages of acquisition laws, rules and regulations create numerous obstacles to the efficient updating of ATC technology. The acquisition reform "building blocks" would include relief from certain of the more restrictive statutes and regulations.

For example, the Brooks Act authorizes the General Services Board of Contract Appeals to consider bid protests regarding federal information technology acquisition. FAA has faced an average of 10 of these protests annually. Although FAA has won 90 percent of those protests, the process has delayed important acquisitions. More importantly, it has created incentives to go slowly and painstakingly through the acquisition process in order to avoid protests, rather than providing incentives to get new technology in place quickly and efficiently. The impact of such delays on ATC are greater than in other areas of government because of rapidly changing technology.

The Competition in Contracting Act requires FAA to solicit and evaluate bids from all potential vendors, regardless of their qualifications or expertise in providing a given product. The inability to limit bidding on certain specialized pieces of technology wastes

time and resources, and the modernization of FAA's ATC technology provides a prime example. In addition, the Competition in Contracting Act requires competition at each stage in the life of a program. While the overall goal of encouraging competition is laudable, the result may be to change vendors mid-stream during a project. This can result in added delays as the new vendor gets up to speed, and a loss in continuity.

Relief from some or all of the provisions of the laws and regulations discussed above would help the FAA improve the efficiency of its acquisition process. However, in order to provide a truly significant change in FAA's ability to modernize the ATC system, these changes would need to be combined with the substantial changes to the budget process. The goal of these changes is to create an acquisition system that:

- Encourages the use of existing technology, where feasible;
- Allows for timely purchase and installation of equipment;
- Eliminates reviews and appeals that add considerable time but little if any real benefit;
- Provides appropriate flexibility and autonomy to program managers; and,
- Allows for smooth transitions to subsequent upgrades.

3.5.2 FINANCE

As the GAO and others have noted in their reports on FAA, FAA's budget has grown significantly during the last decade, and the amount of funding it received for capital projects (in its "Facilities and Equipment" appropriation) has doubled. Consequently, some observers do not believe that FAA's budget is in need of reform. But the ATC system's "budget problem" is not about the amount of funding that FAA has received in any given year since FY1985. It revolves around the annual appropriations process, and the difficulties it causes for a high-technology, capital intensive organization. For example, FAA's budget for FY1994 took 22 months from the initial call for estimates to final Congressional approval. The EOC concludes that there are three reasons why the Federal budget process creates a problem for FAA.

First, although FAA's annual budget has grown significantly during the last decade, when viewed from a longer-term economic perspective, FAA's infrastructure had been under-funded for many years before that. The mid-1980's represented a period when funding for FAA was increased in an attempt to "play catch up" for decades of under-investment by replacing the outdated equipment of the 1940's, 1950, and 1960's. As has been noted elsewhere in this report, in spite of those funding increases, the ATC system is still saddled with generations of outdated technology.

Second, as the GAO indicates in its recent testimony before the House Appropriations Transportation Subcommittee on FAA, the years of growth in FAA funding appear to have come to an end.[12] The spending limitations and reductions required to decrease the Federal budget deficit have resulted in the prospect of "almost no-growth budgets for the foreseeable future", and the trend is likely to continue. This is already occurring as evidenced by the dramatic growth in the cost of projects like AAS, which may crowd out other FAA capital projects. The EOC believes that it is unrealistic to believe that FAA will be able to replace the ATC system's outdated infrastructure in this fiscal environment.

Third, the year-to-year appropriations process creates a level of uncertainty, that makes it very difficult to design a capital investment strategy and stick to it. More often, it forces an agency to focus on contingency planning instead of long-range planning. Clearly, that inhibits FAA from executing a technology-intensive capital investment program. This dependence on appropriations means that FAA can make only limited assumptions about future funding and cannot enter into contractual obligations without having the funds in hand to pay for them. FAA's budget for ATC is based on external factors, such as governmental restrictions and annual outlays, rather than on the basis of the level of user taxes collected.

There are a number of possible reforms to the Federal appropriations process that could help FAA. These include:

- Reducing the number of line-items and appropriations, providing greater flexibility to shift funds in response to changing circumstances;
- Eliminating earmarks;
- Establishing a multi-year budget for FAA capital investments;
- Establishing a "revolving fund" for ATC, using existing aviation taxes as the funding source, so that the ATC system would not need to rely on the annual appropriations process.

Any of these reforms would be helpful. The first two would provide FAA with greater latitude in the use of its overall funding. The latter two would create greater certainty for long-range capital planning. However, it should be noted that no Federal agency has the ability to use long-term financing for capital investments.

[12]Kenneth M. Mead, "FAA Budget: Agency Faces Key Management Challenges on Major Issues," GAO/T-RECD-94-191, (April 19, 1994), pp 2 and 25. It is important to note that Mr. Mead's testimony was not in support of a government corporation for ATC.

3.5.3 PERSONNEL

FAA managers and employees must work with 47,200 pages of personnel laws and regulations. A number of measures could be taken to reform existing laws and regulations to improve FAA's personnel system; these measures include:

- Creating a more flexible recruiting, selection and placement system exempt from Title 5 of the U.S. Code and administrative restrictions on employment levels;

- Developing a compensation system that permits flexible salary-setting within expanded pay ranges exempt from Title 5 and the 150 separate sections of Federal pay statutes that govern pay matters. That would permit broad-banding of pay levels and provide greater flexibility to move employees into different jobs without changing compensation, as well as to determine appropriate pay levels;

- Designing a performance management system exempt from Title 5 and other administrative restrictions; and

- Creating a flexible labor relations system exempt from the labor-management provisions of Title 5, allowing greater employee input.

One approach would be to exempt FAA fully from the personnel provisions of Title 5 of the U.S. Code. Another approach would be to exempt FAA from specific sections within Title 5. These include:

- Chapter 31: Authority for employment
- Chapter 33: Examination, selection and placement (except for the section 3333 prohibition of strikes)
- Chapter 34: Part-time career employment
- Chapter 35: Retention preference, restoration and reemployment
- Chapter 43: Performance appraisal
- Chapter 45: Incentive awards
- Chapter 51: Classification
- Chapter 53: Pay Rates and systems
- Chapter 55: Travel, transportation and subsistence
- Chapter 59: Allowances
- Chapter 61: Hours of work
- Chapter 63: Annual and sick leave
- Chapter 71 Labor-Management relations
- Chapter 72 Anti-discrimination
- Chapter 73 Suitability, security and conduct (except section 7311 prohibiting strikes)

- Chapter 75 Adverse actions
- Chapter 77 Appeals
- Chapter 79 Services to employees.

The goal of these changes is a personnel system that could:

- Provide incentives for increased productivity;
- Pay employees based on performance;
- Move employees based on changes in the demand for ATC services; and
- Improve the management of the workforce.

3.5.4 CONCLUSIONS ON INTERNAL REFORM OF FAA

The reforms listed above represent acquisition, finance and personnel "building blocks" that could be used to reform the FAA within its existing organizational structure. Each building block that is adopted would help improve the performance of FAA and the ATC system. However, making the kinds of bold, fundamental reforms that are required through a piecemeal, incremental approach will be extremely difficult. In the EOC's judgment, the likelihood of eliminating a sufficient number of the obstacles to the system's improved performance within the existing structure is poor. Implementing only personnel reforms, or only acquisition reforms, or only budget reforms, would address only part of the larger problem.

A comprehensive, coherent approach is necessary to fully address the needs of the ATC system and the aviation system's customers. The EOC concludes that the most effective way in which to fundamentally change the ATC system is by taking it out of the existing structure of Federal acquisition and personnel laws and regulations, and to remove it from the Federal budget appropriations process.

3.6 DEVELOPMENT OF A GOVERNMENT CORPORATION

The EOC recommends the creation of a government corporation to provide ATC services as the best way to meet the challenges that face U.S. aviation. In addition to alleviating the acquisition, personnel, budgetary and oversight restrictions enumerated by the NPR, creating a government corporation to operate, maintain and modernize the ATC system would lead to more business-like operations, permit acceleration of capital investment in the ATC system and would better meet the technological and operational needs of the aviation community.

The EOC believes the ATC system is different from other government activities and that its problems cannot be solved through government-wide reforms. There is a clear

need for change--not only in specific procedures but in people's attitudes as well. Much could be gained from the synergy of making needed changes as part of a comprehensive strategy.

The principal reasons for establishing a government corporation to provide services include the following:

- The ATC system is supported by equipment from the 1950s and 1960s that is long past its original life expectancy and functionally obsolete;
- Operating under government rules and procedures, FAA has been unable to implement new technology quickly. Doing so would offer tremendous cost savings to the users of the ATC system;
- A government corporation would be able to invest in projects that have large user benefits without being constrained by overall government spending or deficit reduction considerations;
- FAA needs to be able to borrow from private capital markets to finance the acceleration of system modernization;
- FAA has fundamental problems in acquisition, financing and personnel that are unlikely to be resolved if FAA remains a government agency; and,
- A government corporation can be streamlined to provide business-like incentives to improve the provision of ATC services and to increase efficiency.

In an era of growing demand for services, rapidly changing technology and increasing automation of ATC systems, the agency requires more flexible procedures to be efficient. The ATC system should emulate the best practices of private industry and be more responsive to all users of the aviation system.

The EOC concurs with the NPR report that reform within the existing system is not enough. In the last 10 years there have been 24 different reforms and reorganizations of FAA, none of which have significantly alleviated the acquisition, financing, personnel and oversight problems of the agency. Only one of these significantly affected FAA's structure. This was the transfer of Washington National and Dulles International airports to a regional authority. The transfer of the airports has been viewed as a success by their workforce, the airlines and their passengers, and the general public. Freed from federal budget constraints, the airports have been able to undertake an extensive modernization program.

In fact, constant piecemeal reorganizations have disrupted on-going operations as well as demoralized a highly skilled and dedicated workforce. Moreover, FAA's senior management has spent far too much time trying to fashion stop-gap measures to address ATC system problems rather than planning to meet the challenges of the future. If FAA had acted on the recommendations of a decade ago that the ATC system be restructured, instead of initiating another internal reorganization, the modernization of the ATC system would be much further along today.

3.7 OVERVIEW OF A GOVERNMENT CORPORATION

The Government Corporation Control Act (GCCA) of 1945 established general procedures to govern the management of government corporations. The Act's purpose was to make the corporations accountable to the Congress for their operations while giving them the flexibility and autonomy needed for their commercial activities. The general impact of the GCCA was to replace Congressional oversight, exercised through the appropriations process, with annual business/financial management reporting and audit requirements. A government corporation may be excluded from all or part of the Act. The Act and the Chief Financial Officers Act, which superseded parts of the GCCA, established the following general requirements for wholly-owned government corporations:

- The corporations must prepare and submit a business-type budget to Congress.

- The corporations' budgets are not subject to the traditional appropriations process. Although Congress "considers" their budgets, the corporations are not prevented from either carrying out and financing their activities as authorized under another law, or from making commitments without fiscal year limitations.

- Audits of their financial statements are to be conducted by the corporation's Inspector General or by an independent external auditor, as determined by the head of the corporation. The General Accounting Office (GAO) may conduct an audit at its option; when that occurs, the corporation may, if it so chooses, use the GAO audit that year in lieu of an independent audit.

There is no general definition or model of a government corporation. These organizations differ significantly with respect to ownership, their relationship to the President and Congress, their financial and budgeting status, and their reporting and audit requirements. Conceptually, some have no relationship with the Executive Branch and operate outside most of the laws and regulations that govern the activities of federal agencies. Others have been afforded very limited exemption from these laws and regulations and report directly to a Cabinet Officer. The extent to which the governance

structure of a particular corporation differs from that which typically governs the operations of federal entities is determined by or reflected in its enabling legislation. Section 14, which provides information on 45 existing U.S. government corporations, illustrates this diversity of governance structures.

The National Academy of Public Administration has identified attributes that justify establishing a government corporation. Key among these are the following:

- The agency deals with the public as a business rather than as a sovereign; and,

- Users, rather than taxpayers, are expected to pay the costs of providing services.

A government corporation is suited to these situations because it would allow more flexible, businesslike operation, as well as the use of better financial controls and planning than typically are possible within a government agency. A government corporation also would permit the development of acquisition and personnel systems that are tailored to the needs of the entity and which differ from those used in government departments.

The EOC believes that ATC services fit the accepted definition of activities that justify the establishment of a government corporation. Section 4 describes the key attributes of the government corporation that the EOC recommends be established to provide ATC services and the corporation's relationship with FAA.

3.8 INTERNATIONAL PRECEDENTS

New Zealand, Australia, Britain and Germany have already reorganized their ATC systems as government corporations. The motivation in each case was to give the air traffic service greater financial independence from government and to provide incentives for the corporation to be more responsive to its customers' needs, more efficient in capital budgeting and financial management.

By operating their ATC systems on a businesslike basis, these countries have been able to increase investment and more rapidly modernize the systems, while at the same time reducing delays and/or reducing costs to users. There have been no safety problems associated with these reorganizations--in fact, most of these countries say that safety has been improved. Aviation professionals from every country that has corporatized ATC functions believe that the changeover has been successful.

3.8.1 NEW ZEALAND

In New Zealand, the Civil Aviation Authority and the Airways Corporation believe that separating the air traffic services and regulatory aspects has clarified roles and helped to reduce costs.

The Airways Corporation replaced its 30-year-old radar and communications system with a fully-integrated automated system while simultaneously constructing three new air traffic control centers. The entire modernization project was financed through borrowing on the commercial market and was completed on time and under budget.

The Airways Corporation has reduced its fees for ATC system users in two consecutive years. In its first year of operation the corporation lowered its fees by 10 percent and in its second by another five percent. It will also pay a dividend of $2.5 million to the government. The chairman noted recently that "any profits above target should be returned to our customers. We are conscious of our monopoly status and therefore must not only be efficient but fair and equitable as well."

The Civil Aviation Authority also funded the installation of satellite avionics equipment for much of the general aviation fleet to accelerate the transition to a satellite-based system and the shut-down of the more expensive ground-based system. Although equipping private aircraft with advanced equipment may seem to be an inappropriate subsidy, the CAA determined that it would actually save money by doing so and had the freedom to make that decision based upon its financial analysis and not on the political impact.

3.8.2 AUSTRALIA

In Australia, the Civil Aviation Authority both regulates and provides air traffic services, but keeps funding of regulatory activities and air traffic control services clearly separated.

In consultation with the aviation industry the Australian CAA has rationalized its assets to meet service requirements and established a program to modernize the system (after many years of delays and frustration as a government agency). Personnel costs were reduced by flattening the CAA's managerial structure.

3.8.3 UNITED KINGDOM

In United Kingdom (UK), safety regulation is provided by the Safety Regulation organization within the Civil Aviation Authority and ATC services are provided by the National Air Traffic Services.

The UK CAA's relative freedom of capital budget planning has successfully supported major modernization programs, although it has encountered governmental restrictions in its borrowing authority this year. As a result, there are now proposals to make the UK ATC system more private to alleviate those government restrictions on borrowing.

3.8.4 GERMANY

In Germany, ATC services have recently been restructured. Preliminary indications are that the restructuring has reduced delays significantly. Much of this is attributable to removing controllers from civil service so that they can be paid at levels more appropriate to their occupation. As a result, productivity has increased and delays have been reduced.

3.9 FINANCIAL BENEFITS OF CHANGE

The restructuring of the ATC system as a corporation would result in reductions in user taxes and in appropriations from the General Fund. Accelerated investments in the ATC system would be made that would produce an increase in user benefits. These benefits are discussed in greater detail in Sections 11 and 12 below. The substantial savings would come from using a number of new practices, including the following:

- Using long-term debt to finance major procurements in the modernization of the air traffic control system;
- Drawing down the uncommitted portion of the Airport and Airways Trust Fund;
- Accelerating modernization to reduce ATC operating costs, and provide safety, delay reduction, and user operating cost reduction benefits; and
- Moving away from the governmental practice of fully funding investments to one where costs are recovered over the useful life of the investment.

3.10 SUPPORT FOR CHANGE

The principal users of the ATC system--the commercial airlines--strongly support the change to a government corporation. Airline traffic generates the vast majority of the funds used to invest in and operate the current ATC system through the passenger ticket tax. Those who work within the existing system--air traffic controllers, technicians and support staff--advocate change and have been actively engaged in the development of USATS. They believe that a corporate structure would permit the acceleration of system modernization, improve working conditions and enable them to perform their jobs--ensuring the safety of almost 500 million passengers annually--more effectively.

From FAA's perspective, there is only a tenuous link between the tax receipts paid into the Trust Fund and the level of services it provides. The tax rates are essentially fixed by law. Total receipts rise or fall as a function of ticket sales. Funds must be appropriated by Congress from the Trust Fund and General Fund into a large number of appropriation categories for FAA programs. Trade-offs and reallocations among categories are limited to specific reprogramming amounts within FAA's authority. Reallocations above those limits require going back to Congress for specific authority. Further, because tax receipts are used to fund all capital programs first and a fixed proportion of operating costs (currently about 50 percent), there is little opportunity to trade between capital and operating expenses. FAA has little latitude to find the most productive use for the funds appropriated.

The current system effectively makes airlines tax collectors for the federal government. Many user taxes do not provide a link between what services are really needed, how they should be produced, and what should be charged for them. If users see a direct relationship between what they pay and the service they receive, there will be a natural pressure to make the system more responsive to user needs and more efficient, thereby reducing costs for users, the government and consumers.

3.11 CONCLUSION

The EOC believes that USATS will maintain and improve FAA's high standards of safety and performance. Further, the EOC believes that without greater flexibility in buying new technology, in recruiting a top-flight managerial and technical workforce and in planning long-term investments, the nation runs a serious risk of jeopardizing the system it relies on today.

At a time when governments are being asked to do more with less, it is essential that federal agencies focus on what they do best, examine alternative ways to deliver the services that the public expects and to take a fresh look at whether the job can be more effectively managed outside the federal bureaucracy. Air traffic control is precisely the kind of critical commercial service that can be managed more effectively as a government corporation. Developing a government corporation to provide air traffic services is intended to blend an existing dedication to public service with the entrepreneurial energy and disciplined rationality of American business.

4

RECOMMENDED STRUCTURE OF THE U.S. AIR TRAFFIC SERVICES CORPORATION

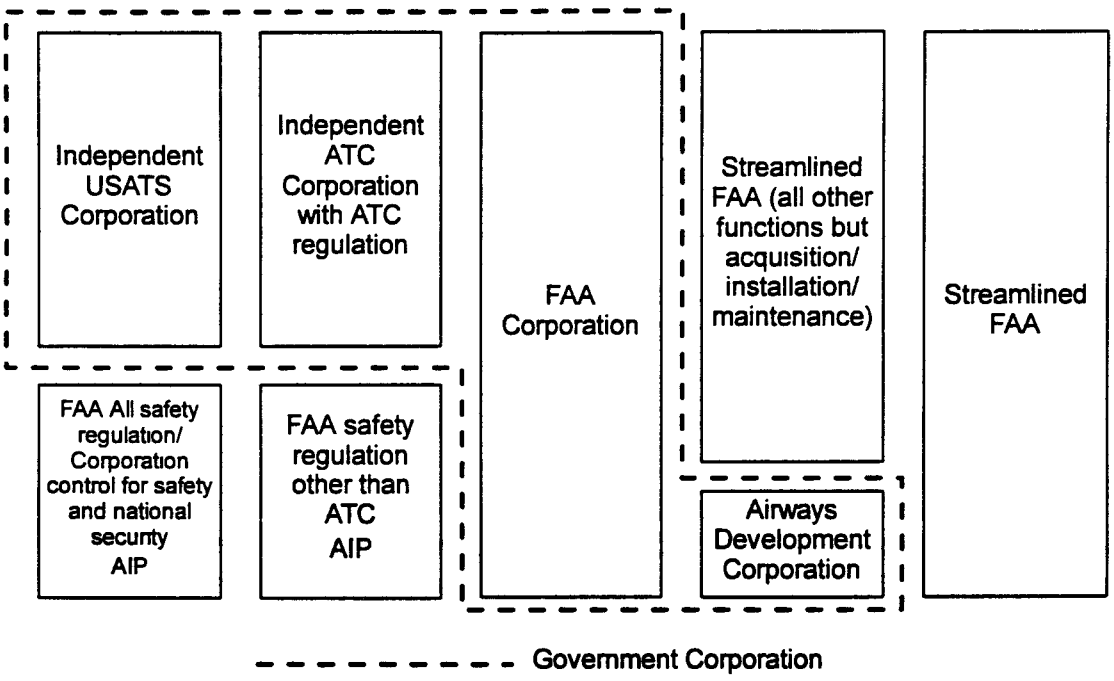
4.1 INTRODUCTION

A number of models were considered as the means to achieve the benefits of a government corporation for the ATC system. The primary goals in developing any model were to create an ATC structure to manage more efficiently the portions of FAA that provide operational rather than public-policy services and to ensure the continued high level of ATC system safety. One model stands out as the most effective option--the U.S. Air Traffic Services Corporation (USATS) independent of FAA except for safety regulation, certain rulemaking authority and national security. This model can be designed to meet the safety, security, development and efficiency needs of the nation's aviation system. Key issues regarding this model are discussed in this section. Figure 4-1 shows a schematic of the models considered, with the recommended model at the left side of the figure.

The EOC also considered three other corporate models and a streamlined FAA model. The corporation models included an ATC corporation with ATC safety regulatory responsibility, an FAA Corporation, and an Airway Development Corporation with only equipment modernization and maintenance responsibilities. The ATC model considered including airport development investments with the corporation. The streamlined FAA model assumed that all NPR recommendations would be implemented within the existing organization. A discussion of the models that were not selected is included later in this section.

Figure 4-1

Schematic of Models



It also found that the authority to manage airspace and resolve disputes on safety and national security should be retained in a government agency. Placing USATS under the regulatory oversight of FAA ensures system safety while allowing the ATC function the independence to operate like a business.

4.2 RECOMMENDATION: AN AIR TRAFFIC SERVICES CORPORATION AND AN FAA GOVERNMENT AGENCY

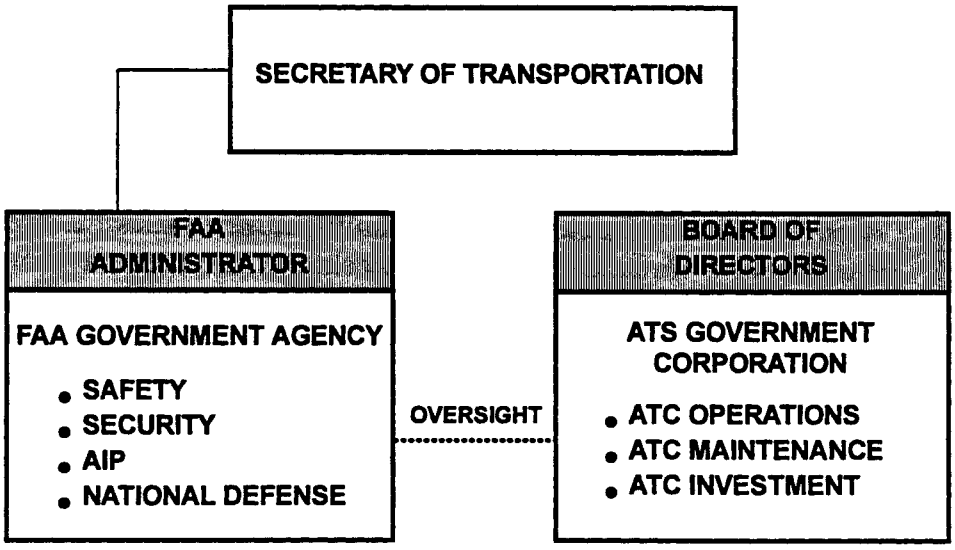
In conducting its work, the EOC found the ATC system to be more like private sector entities that FAA regulates rather than like the rest of FAA, of which it is a part. The EOC recommends that an independent ATS Corporation be established that would be responsible for controlling air traffic, maintaining ATC equipment, modernizing facilities, performing research into future ATC system needs and supporting national defense activities. Currently airspace rulemaking procedures are coordinated with the following

FAA offices: Airports, Flight Standards, Air Traffic, Airway Facilities, and System Development. These organizations would be divided between FAA and the corporation, but it is important to maintain the involvement of the interested parties in decisions about airspace. The corporation would have the primary responsibility for developing airspace regulations, which would be implemented through the Administrator. The Administrator would also have the authority to delegate certain rulemaking powers directly to the corporation. The FAA would continue to give full consideration to safety and national defense requirements.

As it does with respect to the hundreds of other entities it oversees, FAA would retain its historical mission of ensuring safe and secure aviation, including its current regulatory and safety functions, along with safety oversight of the USATS. It also would manage safety and security research and facilities and equipment programs. It would be responsible for the promotion of airport safety and development, including the Airport Improvement Program (AIP) and Passenger Facility Charge (PFC). Figure 4-2 provides a schematic of how USATS would relate to the FAA and DOT.

Figure 4-2

Structure of USATS Corporation



The corporation would be accountable to the Secretary of Transportation, who would retain oversight through representation on the Board of Directors and would have limited direct control of the corporation through disapproval authority of rates and fees

and borrowing. The corporation would be free from day-to-day management by FAA or DOT. However, the FAA Administrator could intervene in compelling safety or national security issues that are unresolved. The Administrator would not be directly involved in the business of the corporation but would have the authority to ensure safety, national security and adequate coordination of airspace management decisionmaking. The corporation would be structured to include many of the incentives of a business, such as a Board of Directors, responsibility for paying liability settlements and the establishment of user fees that are linked to the cost of providing the service.

4.2.1 USATS CORPORATION

USATS would be financially self-sufficient and supported by user fees. It would be governed by a Board of Directors with 11 members. The Board would consist of the CEO, the Secretary of Transportation (or designee), the Secretary of Defense (or designee) and eight members appointed by the President and confirmed by the Senate. The appointed members would represent commercial and noncommercial aviation interests, airports, labor, and the business community. The CEO would be selected by the Board. All other Board members would serve five-year staggered terms. The Board would have a permanent safety committee of three members. Key issues for the corporation are discussed below:

- **Maintaining Accountability for Safety**--USATS would be responsible for the safe and secure operation of the ATC system, subject to the regulatory oversight of FAA. The corporation would receive the same oversight regarding air traffic operations from National Transportation Safety Board as FAA does today. The corporation would be responsible for compliance with regulations, just as aircraft manufacturers ensure that aircraft design and manufacture meet FAA standards today. This is done through a process of both detailed FAA review and self-certification by the manufacturer. FAA has the authority to intervene at any point in the process. Consistent with existing practices, the Administrator would have the authority to intervene in compelling safety issues where they are unresolved between FAA staff and the corporation. The safety committee on the Board would be established to place safety concerns at the highest level in the corporation.

- **Supporting the National Defense Mission**--Under USATS there would be no break in the operation of the joint civil-military ATC system. National defense interests with regard to Special Use Airspace and acquisition would be protected and the existing authority of the Secretary of Defense concerning the use of the national airspace system would be maintained. The

Department of Defense (DOD) would have input in the corporation via representation on the corporation's Board of Directors. The ATC system, along with the FAA, would be transferred to DOD in times of crisis or war. The corporation's enabling legislation would require it to cooperate with DOD on joint acquisitions of ATC equipment and in other areas.

- **Preserving Political Oversight**--DOT would retain oversight of USATS through its representation on the corporation's Board of Directors and the Secretary of Transportation's authority to disapprove the level of user charges and borrowing. FAA/DOT and Congress would also retain safety oversight through the FAA's authority to intervene in compelling safety and national security issues.

  The corporation would be subject to enumerated provisions of the Government Corporation Control Act and would be required to submit an annual business-type budget to Congress that would be subject to annual public review. The corporation would have an annual financial audit performed by an independent public accountant.

- **Being Responsive to Users**--Users would be represented on USATS's Board of Directors and would have a direct role in the decisionmaking process, as would other members of the Board. A significant role for users in the governance of the corporation promises to make dramatic improvements in decisionmaking. The corporation would be required to operate under public notice procedures before it could close facilities, discontinue safety services, or change fees.

- **Encouraging Cost/Productivity Improvements**--The efficient operation of the corporation would be encouraged through user membership on its Board of Directors, more direct linkage of user charges to the cost of producing services, and management of the corporation's performance. This structure is designed to provide autonomy for the corporation while ensuring safety.

- **Meeting International Commitments**--The corporation would provide technical expertise to support international agreements where appropriate. The corporation would be reimbursed for matters it undertakes for other parties. The remaining FAA and the Assistant Secretary for Aviation and International Affairs would be the focal points for matters related to international agreements.

- **Addressing Environmental Issues**--USATS would comply with environmental standards appropriate for a federal corporation. The FAA would be responsible for setting the standards for compliance with any laws or standards, and the corporation would be responsible for implementation. Enabling legislation would authorize USATS to provide support and technical assistance to the FAA where FAA has environmental regulatory authority, such as environmental research and certification standards.

4.2.2 THE FAA GOVERNMENT AGENCY

FAA's regulatory programs, safety research, and facilities modernization, and the promotion of airport safety and development, including PFC and AIP, would be funded through the conventional authorization and appropriations process with Trust Fund revenues and general treasury revenues. Current relationships with DOT, DOD, NTSB and Congress would be maintained.

FAA operates two facilities that would have major functions supporting both USATS and FAA: the Aeronautical Center in Oklahoma City, OK and the FAA Technical Center in Atlantic City, NJ. The EOC recommends that the FAA Technical Center stay with FAA and the Aeronautical Center be transferred to the corporation. USATS would fund those activities that FAA conducts on its behalf at the Technical Center for a period of five years. After that time, the corporation could continue to use the facilities or find alternative sources of supply for these services. FAA would lease space at the Aeronautical Center from the corporation. Key issues for FAA are discussed below:

- **Maintaining Accountability for Safety**--Safety regulation of the aviation system would remain with FAA. It would continue to promulgate regulations, which would be implemented under the provisions of the Administrative Procedures Act and Executive Orders that govern regulatory programs and procedures. FAA would oversee the corporation's safety performance and develop enforcement and oversight mechanisms to carry out this authority. Consistent with existing practices, the FAA Administrator would have the authority to intervene in the corporation to resolve issues between the corporation and FAA to ensure the safety of the system.

  The FAA would be subject to the same safety oversight from DOT, NTSB and Congress that FAA has today.

- **Supporting the National Defense Mission**--FAA would continue to support national security. The FAA Administrator would have the authority to

intervene in the corporation to resolve national security issues between DOD and the corporation. FAA and USATS would be transferred to DOD in times of crisis or war.

- **Preserving Political Oversight**--FAA would continue to be subject to the same budget and oversight processes as it is today, subject to any government-wide reform that may result from the current NPR initiative.

- **Meeting International Commitments**--DOT and the State Department would continue to retain authority for international agreements. It would use the corporation's technical expertise where appropriate.

- **Addressing Environmental Issues**--FAA would continue to be subject to all current environmental laws, and for setting certain environmental standards for the ATS Corporation. There are numerous environmental issues that would require the involvement of both the corporation and FAA. These include environmental research, international representation, certification standards for aircraft noise and engine emissions and operational issues such as noise in national parks. FAA would retain responsibility for these issues. The corporation would have statutory responsibility to support and implement them as applicable, and these responsibilities would be explicit in its enabling legislation.

4.3 EVALUATION OF THE RECOMMENDED ALTERNATIVE

- The recommended approach of a government corporation for ATC responds to the NPR/National Airline Commission recommendations.

- To reach the goal of creating a businesslike ATC corporation and retaining the safety responsibility within the traditional government organization, FAA would be divided into USATS and a remaining FAA. Users would be required to work with two organizations but they generally work with specific offices today, since most contacts with FAA today fall into unique channels such as the Airports, Air Traffic, the Flight Standards or Aircraft Certification organizations. Potential disagreements caused by the differing views of the two organizations could be resolved by the Administrator.

- The corporation would be freed from government acquisition, personnel and budget constraints because it would not be spending general treasury

revenues. The remaining FAA would gain some freedoms through the government-wide revisions that result from the current NPR initiatives. This would result in two different systems for the two organizations, but the aim of both efforts would be similar--to provide flexibility through less specific but more functional requirements.

- The recommended approach maintains continuity of the organization with regard to safety. It continues a recognized aviation authority (the Administrator) to ensure safety and national security. It provides a single source for oversight and conflict resolution.

- The corporation contains many attributes of a business that a government agency would not be able to attain. These attributes provide incentives that could significantly improve the efficiency and effectiveness of providing ATC services.

4.4 OTHER MODELS CONSIDERED BY THE TASK FORCE

Four additional models were studied by the Task Force in its efforts to develop an optimal structure. They were:

- An ATC Corporation with ATC safety regulatory responsibility (including an option involving airport development);

- An FAA Corporation;

- An Airway Development Corporation, including only the equipment modernization and maintenance responsibilities; and,

- A Streamlined FAA with reforms made within the basic existing structure.

A discussion of these models follows.

4.4.1 AN ATC CORPORATION OUTSIDE FAA WITH NO REGULATORY RESPONSIBILITY

In this model, FAA would be split into an ATC Corporation and a remaining FAA that included non-ATC safety regulation, AIP and research and facilities and equipment

modernization for safety and security. The corporation would have authority for ATC safety regulation and be regulated by the FAA for non-ATC safety areas.

The ATC Corporation would be financed by user fees and the Secretary would have the authority to disapprove its rates. The FAA would be funded by the Trust Fund for AIP and safety research and facilities and equipment, and by general treasury revenues for the regulatory function.

A variation of this model included placing responsibility for the management of the AIP within the ATC Corporation. This variation envisioned that the corporation would manage appropriated AIP funds from an investment services standpoint and gain efficiencies by combining airspace/navigational aids capital improvement planning with airport planning and development. Although gaining these efficiencies could result in some enhanced responsiveness to the aviation industry, the variation was discarded to preserve the added oversight determined essential in conventional public works funding. Key issues for this model included the following:

- **Maintaining Accountability for Safety**--The ATC Corporation would be responsible for the safe and secure operation of the ATC system and also for its ATC safety regulation. The corporation would be responsible for compliance with safety regulations other than for ATC, just as aircraft manufacturers ensure that aircraft design and manufacture meet FAA standards today. The ATC Corporation would receive the same oversight from NTSB as FAA does today.

  The FAA would oversee the ATC Corporation's safety performance but would not develop and issue ATC safety regulations. The FAA would develop enforcement and oversight mechanisms to carry out its oversight authority. The corporation would receive the same safety oversight from DOT, NTSB and Congress that FAA has today.

- **Supporting the National Defense Mission**--Under an ATC Corporation, there would be no break in the operation of the joint civil-military ATC system. National defense interests would be protected and the existing authority of the Secretary of Defense concerning the use of the national airspace system would be maintained. The Department of Defense would have input in the corporation via representation on the corporation's Board of Directors. The ATC system, along with FAA, would be transferred to DOD in times of crisis or war. The corporation's charter would require it to cooperate with DOD on joint acquisition of ATC equipment and in other areas.

- **Preserving Political Oversight**--DOT would retain oversight of the ATC Corporation through its representation on the corporation's Board of Directors and the Secretary of Transportation's authority to disapprove the level of user charges. FAA/DOT and Congress would also retain safety oversight through FAA. The corporation would generally be required to submit an annual business-type budget to Congress, and have an annual financial audit performed by an independent public accountant. The FAA would be subject to similar budget and oversight processes as the current FAA, subject to any government-wide reform that may result from the current NPR initiative.

- **Being Responsive to Users**--Users would be represented on the ATC Corporation's Board of Directors and would thereby have a voice in decisionmaking.

- **Encouraging Cost/Productivity Improvements**--The efficient operation of the ATC Corporation would be encouraged through user membership on its Board of Directors, linkage of user charges to the cost of producing services and management of the corporation's performance.

- **Meeting International Commitments**--The ATC Corporation would provide technical expertise to support international agreements where appropriate. The corporation would be reimbursed for matters it undertakes for other parties. The FAA and the Assistant Secretary for Aviation and International Affairs would be the focal point for matters related to international agreements.

The EOC's evaluation of this model concluded that it responds to the NPR/National Airline Commission recommendations. The corporation would be freed from acquisition, personnel and budget constraints. The remaining FAA would gain some freedoms through the government-wide revisions that result from the current NPR initiatives. This would result in two different systems for the two organizations, but the aim of both efforts would be similar--to provide flexibility through less specific but more functional requirements.

This model was not pursued because of concerns about establishing the ATC safety function outside the traditional government organization, and because it would divide the safety regulatory functions. The FAA Administrator would have no direct authority to intervene in ATC safety issues.

4.4.2 AN FAA CORPORATION

An FAA Corporation, within DOT, would hold the entire organization together. It would have the responsibility to continue the mission of operating and modernizing the ATC system and of ensuring safe, secure and efficient air transportation. The ATC function of the corporation would be financed completely by user fees, outside the normal authorization and appropriations process. The AIP would be financed by the Trust Fund and safety regulation would be funded by general treasury revenues, both within the authorization and appropriation process.

- **Maintaining Accountability for Safety**--The FAA Corporation would be responsible for safety regulation. The corporation would receive safety oversight from DOT, NTSB, and Congress as does FAA today. Any issues related to safety would be resolved within the corporation. It is likely that a limited safety oversight function would be established in DOT to oversee the corporation.

- **Supporting the National Defense Mission**--Under an FAA Corporation, there would be no break in the operation of the joint civil-military ATC system. National defense interests with regard to special use airspace and acquisitions would be protected and the existing authority of the Secretary of Defense concerning the use of the national airspace system would be maintained. The Secretary would be represented on the corporation's Board and existing provisions for the transfer of the ATC system to DOD's control in times of crisis or war would be retained. The corporation's charter would require it to interface with DOD on joint acquisitions of ATC equipment and in other areas.

- **Preserving Political Oversight**--DOT would retain oversight of and influence over the FAA Corporation through its representation on the corporation's Board of Directors. The Secretary of Transportation would have the authority to disapprove the level of user charges. The corporation would also be subject to the Government Corporation Control Act and thus would be required to submit an annual business-type budget to Congress. Those parts of the corporation funded through appropriations would remain under the direct oversight of Congress.

- **Being Responsive to Users**--Users would be represented on the FAA Corporation's Board of Directors and would thereby have a voice in decisionmaking. A degree of user input is likely to be reflected in all the FAA Corporation's activities, including the safety regulatory area. Final

decisions on all broad safety/regulatory policy matters would, of course, remain with the Board.

- **Encouraging Cost/Productivity Improvements**--The efficient operation of the FAA Corporation would be encouraged through user membership on its Board of Directors, the linkage of ATC user charges to the costs of producing services, and management of the corporation's performance. However, the FAA Corporation would have some activities that remain funded through the Trust Fund and General Fund-based appropriations.

- **Meeting International Commitments**--There may be a need to establish a new function within DOT or to expand the responsibilities of the Assistant Secretary of Aviation and International Affairs to assume governmental responsibilities under international agreements. DOT would rely on the FAA Corporation for technical input to support these commitments.

This model was perceived as less than optimal for several reasons. While there would have been benefits in keeping the FAA together as an organization, there was concern about establishing the safety regulatory and oversight functions outside the traditional government organization. There was also a concern that users, through Board membership, would have had some authority to oversee safety regulation. It was likely that a new safety oversight function would be required in DOT to oversee the corporation.

There also was concern that the corporation's independence and flexibility, especially with regard to the ATC function, would have been greatly diminished by the fact that the CEO and Board would have been directly accountable to the Executive Branch and Congress for major portions of the organization's funding. It would be more difficult to isolate the ATC function as a business and achieve the associated benefits.

4.4.3 AN AIRWAY DEVELOPMENT CORPORATION

Under this model a separate Airway Development Corporation would be established to acquire, install and maintain, and dispose of ATC and navigation system facilities and equipment. The corporation would develop and acquire the necessary equipment and provide equipment maintenance from requirements established by FAA. The FAA would retain the mission of operating the ATC system and ensuring the safety of the system. This model would allow for acquisition and personnel reform for facilities and equipment modernization and maintenance.

- **Maintaining Accountability for Safety**--The FAA would be responsible for the safe and secure operation of the ATC system and all safety regulation. The Airway Development Corporation would be responsible for compliance with all regulations that apply, just as aircraft manufacturers ensure that aircraft design and manufacture meet FAA standards today. The FAA would oversee the corporation's ability to acquire, install and maintain safe and effective ATC equipment and develop enforcement and oversight mechanisms to carry out this authority. The FAA would have the authority to intervene directly with the corporation, as it does with other contractors, to ensure the safety of the system.

- **Supporting the National Defense Mission**--Under this model there would be no break in the operation of the joint civil-military ATC system. National defense interests would be protected and the existing authority of the Secretary of Defense concerning the use of the national airspace system would be maintained. The Airway Development Corporation, along with FAA, would be transferred to DOD in times of crisis or war. The corporation's charter would require it to cooperate with DOD on joint acquisitions of ATC equipment.

- **Preserving Political Oversight**--FAA would oversee the Airway Development Corporation as it would a major contractor. DOT and Congress would continue their existing oversight of FAA.

- **Being Responsive to Users**--Users would provide input to FAA as they do today. This structure would be more responsive to users if facilities and equipment modernization were accelerated.

- **Encouraging Cost/Productivity Improvements**--The acquisition process could be carried out more efficiently without the constraints imposed by Federal acquisition laws and regulations.

- **Meeting International Commitments**--The FAA and the Assistant Secretary for Aviation and International Affairs would continue to be responsible for matters related to international agreements.

This model was not pursued for several reasons. It would be difficult for the corporation to develop and operate like a business since it would have little autonomy. The corporation would be completely dependent on FAA for funds and FAA would be dependent on the existing authorization and appropriations processes. As such, while parts of organizations might resolve acquisition and personnel problems, there would be

no increase in financial autonomy. The benefits of dividing the agency in such a manner would be limited, but the problems resulting from dividing the ATC operations and modernization/maintenance functions could be great.

4.4.4 A STREAMLINED FAA

Under this model FAA would remain a Federal agency within DOT and be streamlined through enhancements from the NPR recommendations on personnel, acquisition and budgeting. FAA would continue to operate and modernize the ATC system and ensure safe, secure and efficient air transportation. The FAA would also continue to be funded by the Trust Fund and general treasury revenues within the normal authorization and appropriations process.

- **Maintaining Accountability for Safety**--The FAA would retain existing responsibilities for safety and would receive safety oversight from DOT, NTSB, and Congress as it does today.

- **Supporting the National Defense Mission**--FAA and DOD would maintain existing agreements and working relationships. The FAA would be transferred to DOD in times of crisis or war.

- **Preserving Political Oversight**--Political oversight by DOT and Congress would remain the same as it is today. FAA would continue to be funded through the existing authorization and appropriations process.

- **Being Responsive to Users**--Users would provide input to the FAA as they do today.

- **Encouraging Cost/Productivity Improvement**--The efficient operation of FAA would be encouraged through personnel, acquisition and budget reforms along the lines of the NPR recommendations as described later in the sections on each of these areas.

- **Meeting International Commitments**--The FAA and the Assistant Secretary for Aviation and International Affairs would continue to be responsible for matters related to international agreements.

This model would have retained FAA intact as a government agency and improved the efficiency and effectiveness of the organization by implementing the NPR recommendations for personnel, acquisition, and budgeting. Existing safety and national

security assurances would be maintained. The EOC believes that reform within the existing FAA structure would not result in the changes necessary to allow FAA to most effectively respond to user needs and modernize the ATC system. In the last ten years there have been 24 different reforms and reorganizations of FAA, and none of them have significantly alleviated the acquisition, personnel and budgeting problems of the agency. FAA's senior management has spent far too much time trying to fashion stop-gap measures to address its problems rather than to meet the challenges of the future. It is clear that incremental change will not produce the desired reforms.

The goal is to change an existing entity and make it more businesslike and responsive to its customers. Some sort of fundamental change is necessary or the reforms would be viewed by FAA and users as simply one more reorganization. By retaining the existing structure, governmental practices that are typically conservative, avoid risk taking and constrain staff to following elaborate standardized procedures would be maintained. The Metropolitan Washington Airports Authority is a good example of an organization that made a fundamental change. It has made significant advances since it was separated from the Federal government budget, acquisitions and personnel constraints.

While the NPR recommended sweeping changes for all government agencies, it specifically rejected the reorganization of the FAA as a government agency and endorsed the establishment of an ATC Corporation. It was questionable whether the personnel, acquisition and budgeting reforms recommended by the NPR were far-reaching enough to allow the ATC system to be operated in a way to deliver services to users efficiently and to rapidly respond to technological change. It is also unlikely that the changes recommended for all government agencies would meet the specific needs of the ATC system. The ATC system is fundamentally different than the rest of FAA. Leaving it within the existing structure would limit being able to address its unique problems as a package. In addition, while the NPR proposes to make the budget process less burdensome, FAA would still be required to seek annual appropriations and would not have the ability to tie fees to the services provided to accelerate capital funding in order to provide benefits to users of the system more quickly. The FAA operates a service that is unique in the government and it requires unique solutions for financing, acquisition and personnel.

4.5 CONCLUSIONS

The development of an independent ATC corporation under the safety oversight of FAA is the EOC's recommended approach. This form of restructuring provides the best opportunity to resolve FAA's acquisition and personnel problems, which have hampered

the operation and modernization of the ATC system. It also provides USATS with the necessary financial autonomy to operate this important national function on an efficient, businesslike basis. Figure 4-3 shows a summary of the EOC's evaluation of the models. Most importantly, it allows these improvements to take place while maintaining, and most likely enhancing, the high level of safety in the U.S. ATC system.

Figure 4-3

SUMMARY EVALUATION OF MODELS

	USATS Corporation	ATC Corporation with ATC Safety Regulation	FAA Corporation	Airway Development Corporation	Streamlined FAA
Financial Independence	Excellent	Excellent	Good	Poor	Poor
Adequacy of ATC Funds	Excellent	Excellent	Good	Fair	Fair
Tenure	Excellent	Excellent	Excellent	Poor	Poor
Safety Accountability	Excellent	Good	Good	Excellent	Excellent
Personnel	Excellent	Excellent	Excellent	Fair	Fair
Procurement	Excellent	Excellent	Excellent	Good	Fair
Micro Management	Good	Excellent	Good	Poor	Poor
Culture Change	Excellent	Excellent	Good	Poor	Poor
Improved Effectiveness	Good	Excellent	Excellent	Fair	Fair
Integrated Aviation Planning	Excellent	Good	Excellent	Fair	Excellent
National Security	Excellent	Good	Good	Excellent	Excellent

5

THE CORPORATION AND AVIATION SAFETY

5.1 INTRODUCTION

The ATC system's primary responsibility is to maintain separation between aircraft under its control, providing both airborne separation of aircraft in flight and surface separation of aircraft on taxiways and runways. Despite the large number of aircraft handled by the ATC system daily, there are very few accidents. This impressive safety record is the product of the ongoing collaboration of the private sector, quasi-governmental entities and government entities that comprise the aviation community. Recognizing this excellent performance, the EOC made maintaining that outstanding level of aviation safety its principal objective in developing USATS.

The EOC specifically designed the corporation and its policies and procedures to ensure that safety would be maintained and enhanced well into the future. The EOC commissioned reviews of ATC safety issues by both FAA and independent safety experts and examined the safety of corporatized ATC systems in other countries. The EOC also reviewed existing mechanisms of safety regulation and used that regulatory model as the basis for its proposed system of oversight of USATS.

Based on its research, outreach and analysis, the EOC concluded that its recommendation to establish a government corporation to provide air traffic services will maintain or improve on the existing high levels of aviation safety in the U.S. In fact, to the extent that the corporation makes more effective use of technology and personnel, the EOC believes that safety could be enhanced.[13] The remainder of this section describes the

[13]For example, aviation safety will be significantly enhanced when improved navigational systems such as GPS can be used in Alaska, where land-based coverage is limited and accident rates are relatively high.

current safety regulatory process and the proposed process for safety regulation of the corporation, and discusses how the design of USATS resolves key safety issues.

5.2 EXISTING SAFETY REGULATORY PROCESS

The current system by which FAA oversees aviation safety is based on statutory authority granted by Congress under the Federal Aviation Act of 1958. The Act directs FAA to operate the nation's ATC system and oversees airport safety and aviation security. The Act also authorizes FAA to regulate the design and manufacture of aircraft and spare parts; airline operations and maintenance; training and crew qualifications; and flight schools, repair stations, and other types of certificate holders. In doing so, Congress recognized that there are certain functions, such as safety regulatory oversight, that are best carried out by government. Other functions can and should be performed outside of the traditional government structure, with regulatory oversight if appropriate.

The FAA addresses these areas in rules that are compiled in the Federal Aviation Regulations (FARs), consistent with the principles of due process and public notice required under the Administrative Procedure Act. The FAA also operates an extensive system of surveillance to ensure that regulations are met, and may revoke certificates or take civil actions against individuals or corporations that fail to comply with regulations.

The FAA's safety oversight of USATS would be an extension of this model, by which FAA regulates a large number of aircraft manufacturers, airline operators and aircraft maintenance facilities. Among the FAA-regulated manufacturers and suppliers are 70 Production Certificate holders (manufacturers of aircraft, engines and accessories), 8 Approved Production Inspection Systems; 1,045 Parts Manufacturer Approval holders (manufacturers of FAA-approved replacement parts); and 310 Technical Standard Order Authorization holders (manufacturers of standard parts). Further, FAA regulates some 8,418 air operators (including airlines, commuters, air taxis and others) and over 6,000 other air agencies (flight schools, repair stations and maintenance technician schools.) The Bureau of Labor Statistics estimates that more than 730,000 people were employed in the production and operation of commercial (non-military) aircraft in the U.S. in 1992.

These activities, like the provision of air traffic services, are critical to safety and the private firms involved are intensely competitive and under strong cost pressures. In these areas, the "arms-length" regulation and oversight by FAA works well. It has not been necessary for FAA to build, operate or maintain aircraft for them to be safe. Similarly, the EOC believes that it should not be necessary for FAA to build, operate or maintain the ATC system for it to operate safely, either.

5.2.1 AIRCRAFT CERTIFICATION

The FAA does not build aircraft nor does it prescribe how aircraft are designed or built. Rather, FAA requires aircraft to meet certain standards and achieve specific results, such as in the number of and performance of back-up systems, use of fire-resistant materials, handling characteristics and many others. The several separate steps in this process are described below.

Manufacturers must first submit their designs and documentation to FAA for detailed review. If all designs and proposed processes meet the requirements of the FARs, FAA will issue a "Finding of Compliance".

After this initial approval, the manufacturer must produce a prototype aircraft, which is then subjected to extensive test flights. The test flights may or may not reveal necessary design changes, but the basic purpose is straightforward: the manufacturer must demonstrate that the aircraft, in fact, meets the standards specified by the FARs. If these tests go well, the aircraft receives a Type Certificate.

The manufacturer must then show, in detail, how its quality assurance program will maintain quality equal to that of the certificated prototype when the aircraft enters production. FAA must find the process meets all FAR requirements. The manufacturer then receives a production certificate, authorizing it to produce and sell the aircraft. FAA provides continued surveillance of the manufacturer's quality assurance system as long as the aircraft remains in production. FAA uses the manufacturer's production certificate as the criteria against which to audit ongoing production. The principle again is straightforward: does the manufacturer follow its approved processes?

As a practical matter, FAA recognizes that aerospace technology changes rapidly, and those on the front line are best positioned to stay current. FAA relies extensively on a system of Designated Engineering Representatives (DERs) and Designated Manufacturing Inspection Representatives (DMIRs) to certify that designs and production processes remain airworthy. Designees usually are employees of the manufacturers designated by the FAA Administrator to approve tests and data in accordance with FAA safety policies. If FAA were to determine that a manufacturer had pressured such an employee to "look the other way," the Administrator could take punitive action. This system has been audited several times by FAA and others, and has been shown to work well.

The 1958 Act also gives FAA extensive enforcement powers in aircraft certification. If designs, production processes or test flights are not convincing, FAA can simply withhold type certification, thus delaying production. If production processes are not

followed, or if a new problem emerges in an aircraft after it enters service, FAA can issue airworthiness directives, which mandate specific action to correct a problem, or FAA can take action against the manufacturer's production certificate for that aircraft.

Under this system of FAA regulation and certification, American aircraft and engine manufacturers have become the dominant producers in the world market. Accidents resulting from problems in design or manufacture are very rare. Clearly, regulatory procedures for assuring the safe design and manufacture of aircraft work well for private companies.

5.2.2 AIRLINE REGULATION

FAA regulates air carriers in a conceptually similar way to that used for regulating aircraft and engine manufacturers. Before an airline can offer its first flight, a carrier must meet demanding requirements in the FARs. A carrier must adopt an organizational structure that includes a director of operations and a director of maintenance. The carrier must then develop manuals for operations, maintenance and training to identify exactly how business will be conducted, followed by a compliance manual, in which the carrier relates each safety requirement in the FARs to a specific reference in the company's manuals. FAA must accept the safety compliance portion of all operators manuals, and FAA approves everything in the maintenance manuals.

In addition, a carrier's flight crews, flight attendants, maintenance technicians, dispatchers, and other key employees are subject to the FARs, which define minimums for initial qualifications and recurrent training. Pilots also must meet separate requirements to be "rated" for each type of aircraft in a carrier's fleet. Finally, a carrier must undertake "proving flights," in which it must demonstrate that its system will indeed operate properly. Operations are also strictly regulated: duty time limitations, minimum crew sizes and other requirements ensure safe flight.

The FAA ensures continued safe operation by assigning a Principal Operations Inspector (POI), a Principal Maintenance Inspector (PMI) and a Principal Avionics Inspector (PAI) to each air carrier. A Principal Inspector is charged with monitoring a carrier's safety performance. Geographic inspectors support POIs, PMIs and PAIs with day-to-day surveillance of the air carrier system. To supplement FAA surveillance, airlines conduct self-audits, which FAA monitors. If a self-audit identifies violations of the FARs, a carrier must report them within 10 days and document that it has taken or is taking action to correct the problems. FAA then usually takes no punitive action; the goal is to ensure safety, rather than let enforcement and punitive action become goals in their own right. FAA also routinely analyzes its inspection data and other data to identify troubled

carriers. Troubled carriers may be subject to a full review under the National Aviation Safety Inspection Program, in which all aspects of the airline are subject to inspection.

When regulations are violated, FAA may exercise its considerable enforcement powers, including civil action against airmen or airlines and the authority to suspend or revoke the certificates of airmen or airlines. Suspension or revocation of an air carrier's operating certificate is a dramatic action that FAA must approach with some prudence, but FAA does revoke certificates when necessary.

5.2.3 SAFETY ASSURANCES IN THE ATC SYSTEM

Aviation safety is further enhanced by the ATC system, which provides safe separation of aircraft in the air, and on the surface, at the 400 busiest airports. The ATC system includes nearly 30,000 navigational aids that are maintained by FAA technicians. The FAA specifies minimum qualifications and recurrent training requirements for controllers and technicians as it does for pilots and other airmen.

Numerous redundancies are added to the system to provide an ample margin of safety. For example, any commercial flight with more than 10 seats must operate with two or more pilots. Aircraft, too, are designed with redundant systems; if a system should fail in flight, commercial aircraft will have one or even two backup systems. The ATC system also has redundancies to ensure safety, including company dispatchers to follow flights and provide in-flight information to pilots. Similarly, ATC computers provide conflict alert to automatically notify controllers if safe separation is breached.

The ATC operations and maintenance organizations also operate their own well-developed quality assurance programs, as do FAA's regulatory organizations. The FAA's flight inspection program tests the operation and accuracy of navigational aids every day using FAA crews and aircraft. Similarly, FAA investigates accidents to determine whether regulations were violated and to reduce the likelihood of accidents in the future. In addition, FAA's safety office provides data and analysis to the Administrator and others, independently of FAA's operational organizations.

These internal checks and balances are supplemented by the NTSB, which investigates accidents independently to determine probable cause, and is free to study and report on any issue deemed to affect safety. Based on its investigation of accidents or its independent studies, NTSB may recommend changes in procedures and regulations to improve safety, and FAA is required by law to substantively respond to these recommendations within 90 days.

5.3 SAFETY REGULATION AND OVERSIGHT OF THE USATS

As proposed, USATS would separate the operation of the ATC system from the regulatory oversight of those functions. This represents a change from the present situation, established by the Federal Aviation Act of 1958, where FAA both operates the ATC system and provides oversight of its safety performance. However, the aviation system has changed dramatically since that consolidation. Technological developments and the introduction of better and more reliable equipment have revolutionized operations and resulted in a steadily declining accident rate. The aircraft manufacturing and airline industries are now mature and well-established.

The 1958 Act also consolidated a number of government entities to address concerns about the lack of a single focus of responsibility and accountability. The EOC's design for an ATS Corporation maintains this single point of accountability in the FAA Administrator, who would have authority to oversee safety, national security and adequate coordination of airspace management policy, and to resolve any safety-related disputes between FAA staff and the corporation. The EOC believes that its proposed structure not only will maintain the high level of aviation safety, but is likely to improve safety performance.

Under this structure, the ultimate responsibility for aviation safety, security, regulation, and oversight would remain within a traditional government organization. The FAA Administrator would retain control over U.S. airspace, and ultimate authority in all issues related to safety and security. The FAA Administrator would oversee and regulate the corporation by promulgating regulations or other requirements to ensure the highest levels of safety and security in actions performed or prescribed by the corporation. The Administrator would also resolve disputes between the corporation and elements of FAA.

The corporation would develop air traffic rules governing flight of aircraft, for the navigation, protection, and identification of aircraft, for the protection of persons and property on the ground, and for the efficient utilization of airspace. The FAA Administrator would review such rules and, if approved, provide for their implementation. The corporation would exercise day to day supervision/control over the movement of aircraft in U.S. airspace, and would assign by order or directive the use of airspace, including airways, and air traffic and navigational aids.

The FAA Administrator would enforce the corporation's rules, orders, and directives, but the corporation is not prohibited from enforcing its rules, orders and directives through delegation from FAA or otherwise. The Administrator would have the authority to modify or revoke an airspace assignment of the corporation, or may direct the corporation to withdraw or revise a rule, order, or directive, for reasons of safety, security

or the national defense. The Administrator could direct the corporation to cease any action that the Administrator determines may compromise aviation safety or security, or to undertake any action necessary for aviation safety or security in the public interest.

5.3.1 STRUCTURE OF SAFETY OVERSIGHT

The EOC recommends that USATS be treated in much the same way as aircraft manufacturers and air carriers are today. The FAA would not oversee the corporation by prescriptive regulation, but would instead use tools comparable to those it already uses to oversee manufacturers and air carriers.

The enabling legislation for USATS would grant FAA the statutory authority to regulate the corporation. The FAA would provide oversight by building on the ATC organization's existing policies and procedures. Major changes to present procedures would be subject to public processes. The FAA would have also have authority for surveillance of the system, assessing the corporation's internal quality control and enforcement. Under this system, FAA would have to approve any substantial change in airspace procedures, just as it must now approve substantial changes in procedures made either by manufacturers or air carriers.

5.3.2 RESOLVING DISAGREEMENTS

Under the proposed organizational structure, both USATS and FAA staff would have access to the Administrator in safety and regulatory matters. In the event that there were disputes between the two parties, the Administrator would have the authority to resolve the disputes if safety were at issue. For example, if there were a disagreement between the corporation and FAA staff on changing separation standards, which could not otherwise be resolved, the Administrator would have the authority to determine the final outcome.

The authority of the Administrator to resolve safety issues exists within the agency today. Carrying this aspect forward in the new organizational structure ensures that any organizational rivalry that might arise between FAA and USATS would not affect public safety.

5.3.3 ENFORCEMENT AND SANCTIONS

Not only would FAA set the safety standards that would govern USATS operations, it would also have enforcement powers. These powers would be manifest through the authority of the Administrator to impose sanctions or override any corporation decisions that could negatively affect safety. This authority would be expressed in something akin to airworthiness directives (ADs), perhaps termed "air traffic directives." Like ADs, these directives could require new, specific action or could constitute cease and desist orders, supported by the full effect of law.

5.4 SAFETY, COST AND SYSTEM CAPACITY ISSUES

Currently, FAA is responsible for both safety and system capacity and cost. Decisions are made internally within FAA. If these decisions are split between two organizations, with safety the primary concern of FAA and system cost and capacity the primary concern of USATS, then the result could be a change in the balance among these concerns and an over-emphasis on one or the other. The EOC identified a number of key safety, cost and system capacity issues and reviewed USATS policies and procedures to address those concerns. The remainder of this section discusses how the design of USATS resolves those key safety issues.

5.4.1 AIRCRAFT SEPARATION IN THE AIR AND ON THE GROUND

Issue: Improved radar or other technological developments may well make it possible for aircraft separation standards to be reduced while still maintaining the current level of safety. Under many different financing mechanisms, increased capacity means increased revenue. But if separation standards are reduced by more than is warranted by the technological development or are reduced in the absence of technological development, the risk of collision, either in the air or on the ground, may be increased. Thus, the question becomes under what conditions and by how much should separation be reduced? The question is multifaceted because separation standards can be different under different weather conditions, in different terminal airspace, and at different airports because of runway configuration and different local conditions.

Resolution: The EOC's recommendation provides for regulatory oversight by FAA of those decisions that have a potential impact on safety. Before changing methods of operating, USATS would have to demonstrate that changes in procedures--including separation standards--would not result in unacceptable safety performance. Because the

Administrator would have absolute authority to approve or disapprove such changes, the public's concern with safety in these matters should be well represented.

5.4.2 NAVIGATION AIDS AND PRECISION APPROACHES

Issue: The decisions involved in selecting navigation aids and precision approaches are primarily quality versus cost. How much precision is enough and, to the extent that added precision comes with added cost, how much is a little extra precision worth? A second question is how reliable should the equipment be and how much redundancy should be provided to compensate for equipment failure? Here again, added reliability and added redundancy come with added cost. The choice is similar to the decision airlines make in equipping their aircraft for Category II versus Category III approaches. With more precise, and expensive, equipment, aircraft operations can be conducted in lower visibility weather conditions. Whether it is worth the additional cost depends on how often these weather conditions are found in the cities the aircraft operator serves and what it is worth to the aircraft operators not to have to delay, divert, or cancel flights. The issue with reliability and redundancy of the equipment is similar. The less often the equipment fails or the more backup equipment is available in the event of failure, the more often aircraft operations can continue.

The cost versus reliability and redundancy issue raises questions of how USATS would decide on the equipment in which to invest. Another issue with navigation and especially approach aids is setting the conditions when the aids can and must be used. How is the decision made about when equipment must be used to operate and how are the weather limits when operations are permissible to be set? As with separation standards, some sort of regulatory oversight by FAA are needed. Both FAA and the corporation would have an incentive to require use in marginal conditions. However, the responsibility for setting the safety requirements for both ground and airborne equipment would remain with the FAA.

Resolution: Under the proposed organizational structure, the current levels of safety performance should be maintained because current ATC operating procedures form the basis for the safety standards that USATS will be required to meet by FAA. Changes in those procedures would require FAA approval. The FAA would be able to disapprove the use of new equipment or procedures if they were unreliable or otherwise unable to meet at least current levels of safety performance. The final authority in these areas would rest with the FAA Administrator.

5.4.3 AIR TRAFFIC CONTROL EQUIPMENT PERFORMANCE, REDUNDANCY, AND RELIABILITY

Issue: Cost, performance, redundancy, and reliability differences are found in ATC equipment including radars, computers, weather displays, and communications equipment. How good does this equipment have to be and at what cost? Which equipment improvements are well worth while and which add little, if anything, to system performance? Which improvements would be useful, but are so expensive that they shouldn't be made? Many of the decisions on air traffic control equipment are conventional decisions about capital expense and operating expense. More reliable equipment means less repair expenses. In many cases, more sophisticated equipment could also mean savings in operating costs.

Resolution: The organizational challenge is making sure the safety element is an integral part of the investment decision. As has been noted previously, FAA will hold USATS accountable in both its operations and in its investment decision-making functions. Any decisions affecting safety would be subject to review and reversal by FAA.

5.4.4 TRAINING OF AIR TRAFFIC CONTROL PERSONNEL

Issue: FAA currently sets the standards for selection and training of the personnel to operate the ATC system, provides both initial and recurrent training, and employs the trained personnel. With the ATC system operated by a separate ATC organization, these arrangements will have to be continued by the corporation. FAA would have the authority to set standards for the qualifications of people eligible to operate the ATC system, while USATS would have final authority with respect to hiring and promotion decisions. There might well be disagreements between FAA and the corporation over the appropriate training standards.

Resolution: The review of controller training and qualifications by FAA already takes place at private control towers and those operated by private companies under contract to FAA. With airline pilots, the FAA delegates much of the authority to the airlines themselves, subject to FAA performance standards. The airlines provide both initial and recurrent training. Airline employees act in lieu of FAA examiners and certify that the pilots have successfully completed the necessary training satisfactorily and are qualified to fly, subject to random FAA checks. Similarly, in aircraft manufacture, the FAA designates an engineering representative that is a company employee but functions as a representative of FAA in the design approval process. The FAA then examines the system the airlines and aircraft manufacturers use, rather than performing continuous monitoring of the detailed operations themselves. Under the proposed plan, a similar set of

certification procedures would be developed by the corporation for its personnel. Initially, current training methods would be adopted. The process would be approved much as the processes for manufacturers and airlines are currently approved. Any changes in these processes would be subject to review and revision as necessary by the FAA. As is the case with airline personnel such as pilots and flight attendants, FAA would establish standards which the corporation would have to meet.

5.4.5 SPECIAL PROCEDURES

Issue: ATC capacity is influenced by concern for special procedures. For example, the minimum separation between two parallel runways required for independent operations during IFR conditions is governed in part by concern about adequate airspace to execute missed approaches without undue threat of collision. A question likely to be asked increasingly as capacity fails to keep pace with demand is how much do these and other considerations add to cost and reduce capacity. With a separate corporation, these questions will no longer be internal discussions within FAA, but will be posed between organizations. Moreover, the costs of providing for these procedures will be borne by USATS while the FAA sets the standards. As with issues of separation standards, there is a potential tension between the conflicting incentives of FAA and USATS. As a result, FAA would likely be called upon to provide a much more explicit rationale for the regulations it sets and the corporation for the procedures it specifies.

Resolution: This issue is not very different from those found in FAA's regulations of aircraft operators, manufacturers and other parties. The current level of safety in existing special procedures would be transferred to USATS as part of its existing policies and compliance with these would be overseen by FAA. Any changes in procedures would be subject to FAA review.

5.5 IMPLEMENTATION ISSUES: ASSURING SAFETY IN AIR TRAFFIC CONTROL

FAA has always had the responsibility to ensure safety throughout the aviation system. When ATC is moved to a separate organization, FAA could face new problems in assuring the appropriate level of safety in the ATC system; these are discussed below.

Oversight and Enforcement. In regulating USATS, FAA would face the same sort of oversight and enforcement issues it faces in regulating manufacturers, operators, and maintenance facilities. An early decision, and one that will require periodic review in the

early years, is the level of resources needed to provide oversight of air traffic control safety. The greater the standardization of facilities and procedures, the fewer the number of inspectors needed. Similarly, greater automated oversight of performance parameters would allow more careful targeting of inspectors at facilities having difficulties. FAA's experience with other inspection and enforcement programs should guide the design of the ATC oversight and regulatory programs. FAA would develop criteria for applying various levels of sanctions against the corporation, modeled on FAA's experience under the current regulatory structure.

Public Perception of Safety Levels. In addition to operating safely, it is important that the public believes the air traffic control system is safe. The EOC has been careful to design appropriate safety mechanisms for the corporation. For example, the EOC has recommended that USATS establish a permanent Safety Committee within the Board of Directors. This will provide a safety presence at the highest levels within the corporation. The committee will be charged with establishing on-going safety quality assurance programs for the corporation.

Standardized Facilities and Procedures. FAA's oversight and regulatory task will be strongly affected by whether the air traffic control operator retains the high degree of standardization in ATC facilities, equipment, and procedures. Standardization allows procedures developed for and lessons learned in one facility to be immediately adopted throughout the system. It also greatly simplifies the oversight and inspection process. However, standardization limits the flexibility to adapt to varying regional or local conditions and can raise costs by providing features where they may not be needed. It also limits experimentation and innovation. The regulatory model proposed requires that the corporation justify any major changes in facilities or procedures. As a result, FAA will likely be called upon to provide a much more explicit rationale for the regulations it sets and USATS will be required to provide a corresponding rationale for the procedures it employs.

5.6 SAFETY IMPLICATIONS OF USER FEES

The EOC has recommended that direct user fees be assessed only in those cases that would not discourage the use of ATC services. As a consequence, only commercial operators will be responsible for paying user fees. General aviation is an integral part of our nation's air transportation system, and its use for business transportation by companies as well as entrepreneurs is essential to the economic growth of the country. General aviation complements the airlines by providing the only air linkage between many communities, thereby facilitating commerce and mobility.

Because of general aviation's various contributions, and in order to provide a substantial incentive to enhance safety, the EOC recommends no increase in aviation taxes or the imposition of ATC fees for this group of users.

User fees would be set initially in the enabling legislation and in time ratified by the Board of Directors, subject to disapproval by the Secretary of Transportation.[14] Users would have direct input into the process because of their direct participation on the corporation's Board. The broader public interest issues--including safety--could be addressed when changes in fee levels or rate structures come before the Secretary.

5.7 CONCLUSIONS

The significant benefits that can be realized through the corporatization of ATC operations include an enhanced level of aviation safety. The proposed reorganization plan includes safeguards against the diminution of safety that some might assert would take place with the separation of regulatory and operating functions. Under the EOC recommendations, FAA would institute regulatory oversight mechanisms similar to those which it already exercises with respect to air carriers and manufacturers.

Under the EOC's recommendations, the Administrator would retain ultimate authority in all issues related to safety. If there are disputes between FAA staff and the corporation, the Administrator would have the legal capability to resolve the disputes when safety issues were involved. The Administrator's authority would also extend to issuing sanctions, including air traffic directives, which would directly modify USATS procedures.

Although there are a number of specific issues that must be resolved, the general framework proposed here has worked in similar circumstances with respect to air carrier services and in the manufacture of aviation components and aircraft. Given the extensive experience that FAA has built up in the regulation of these private entities, it is likely that this expertise could be transferred to the regulation of another operator. In addition, other countries have reorganized their ATC systems in a similar manner without any adverse safety consequences. Ultimately, because the corporation would have greater freedom to

[14]Current bilateral agreements require the U.S. Government to encourage consultation between users and charging authorities and to encourage charging authorities to provide users with information necessary to establish the reasonableness of the charges. The FAA and the Corporation would be required to meet existing international obligations. These issues are discussed in Section 16 of this report.

implement new technologies more efficiently and rapidly, safety performance should improve as a result of corporatization.

FAA now ensures the safety of the ATC system through internal checks and balances. This mechanism works well but is not apparent to outside observers. With FAA providing safety oversight of USATS, these links between regulation and operations would be explicit. As a result, FAA will likely be called upon to provide a much more complete rationale for the regulations it sets and USATS will be required to provide a corresponding rationale for the procedures it employs.

6

NATIONAL SECURITY

6.1 INTRODUCTION

In restructuring air traffic control as a government corporation, the EOC recognizes that existing arrangements for joint civil and military operation of the ATC system must be maintained. The ATC system plays an important role in national security. It is vital to the movement of U.S. military forces and equipment, particularly in times of crisis or war. The DOD relies on national airspace to train, operate and conduct testing in support of military capability and readiness. Providing ATC services to the DOD is important for the testing of weapon systems and evolving tactics, and it is vital in training armed forces personnel. The U.S. national policy for deployment of forces worldwide directs the requirement for the DOD system of ATC personnel and equipment.

To support the joint system, an extensive relationship is currently maintained between FAA and DOD. This extensive relationship governs joint civil and military operation and use of the national airspace system, joint ATC equipment acquisition, DOD provision of ATC service to civil users, shared facility maintenance responsibility, exchange of personnel, and transfer of the ATC system to DOD control in times of national emergency. Particular care would have to be exercised to ensure that this relationship is maintained and the transition to a corporation would be transparent in terms of protecting national security interests. The EOC believes that this is achievable.

6.2 SUPPORTING THE NATIONAL DEFENSE MISSION

The EOC specifically designed USATS to continue support of the national defense mission.

6.2.1 USATS AND THE REMAINING FAA

Under USATS, there would be no break in the operation of the joint civil-military ATC system. National defense interests with regard to Special Use Airspace and acquisition would also be protected and the existing needs of the Secretary of Defense concerning the use of the national airspace system would be maintained. The ATC system and the remaining FAA would be transferred to DOD in times of crisis or war. The corporation's charter would require it to cooperate with the DOD in joint acquisitions of ATC equipment and in other areas. Legislation would restate the remaining FAA's continued national defense responsibility as well.

6.2.2 DOD REPRESENTATION ON THE BOARD

The Secretary of Defense would be represented on the ATS Corporation's Board of Directors. DOD board representation would assure that the corporation addresses national security interests. Enabling legislation should clearly define the corporation's role in supporting national security efforts and the FAA Administrator's authority to ensure that support.

6.3 DOD LEGAL ACCESS TO AIRSPACE

Placing the ATC function in a wholly-owned government corporation would not reduce DOD access to airspace. Mutual cooperation and coordination between the two government entities and the recognition of the DOD mission by all concerned are cornerstones of the current system. Although the corporation's fiscal objectives might conflict with national defense interests, USATS and FAA must continue to work closely with DOD. The EOC believes that potential concerns could be adequately addressed. One concern for potential conflict of interest is with Special Use Airspace. Special Use Airspace provides critical training and testing capability and, as such, is vital to military readiness and national defense. Legislation must be carefully drafted to ensure full consideration for national defense requirements. As part of that obligation to consider national security interests, policy and procedures for delegation of airspace would remain basically

unchanged. DOD's capabilities to train, operate, and conduct testing in national airspace must be preserved.

In accordance with legislated responsibilities in this area, the Secretary of Transportation would provide oversight for those policies and procedures. The FAA Administrator, who serves as the airspace "trustee" (recognizing that airspace itself is in the public domain), would retain overall authority on airspace issues and resolve disputes as may be required.

Special Use Airspace policies and procedures, as outlined in the Federal Aviation Regulations (FARs) and handbooks would be maintained. The policy requirement for public notification allows DOD input into the proposal and approval process. Also, an established military and FAA personnel structure supports the procedures of the current airspace management system and would be retained. There would be no attempt to create a system, be it FARs or handbooks or other documents, that would allow unilateral action or give the corporation autonomous authority to deny previously approved or newly proposed airspace actions.

6.4 JOINT ACQUISITION SYSTEM

Enabling legislation for the corporation will seek limited exemption for DOD, restricted to the acquisition of ATC systems interoperable with the FAA/corporation. The DOD would only acquire equipment or services using contracts awarded by the corporation if the Secretary of Defense (or designee) determines that such acquisitions further the interests of commonality, interoperability, supportability, efficiency, or aviation safety. Interoperable air traffic systems account for a very minor part of DOD's overall acquisition, and are critical to the safety of the system.

New acquisitions procedures would be developed by the corporation to support the new procurement system. This would be done in consultation with DOD. The corporation would also consult with DOD on any changes to joint contracts and seek DOD agreement before taking action.

6.5 COSTS OF THE JOINT CIVIL-MILITARY SYSTEM

DOD estimates that it provides 20 percent of total (combined military and civilian) U.S. ATC services. Activity is measured at FAA ATC facilities for four major user types:

air carrier, commuter air taxi, general aviation and military. The military accounts for 14 percent of the activity at Centers, nine percent at TRACONS, four percent at Towers and two percent at Flight Service Stations. The integrated federal system results in an effective use of airspace and minimizes investment in ATC facilities and equipment. Civil traffic accounts for 18 percent of the activity at military ATC facilities.

Although the ATC system serves both civil and military users, prior FAA cost allocation studies have considered only FAA budget costs and not DOD costs. Since DOD is both a provider and a user of ATC services, the EOC recommends performing a cost allocation study for the entire civilian and military ATC system.

6.6 OPERATIONS AND SUPPORT

USATS would have the statutory authority to develop operational rules and regulations governing procedures, standards and certifications, which would be implemented through the FAA Administrator. USATS would have the same operational responsibilities regarding national security as FAA handles today. The remaining FAA would retain the statutory authority to issue safety and security regulations. The FAA Administrator would have oversight authority over national security, as well as for safety issues. Unresolved safety and national security issues could be brought by either the corporation or DOD to the Administrator for resolution.

The Federal Aviation Act of 1958 requires the Secretary of Transportation to give full consideration to the requirements of national defense. National security concerns would receive an equal level of consideration under the new organization. The FAA and USATS would have national defense responsibilities that will be prescribed by law. The corporation would have statutory responsibility for activities such as directly assisting in detection and monitoring known and unknown aircraft, cooperating as partners in the national drug interdiction program and sharing the cost of radar facilities used for both civil ATC and defense purposes. Legislation will provide for continuation of interagency agreements and joint contracts involving national defense and security.

The corporation and DOD would work cooperatively to manage the nation's airspace and to accommodate the needs of all users. The key goals would continue to be to provide transparent ATC services for all users and to enhance civil access to Special Use Airspace when no military activity is being conducted. The corporation would be responsible for approving exemptions to standard national operational procedures and policy for unique military missions. The FAA would approve exemptions in any of its oversight regulatory areas. During wartime both FAA and the corporation would be

placed in the direct chain of the national command authority. The current practice, governed by public law, where military officers are detailed to FAA to ensure national defense interests are safeguarded and the agency is advised about military requirements would be continued in FAA and the corporation. This would enhance the national system, directly benefitting both civilian and military uses.

6.7 INTERNATIONAL EXPERIENCE

Where ATC corporations have been established in other countries, addressing national defense issues was part of the process. However, it is difficult to draw any parallels or lessons learned in the national security arena since the U.S. policy of worldwide military deployment capability and the joint federal ATC system differ dramatically from other countries.

7

OUTREACH

7.1 INTRODUCTION

The EOC, the Task Force and the four Working Groups conducted extensive outreach activities to help the EOC in developing its recommendations on the form of USATS. To gather information on precedents, key personnel from other government corporations and foreign aviation authorities were interviewed. Aviation system users, FAA labor unions, and other governmental entities that would be affected by the development of a corporation were also contacted. In addition, many private sector organizations provided information on the financing of the USATS, and best practices in acquisition, budget/finance and personnel.

7.2 EXECUTIVE OVERSIGHT COMMITTEE OUTREACH ACTIVITIES

The EOC comprising senior officials from FAA, DOT and other organizations, was tasked with examining organizational models for restructuring FAA. In addition to FAA and DOT, the EOC had representatives from: other government agencies (DOD, Office of Personnel Management, Office of Management and Budget, Department of the Treasury and Department of Labor), representatives of other government corporations (St. Lawrence Seaway Development Corporation and Tennessee Valley Authority), and representatives of the National Airline Commission and National Performance Review.

The EOC was briefed by the United Kingdom's Civil Aviation Authority on how ATC services are provided in the United Kingdom and by Morgan Stanley on possible means of financing a corporation. The EOC also held an open meeting to obtain comments from the public, at which fifteen speakers presented their views. Two written statements were also submitted as a result of the public meeting. The speakers represented FAA unions, airlines, airports, general aviation, and passengers. Each speaker provided valuable input to the EOC's deliberations.

The commenters' positions varied, but generally supported retaining safety regulation and airport grants within the government. Most speakers supported the need for fundamental change in FAA. Further, many supported the idea of a government corporation, but did not support a completely privatized ATC organization. General aviation representatives voiced their concerns about increased cost, reduced access to the ATC system and safety.

7.3 CORPORATION ASSESSMENT TASK FORCE OUTREACH ACTIVITIES

The Task Force conducted a detailed analysis of how ATC could be restructured and reported its findings to the EOC. The Task Force was led by FAA and DOT managers, but also included representatives of the Departments of Justice, Treasury, and Defense; the Office of Management and Budget, and FAA unions. The Task Force attended briefings by representatives of ATC organizations from New Zealand, the United Kingdom, Australia, Canada and Germany. In addition, representatives of the U.S. Enrichment Corporation and the Tennessee Valley Authority briefed the Task Force on the organization and operation of government corporations. The Task Force also met with Marsh McLennan Insurance, the National Academy of Public Administration and aviation industry representatives to gather information on the restructuring of FAA and the development of a corporation. Individually, many Task Force members also took part in the outreach conducted by the Working Groups.

7.4 THE PERSONNEL WORKING GROUP OUTREACH ACTIVITIES

The Personnel Working Group (PWG), recognizing that outreach needed to include interviews with executives from the FAA organizations directly affected by a move to corporate models, developed an internal outreach questionnaire/interview guide and conducted a series of interviews with headquarters and regional managers and union

representatives. Members of the PWG also attended presentations by representatives of the aviation community, ATC corporations and aviation authorities from other countries and other interested groups. Outreach was conducted with the following organizations[15]:

Government Agencies

*Metropolitan Washington Airports Authority
DOD/U.S. Air Force/U.S. Navy
General Accounting Office
Central Intelligence Agency
Department of Veterans Affairs
National Aeronautics and Space Administration
*Office of Personnel Management Nuclear Regulatory Agency
Federal Reserve Board
National Institute of Standards and Technology

Government Corporations

*Tennessee Valley Authority
U.S. Enrichment Corporation
Federal Deposit Insurance Corporation
St. Lawrence Seaway Development Corporation
Office of Thrift Supervision
Pension Benefit Guarantee Corporation
Export-Import Bank
U.S. Postal Service
Federal Prison Industries
Bonneville Power Administration

FAA Unions and Other Labor Organizations

National Air Traffic Controllers Association
National Association of Government Employees
National Association of Air Traffic Specialists
Professional Airways System Specialists
National Partnership Council

7.5 THE GOVERNANCE WORKING GROUP OUTREACH ACTIVITIES

The Governance Working Group developed a set of core outreach questions to collect information from government corporations and international ATC organizations

[15]The asterisk denotes organizations where extensive outreach was conducted.

on precedents, their internal structures and how they handled their external relationships. The Governance Working Group's outreach included:

Government Agencies

*Metropolitan Washington Airports Authority
Treasury Department
Nuclear Regulatory Commission
Federal Reserve Board
*DOD/U.S. Air Force/U.S. Navy
Department of Justice
Office of the Secretary of Transportation

Government Corporations

*Tennessee Valley Authority
*U.S. Postal Service
*St. Lawrence Seaway Development Corporation
*Amtrak
*Farm Credit Banks

Users/Stakeholders

Air Transport Association
Martin Marietta
Airport Council International
General Aviation Coalition

International and Other Organizations

Transport Canada
*United Kingdom CAA
New Zealand ATC Corporation
Australia ATC Corporation
*National Academy of Public Administration
National Airline Commission
American Bar Association

Private Organizations

Morgan Stanley & Co.

7.6 THE BUDGET AND FINANCE WORKING GROUP OUTREACH ACTIVITIES

The Budget and Finance Working Group conducted outreach sessions to determine the budget and financial practices of numerous government corporations, foreign

government ATC corporations, and private corporations. The Working Group met with Department of the Treasury representatives and two investment banking firms to discuss financing methods and best business practices. The Working Group also contacted various aviation trade associations concerning the budget and financial practices of a restructured FAA. The Budget and Finance Working Group outreach sources included:

Government Agencies

Metropolitan Washington Airport Authority
DOD/U.S. Air Force/U.S. Navy
Department of Energy
Federal Accounting Standards Advisory Board
Securities and Exchange Commission
Office of the Secretary of Transportation
Office of Personnel Management
*Treasury Department
Congressional Budget Office
*General Accounting Office
Office of Management and Budget

Government Corporations

Tennessee Valley Authority
Rural Telephone Bank
Amtrak
*Federal Deposit Insurance Corporation
Farm Credit Banks
Commodity Credit Corporation
Federal Home Loan Mortgage Corporation
Federal Housing Administration Fund
Government National Mortgage Association
Student Loan Marketing Association
*Overseas Private Investment Corp.
Pension Benefit Guarantee Corporation
*U.S. Enrichment Corporation
U.S. Postal Service
St. Lawrence Seaway Development Corporation
Corporation for Public Broadcasting
Resolution Trust Corporation
Federal National Mortgage Association
Federal Crop Insurance Corporation

Private Organizations

Morgan Stanley & Co.
Arthur Andersen & Co.
Bankers Trust
American Management Systems

Users/Stakeholders

Air Transport Association
American Association of Airport Executives
Air Line Pilots Association
Airport Council International
Regional Airline Association
General Aviation Coalition

International and Other Organizations

EUROCONTROL
United Kingdom CAA
*National Academy of Public Administration
Reason Foundation
Logistics Management Institute
Missouri State Revenue System

7.7 THE ACQUISITION WORKING GROUP OUTREACH ACTIVITIES

The Acquisition Working Group met with representatives of government corporations that have gone through major acquisition reform to learn from their experience. The Working Group also met with stakeholders and private corporations to gain their particular insights. An industry survey of best practices for acquisition was prepared for the Working Group by Arthur D. Little. Among the organizations contacted by the Acquisitions Working Group were:

Private Organizations (through Arthur D. Little)

Allen-Bradley
General Electric
Evans & Sutherland
Ford
Florida Power & Light
Motorola
Chrysler
Xerox
Honda
Boeing
Texas Instruments
Hewlett-Packard
Fluor Daniel
Conrail

Users/Stakeholders

Air Transport Association
Airport Council International
Electronic Industries Association
CSSI
US Air
Martin Marietta

International and Other Organizations

British Rail
Canada Post
Massachusetts Bay Transportation Authority

Government Agencies and Corporations

Metropolitan Washington Airports Authority
DOD, U.S. Air Force
Tennessee Valley Authority

7.8 SUMMARY

The extensive outreach conducted by the EOC and Task Force played an important role in developing the specific recommendations for USATS in the areas of acquisition, budget/finance, governance and personnel. The Working Groups were able to compare existing FAA procedures and policies with best practices in private and public sector organizations. In addition, the study team was able to benefit from the experiences of other U.S. Government corporations and foreign ATC service providers in the design of USATS. Finally, the outreach provided valuable input on the concerns of all parties--including commercial and non-commercial aviation, labor unions, air passengers and the general public--about ATC restructuring and how it could best be carried out.

8

GOVERNANCE

8.1 INTRODUCTION

Both the NPR and the National Airline Commission concluded that the ATC system would benefit from using more businesslike practices. They stated that the airline industry, and the U.S. economy as a whole, would benefit if the ATC system's operation were more closely aligned with the needs of its principal customers.

A number of other studies identified deficiencies in FAA's current governance structure that seriously affect its ability to be responsive to customer needs and to acquire advanced technology for the ATC system. Among frequently cited deficiencies are:

- A lack of continuity in FAA's leadership. The average term of an FAA Administrator has been less than three years and Acting Administrators have run the agency for lengthy periods. This turnover at the top has contributed to inadequate long-term planning and strategic policy formulation, constantly changing priorities and a lack of accountability.

- An organizational culture that is not responsive to change, emphasizes conservatism and conformity, and lacks innovation.

- An inability to control operational decision making because of excessive external oversight by DOT, OMB and Congress.

A number of government and private corporations were studied to determine which governance structure would be most effective. This section addresses the three problems mentioned above and provides additional detail on how a corporation would be governed.

8.2 GOVERNANCE STRUCTURE

The EOC recommends the establishment of a government United States Air Traffic Services Corporation (USATS) with a Board of Directors to exercise oversight responsibilities and a Chief Executive Officer (CEO) to manage the day-to-day operation and safety of the system. The corporation would be wholly-owned by the government. USATS would be independent from FAA, but the Administrator would have the authority to intervene in compelling safety and national security issues where they are unresolved between the FAA staff and the corporation. Safety oversight of ATC would be the responsibility of FAA. The Board of Directors is expected to ensure a high level of safety in its direction of USATS, further enhancing the importance of aviation safety in the operations of the corporation.

A central issue is whether the recommended governance structure enables the Secretary of Transportation and the FAA Administrator to discharge their responsibilities for aviation safety and security as well as meet the national security missions of the ATC system. Under this structure, the responsibility for safety regulation and oversight remains within a traditional government organization. If there are disagreements between the corporation and FAA staff, the FAA Administrator would have the authority to intervene on safety, national security or airspace regulatory issues, serving as a single source of oversight and conflict resolution. There may even be additional monitoring resulting from some overlap in the safety and security staffs of FAA and USATS. National security interests will be protected by statutory requirements in the corporation's enabling legislation, by the Administrator's ability to intervene on national security issues and by DOD representation on the Board.

The decision to provide a linkage between the corporation and the Administrator was made principally because of concerns about safety. The objective was to leave a single aviation executive accountable for safety and to avoid segregating airspace management functions. The approach taken was to provide autonomy to the corporation so that it could achieve needed reforms while assuring that safety issues could be resolved. The EOC's recommendation is to ensure that the corporation has the independence to operate in a businesslike manner while retaining safety oversight in the traditional government agency.

The corporation allows for a number of business incentives that a government agency would not be able to attain. These include a governing Board of Directors with strong user representation, the responsibility of paying for liability settlements and the establishment of user fees that are linked to the cost of providing service. These incentives will make the corporation more efficient and effective.

The specific recommendations for the governance of USATS are shown below along with the rationale for selecting specific governance structures.

RECOMMENDATION: **Establish a wholly-owned government corporation for air traffic control within the Department of Transportation**

The alternative of mixed ownership was considered, but it appeared to be employed when a government function was to transition to private ownership eventually or the organization has a specific finite mission and the organization will terminate upon the completion of the mission. It was believed that a wholly-owned corporation could be structured to provide relief from the statutory constraints in acquisition, finance and budget and personnel that have been identified as leading to poor organizational performance. This measured step is supported by ample precedents and would avoid any appearance of conflict of interest between the owners and users of ATC services.

RECOMMENDATION: **The corporation will be subject to enumerated provisions of the Government Corporation Control Act and will submit an annual business-type budget to Congress, and will have an annual financial audit performed by an independent public accountant.**

The goal was to limit the need for extensive Congressional oversight while allowing Congress to provide broad policy direction. The proposal reduces budget reviews via minimal or no reliance on appropriations to fund activities. The corporation will come under specific provisions of the Government Corporation Control Act, which provides for the submission of an annual business-type budget not subject to line item reviews. The requirement for an annual financial audit by an independent public accountant ensures financial accountability without detailed Congressional oversight.

RECOMMENDATION: **The corporation will be governed by a Board of Directors with 11 members. The Board will be comprised of the CEO and the Secretary of Transportation and the Secretary of Defense (or designees), plus 8 members appointed by the President and confirmed by the Senate.**

Management direction and leadership of most sizeable private sector business entities is provided by a corporate structure in which a Board of Directors hires and evaluates a Chief Executive Officer who is responsible for day-to-day operations.

The central issue is whether a Board of Directors would add any value to USATS. Some government corporations report that their Boards are a source of diverse

perspectives and experience that complements that of their CEO. They also report it is beneficial to have their Board directly accountable for the success of their corporation. Others report that the effectiveness of the Board is highly dependent on the capabilities of its members, and resignations and delays in appointments hinder its usefulness. In addition, a Board is weakened in organizations that have close oversight and direction by secretarial officers. In the latter situation, they suggest that an Advisory Committee may be preferable to a Board of Directors. While the performance of Boards of Directors has been mixed, most government corporations have one (out of 27 government corporations surveyed in a recent study, 24 had a Board of Directors).

The EOC recommends a Board of Directors because it concludes that the corporation needs a "change agent" or means of bringing different perspectives and expertise to the governance of the organization. It serves as a vehicle for user input and is diverse in talent and perspective. It also provides stability and continuity of leadership. The EOC's recommendation for a Board of Directors is consistent with both NPR and National Airline Commission recommendations.

RECOMMENDATION: Members of the Board will include representatives of the Secretaries of Transportation and Defense (or designees), the CEO, commercial and non-commercial aviation interests, airports, labor, and general business interests. The Board will have a three-member safety committee.

The eight appointed members of the Board will provide representation for stakeholders, especially those who pay for the operation of the ATC system through fees. Appointed Board members will include representatives of commercial and non-commercial aviation, airports, unions and the business community. Four members of the Board will represent the interests of commercial aviation. This significant role for users in the corporation--not merely as advisors but as corporate directors--promises to improve corporation functioning dramatically. This also recognizes the direct and substantial financial stake that this group has in ensuring that ATC services promote safe and efficient air travel, that ATC services are provided at a reasonable cost, and that beneficial investments are not delayed. This strong user representation is critical to encourage sensible and cost-effective corporate decisionmaking.

The EOC chose a Board of Directors with user representation so that the corporation will collaborate with users on important decisions regarding system capacity, from the R&D stage through operations. In addition, the EOC believes that user representation will provide a force to assure that the corporation strove for efficiency in operations. DOD Board representation is to assure that the corporation addresses national security interests. The aviation members will represent the industry and labor will

represent FAA employees. The safety committee will serve as a permanent organization to place safety concerns at the highest level.

RECOMMENDATION: The non-designated members of the Board, will serve five-year staggered terms. The Chairman of the Board will be chosen from among Board members.

Fixed terms with staggered tenures were established to assure continuity of leadership and stability for the corporation. The role of Board is critical to making USATS more customer-oriented and accountable to users. Board members will, however, serve at the pleasure of the President.

RECOMMENDATION: The Board will meet at least quarterly. Its responsibilities will include strategic planning and approving major financial decisions, the annual budget and the level of user charges.

Quarterly meetings will enable the Board to provide strategic direction to the CEO and to keep apprised of the corporation's financial picture. The goal is to have the Board meet often enough to provide strategic guidance to the corporation but not often enough to encourage the Board to intervene in the day-to-day management of the corporation. The Board will be able to meet more often than quarterly, if necessary, to address emergencies or time-critical issues. Additional meetings are particularly likely in the early days of the corporation's existence. The EOC recommends that the Board of the corporation have the authority over decisions about contracting-out facilities, such as Level I towers.

RECOMMENDATION: The CEO will be selected by the Board and will serve as a member of the Board. The CEO is responsible for the day-to-day operation and safety of the system.

While there are precedents for a fixed term for the CEO in other government corporations, the EOC believed that this could hamper the flexibility of the Board. The CEO will serve at the discretion of the Board, and the Board will fix the term of employment and compensation for the CEO. The lack in continuity of leadership would be addressed in two ways. The members of the Board would have fixed and staggered terms. The selection of the CEO would not be political and his/her term would not be contingent on the tenure of the President.

The EOC recommends that the CEO be selected by the Board and serve on the Board. Other options considered included a CEO who would be elected by the Board but not be a member and a CEO who would be appointed by the President and could be

removed by the President. The EOC also recommends that the President be able to appoint an interim CEO to operate during the transition. This appointment could be made so that the corporation would begin transition while the Board was selected.

RECOMMENDATION: The Secretary of Transportation will have the authority to reject the kind and level of user charges set by the Board, subject to specific criteria. The FAA Administrator will serve as a single source of oversight and dispute resolution.

The EOC attempted both to limit involvement of the Secretary and Administrator in the day-to-day operations of the corporation and to address their significant interests in the performance of the corporation, specifically with respect to safety, intermodal issues, long-range planning and national security. The EOC attempted to balance these concerns in several ways. To address safety and national security concerns, the FAA Administrator will have the authority to intervene in the corporation and serve as a single source of oversight and conflict resolution.

In addition, the Board would include a three-member safety committee to establish a high-level emphasis on safety. The Board would also include the Secretary of Defense as a member to address national security concerns. To address intermodal issues the DOT representative on the corporation's board would be able to provide the perspective of the other modes while also carrying back the corporation's perspective to DOT. To address long-range planning, the corporation's strategic plan will be coordinated through the FAA Administrator to ensure a unified aviation plan. To address the financial performance of the corporation, the Secretary would have authority to develop standards for rate reasonableness and to disapprove the corporation's rates. The corporation would provide for public notice and comment on its fee proposals, and these would be crafted to be reasonable under the standards set by the Secretary.

The enabling legislation will incorporate those conditions under which the Secretary can disapprove user charges. The Secretary's oversight role of the corporation's fees is designed to prevent potential monopoly abuse. It also is recognized that this authority should be of a limited nature to allow the corporation the flexibility to operate in a businesslike manner. After consultation with the Attorney General, the Secretary may disapprove user fees that harm new entrants, diminish competition among users or lead to excessive fees for air service.

RECOMMENDATION: The Secretary of Transportation will have the authority to disapprove borrowing.

In order to prevent the potential need for a financial infusion from the government, it is essential that USATS use debt financing prudently. The Secretary of Transportation, in consultation with the Secretary of the Treasury, will have the power to disapprove the corporation's borrowing under the following circumstances:

- The corporation seeks to borrow at levels which exceed a reasonable prospect for repayment; or

- The corporation seeks to borrow for inappropriate, wasteful or unreasonably speculative activities.

This sharply circumscribed authority to disapprove borrowing will allow the corporation to make business decisions while protecting the public interest.

RECOMMENDATION: Current arrangements for joint civil and military operation and use of the national airspace system as well as joint DOT/DOD procurements will be maintained.

An extensive relationship is currently maintained between FAA and the Department of Defense. This relationship governs joint civil and military operation and use of the national airspace system, joint ATC equipment acquisition, DOD provision of ATC service to civil users, shared facility maintenance responsibility and transfer of the ATC system to DOD control in times of national emergency. Particular care would have to be exercised to ensure that this relationship is maintained and the transition to a corporation would be transparent in terms of protecting national security interests.

These above recommendations will enable the corporation to enhance accountability and a high level of safety, improve management flexibility, establish continuity of leadership and organizational priorities, increase responsiveness to users and implement businesslike practices.

8.3 OTHER ISSUES

8.3.1 LIABILITY

The corporation and its employees will remain under the standards of the Federal Tort Claims Act for civil liability purposes. However, the EOC recommends that the corporation not rely on the settlement fund for claims resulting from ATC system liability. Securing its own insurance will provide the corporation with incentives to minimize these costs and, as a result, will enhance safety. The corporation assumes responsibility for any legal or administrative costs for ATC-related litigation. It will undertake and pay for the activities in its own name. The corporation also may need to secure liability insurance for the Board of Directors.

8.3.2 SUE AND BE SUED

The enabling legislation of USATS should include a provision that the corporation be able to bring suit, or be sued, subject to the provisions of Title 28 of the United States Code.

8.4 TRANSITION ISSUES

An important transition consideration is to allow sufficient time for an orderly transition of ATC from the FAA to a government corporation. One year is recommended as a minimum transition period. For example, the transfer to Metropolitan Washington Airports Authority (MWAA) took over seven months of intensive effort. This was a smaller organization than FAA, and it was transferred intact. In another case, Amtrak officially had a six-month transition period; however, the actual transfer of personnel who operated the trains took almost ten years.

It may be necessary to phase-in the transfer of functions to the new corporation. Maintaining continuity of existing services is an overriding consideration. Personnel, payroll, accounting, acquisition and other systems must be designed. Other organizations, such as MWAA, used extensive contractor support in these areas to facilitate the transition.

Finally, selecting the Board and an interim CEO (within 30 days of passage of the legislation) so that the corporation or its transition team can function during the transition

is a necessity. Their expertise could be used during the transition, and they could set the direction for the corporation from its inception.

9

ACQUISITION

9.1 INTRODUCTION

The EOC believes that the FAA acquisition process takes too long, lacks flexibility and accountability, and results in products and services that cost too much. Micromanagement of the acquisition process by other levels of government aggravates the problems of this already unwieldy system. The statutes and regulations that direct FAA's acquisition system were created to prevent fraud, the waste of taxpayer money and favoritism in the award of contracts. Instead, the regulations inhibit FAA in the timely acquisition of advanced technology equipment and results in the inefficient use of three critical resources:

- Time is wasted in focusing on the acquisition system's procedures, rather than on results;
- People are not used effectively in an acquisition system that discourages innovation and rewards them for following rules and avoiding protests and audit reviews; and,
- Money is wasted by delayed acquisitions, the purchase of obsolete technology and cost overruns.

Unlike any other federal agency, FAA is charged with the huge real-time operational responsibility of providing a safe, orderly and expeditious system of air traffic control through the nation's airspace, directly affecting the well-being of a major American industry. In a real sense, the federal government controls the production line of the U.S. airline industry, and FAA is already behind the technology of the industry.

The complexity of the acquisition process has delayed the modernization of the ATC system. According to an April 1993 GAO report, the average delay in the implementation of NAS plan projects is five years. The slow pace of modernization not only delays future benefits to users, it also causes problems with the operation of the existing system. This winter air traffic controllers at Dallas-Fort Worth International Airport found themselves working with blank radar screens and dead radios--with 10 aircraft approaching the airport, 2 cleared to land and 37 waiting to take off. A computer problem had caused an extensive power failure and backup systems failed as well Radio contact was restored quickly although radar screens were blank for 15 minutes, and the planes cleared to land were guided down by controllers who could see them through the rain. Ten days later, a power surge at Seattle-Tacoma International Airport blacked out all radar screens there for four minutes. Unfortunately, these were not isolated incidents. Many such failures are caused by antiquated equipment whose replacement has been delayed by complex acquisition regulations.[16]

In fairly straightforward acquisitions it can typically take four years before a contractor begins its work. The process begins with the development of a Missions Needs Statement, performance requirements, budget estimate and a budget request. By the time the budget is approved by Congress, two years have passed. It then takes two years to prepare the procurement request package, advertise the proposal, complete the technical evaluation, negotiate with those firms in the competitive range, and award the contract. Equipment delivery typically takes at least another three years after development of a prototype and production.

Thus, even relatively simple equipment acquisitions take up to seven years to complete, with acquisition of more complex systems taking over ten years to complete. The ATC system is becoming increasingly dependent on information technology where product life cycles can be as short as a few years. The existing acquisition system is simply not designed to meet the needs of an organization whose efficiency depends on the timely application of advanced technology.

The existing acquisition system also creates technical compatibility problems between systems. For example, during the competitive design phase of the voice switching and control system (VSCS) acquisition, bidders were not allowed to hold discussions with IBM the contractor that held the contract for the advanced automation system (AAS), although the VSCS contractors were responsible for the interface with AAS. FAA was concerned that such communication could have been viewed as a compromise of the competitive process for VSCS, leading to a protest by the eventual losers.

[16]New York Times, March 15, 1994.

Acquisition laws and regulations are rigid, complex and over-proceduralized. Managers must cope with over 10,500 pages of statutory, Office of Management and Budget (OMB), Office of Federal Procurement Policy GSA, DOD, DOT and FAA instructions on acquisition matters.

Examples of the impact of major statutes and associated regulations include the following:

- The Brooks Act authorizes the General Services Board of Contract Appeal to consider bid protests to federal information service procurements. FAA has faced an average of 10 such protests annually in recent years. Although FAA has successfully defended against over 90 percent of those protests, the process has delayed important acquisitions and required significant expenditure of resources;

- In most instances, the Competition in Contracting Act (CICA) requires FAA to solicit and evaluate all potential offerers, no matter what their expertise or qualifications. The FAA is further restricted from dealing with a limited number of qualified sources. In general, CICA requires that competition be maintained over the life of a program resulting in new solicitations and sometimes new contractors from one phase to the next.

- The Federal Acquisition Regulation precludes FAA from using its expertise to make timely programmatic and business decisions. The Federal Acquisition Regulation forbids comparison of offerors' proposals, making it difficult to consider key differences between proposals, which inhibits FAA from negotiating the best terms.

- FAA's cost-effective acquisition of appropriate advanced technology equipment is impaired by its links to changing appropriations, one-year budgets and other restrictions on expenditures.

- The Small Business Act requires FAA to go through the Small Business Administration (SBA) to contract with small and small disadvantaged businesses. SBA participation in the contracting program has been an impediment to the acquisition process. The existing procedures are burdensome, complex, redundant, unnecessary and add time to the acquisition process.

The NPR proposed broad reforms for the acquisition process, but until specific proposals emerge, it is unclear how these will affect the FAA. It is critical that the

acquisition process be restructured as a package to address its unique issues. Although the NPR stresses streamlining and delegation wherever possible, it continues to maintain the structure of current statutes and regulations. These tie the corporation to other government agencies and processes that preclude the corporation from being entirely accountable for its actions and from being as effective as a business.

The current acquisition process would continue to allow any interested party to submit proposals whether or not they are qualified. The result is that FAA expends valuable resources to comply with lengthy procedures. Relief from CICA would permit the corporation to develop, maintain and select suppliers from technology-specific qualified supplier lists, which would permit competition among selected, qualified suppliers. The corporation would form a partnership with its suppliers to develop realistic solutions to user requirements. This procedure would allow the corporation to trade-off cost and technical considerations in selecting a successful supplier, using evaluation factors that would include proven past performance, management capability, life-cycle costs and quality. While this initiative is partially fostered under the NPR's innovative contracting approaches, it does not provide relief from CICA, which prevents the partnership arrangements that would involve the suppliers in the planning process and ensure their participation in determining which programs will provide the greatest benefit and are most cost effective.

Unlike the NPR reforms, the corporation's acquisition process would allow target costing techniques that would involve contractors in establishing design-to-cost objectives and to motivate them to reduce costs creatively. The corporation would also have the ability to use the same contractor throughout the total acquisition cycle if good business reasons justify such practices.

9.2 RECOMMENDED BEST ACQUISITION PRACTICES

The Acquisition Working Group identified the characteristics of an optimal acquisition system that will enable USATS to buy what it needs, when it needs, from whom it wants, at the best price, and with the flexibility to make required changes. Ten essential recommendations, requiring legislative relief, are necessary to implement the optimal acquisition system. The EOC accepted the recommendations of the Acquisition Working Group and the Task Force.

RECOMMENDATION: Design simplified acquisition guidelines in lieu of rigid regulations

USATS should be exempted from existing acquisition statutes and regulations and replace them with simplified guidelines on how to acquire products and services, reflecting best practices in private industry and other successful government corporations. Specific legislative exemptions are discussed in greater detail later in this section.

RECOMMENDATION: Ensure a predictable and stable flow of funds, without restrictions on allocation

The FAA is restricted by a budget process that micromanages its use of financial resources. A substantial portion of its funding is one-year, ear-marked, or assigned to a specific category of use. These budgetary limitations make it difficult for FAA to plan and execute the acquisition of large scale systems that require many years to design and implement.

Benefiting from predictable and stable sources of funds, USATS would be able to incur multi-year obligations, use life-cycle funding and make the best business decisions concerning capital investments.

RECOMMENDATION: Develop, maintain, and select contractors from technology-specific qualified contractor list

A system of pre-selecting suppliers, based on demonstrated performance and capabilities (quality, technology, speed, productivity, leadership and finance) could reduce overall costs and improve quality. Competition for contracts would be limited to those suppliers with the certified capability to perform.

RECOMMENDATION: Permit competition among selected qualified suppliers or use sole source based on good business judgment

The current acquisition system encourages awards to the supplier offering the lowest price technically acceptable proposal--without regard to cost realism, past supplier performance, or "best value."

The EOC recommends that the corporation be permitted to use bona fide competition for contacts, limited to those suppliers with the capabilities to do the job. Such procedures would enable the corporation to trade-off cost and technical considerations in selecting a successful supplier. Evaluation factors other than cost to be considered would include technical competence, proven past performance, management capability, life cycle costs and quality.

The EOC also recommends that USATS be permitted to negotiate with a single supplier if good business reasons (cost, timeliness, continuity, efficiency, etc.), justify such practices.

RECOMMENDATION: Maintain investment in proven contractors throughout the life of a program

Acquisitions typically have a well-defined life cycle that includes the following stages: requirements definition; strategy and planning; procurement (solicitation, negotiation, selection, etc.); implementation (testing, deployment, etc.); support; and disposal. USATS Corporation should have the freedom to use the same contractor across acquisition phases, without new competition, if good business reasons justify such practices. If a supplier has proven superior performance in one phase of a program, continuation of that contract on a sole source basis should be allowed, providing continuity in programs and ultimately resulting in better products and cost savings.

RECOMMENDATION: Write contracts with flexibility to modify scope or enhance requirements without competition

The EOC recommends that contracts negotiated under a new acquisition system have the flexibility to modify the scope of the acquisition and to add enhancements as required. USATS must have the ability to accommodate changes in requirements during the acquisition life cycle of complex advanced technology systems in a timely manner and without new competition. User participation on the Board of Directors ensures that the corporation's management will be tasked to deliver new equipment on time and within budget. However, when technology or requirements change, there must be a process to accommodate these without delay.

RECOMMENDATION: Aviation stakeholders and customers should be involved in setting requirements and priorities

The EOC recommends that USATS adopt procedures to involve customers and stakeholders early in the acquisition process. Continuous user involvement is important to ensuring that products will meet operational requirements and, it results in both higher quality products and increased customer satisfaction. Since most opportunities for cost reduction occur early in an acquisition program, the corporation should ensure that acquisition officials and suppliers involve customers and stakeholders in determining which programs will provide the greatest benefit and are most cost-effective. Early planning ensures that the corporation will purchase products and services that provide the greatest value to the aviation community.

RECOMMENDATION: Corporation and suppliers form partnerships to develop realistic solutions to user requirements

The EOC recommends that USATS make suppliers partners, establishing long-term relationships based on mutual trust and mutual benefit. Building partner-like relationships with suppliers and involving them in the planning process would result in realistic cost and schedule and conformance to each. In addition, a supplier may be willing to assume some of the development cost to maintain a longer-term relationship with USATS.

RECOMMENDATION: Allow suppliers to propose system design within specific target costs

The EOC recommends that USATS employ target costing techniques in its acquisition system. Target costing is used to set total cost goals for programs. The early supplier involvement is invoked in establishing design to cost objectives and motivates suppliers to reduce costs creatively. Target costing, if properly used, results in cost reductions, greater commitment and innovation from suppliers, and reduces gold-plated requirements.

RECOMMENDATION: Eliminate unnecessary oversight that does not add value

The EOC recommends that oversight be based on the assumption of individual and team competence and responsibility. People should be empowered to get the job done and held accountable for the results of their work. In an effective acquisition system, oversight adds value and promotes coordination, rather than reviewing technical matters. Oversight should focus on decisions affecting major program measures and policy matters. The use of cross-functional acquisition teams will provide checks and balances on decision making.

9.3 LEGISLATIVE EXEMPTIONS

Each piece of existing legislation governing federal acquisition activities was adopted for good reasons on its own. In the aggregate however, these regulations represent rigidity, as well as burdensome and time-consuming approval processes and oversight. In contrast to that, the EOC believes that the corporation charter should provide for exemption from certain statutes and regulations in order to fully implement the optimal acquisition system. Relief from these regulations will permit effective, timely and responsive FAA acquisitions. Exemption from, but not limited to, the following statutes and regulations, is recommended:

- Federal Aviation Act (Section 303)
- Brooks Act;
- Competition in Contracting Act;
- Federal Acquisition Regulation;
- Small Business Act;
- Appropriations Authority;
- Office of Federal Procurement Policy Act;
- Regulations for Construction/Services/Supplies;
- Integrity Acts;
- Real Property and GSA Regulations;
- Procurement Protest Act;
- Economy Act; and,
- Other Administrative Acts and Executive Orders.

USATS should be expected to adopt the intent of many of the above statutes and regulations; however, the corporation would not be required to follow the rigid regulations, approval processes, and oversight associated with compliance. For example, the Small Business Act and Part 19 of the Federal Acquisition Regulation address the solicitation and award of contracts that are set aside for small business or small disadvantaged businesses. This policy must be followed by government agencies. There are no similar type requirements for private industry. USATS would foster the intent to set aside certain acquisitions for small business, small disadvantaged businesses and woman-owned businesses. Outreach sessions with several private industries and government corporations indicated that it is common practice for them to set goals for small business awards. Those goals range from 5 to 35 percent of their annual acquisition budget. In order to support these businesses, the corporation will develop procedures that will allow for the CEO to determine an appropriate goal. However, it is recognized that the corporation would not be burdened with the cumbersome oversight and record-keeping required under federal laws.

9.4 TRANSITION ISSUES

The EOC recommendations for creating an optimal acquisition system involve major changes in internal procedures and its relationships with suppliers and stakeholders. Changing from an executive agency to a government corporation requires consideration of certain transition issues:

- Maintain current relationships with DOD and other federal agencies to meet certain government-wide obligations; in particular, enabling legislation would seek limited relief from federal laws for DOD acquisition relating to national ATC system interoperability, thus continuing joint procurement under the proposed new system for the corporation.

- Determine the extent to which current interagency agreements will be valid under a new structure and modify the agreements as needed;

- Provide training for managers and employees in their responsibilities under an optimal acquisition system;

- Arrange for the continuation and close-out of existing contracts;

- Develop procedures for dealing with the transfer, lease, or purchase of real property and related assets.

10

PERSONNEL

10.1 INTRODUCTION

The major shortcomings of FAA's human resource systems are their inflexibility and lack of integration with the agency's overall strategic objectives. Specific problems include:

- Personnel, compensation and incentive systems and rules are rigid, complex and over-proceduralized. Managers must cope with over 47,200 pages of statutory, OPM, DOT and FAA instructions on personnel matters. Examples of the restrictions of government-wide rules include:

  - Federal personnel regulations limit to four months the amount of time FAA can temporarily assign (detail) an employee to another job within the agency without extensive recruitment and placement procedures.

  - Federal personnel regulations prevent FAA from giving a new employee a changed work assignment within 90 days of first coming on board.

  - Federal personnel regulations prevent FAA from initiating any unique pay provisions not applicable throughout the government without Congress passing a specific law. For example, although FAA employs controllers in locations that are hard to staff because of seasonally fluctuating living expenses and workload, such as

Nantuckett and Aspen, FAA cannot implement seasonal pay adjustments for these offices.

- Personnel systems are established to address broad, generic government-wide concerns and not to directly support FAA's strategic objectives or unique personnel situations. For example, OPM and FAA have recognized the unique requirements of the air traffic controller occupation by establishing a journeyman level at GS-14, while maintaining the typical GS-12 journeyman level for other government agencies' professional occupations. In addition, government-wide requirements set the top non-executive grade at GS-15; at FAA this means that the majority of air traffic managers, from the first-line supervisor to the headquarters program manager, are at the same level; and

- Human resource practices are determined and administered at too high a level. The FAA's line managers do not have human resource management authority commensurate with their operational and capital investment authority. FAA managers are responsible for the expenditure of $17.8 billion in capital investments ($2.8 billion in capital improvement, acquisition and installation in 1993 alone). Yet neither FAA nor its managers have the authority to offer an industry-competitive salary to attract world-class technical specialists to conduct research related to these investments or to manage any of these programs.

Major changes are needed in FAA's human resource systems and organizational culture to support a corporation that is to be efficient and responsive to customer needs. These changes will require broadly-based exemption from the personnel provisions of Title 5 of the U.S. Code to give the corporation flexibility to quickly readjust when needed, and fully integrate personnel, compensation and benefits practices with strategic objectives.

Persuasive arguments support granting the corporation exemptions from these statutes in compensation, employment, performance management and labor relations. FAA's unique operational mission among civilian agencies is discussed earlier in this report. That unique mission has been recognized in exemptions that have specifically focused on FAA's personnel problems:

- Action by Congress in the Air Traffic Revitalization Act to give controllers and maintenance technicians additional pay, recognizing the unique requirements of directly operating the national airspace system;

- Action by DOT and OPM in establishing the Pay Demonstration Project in 1989 to provide further pay incentives for controllers and maintenance technicians in certain hard-to-staff facilities; and,

- Action by Congress to grant special retirement benefits for air traffic controllers in recognition of the extensive demands of directly operating the national airspace system.

Although helpful, these exemptions have been piece-meal, stop-gap measures that do not comprehensively address FAA's requirements. Additionally, the process for obtaining exemptions to government-wide rules is time-consuming and cumbersome. For example, the exemption for the Pay Demonstration Project took 16 months from inception to actual implementation because of justification, approval and oversight requirements. This is at cross-purposes with the need to react quickly in a rapidly changing environment. In addition, because FAA must work within overall budgetary constraints, this program could not be sustained.

The Personnel Working Group asked Towers Perrin, a leading human resources consulting firm, to evaluate best practices in human resource management in the public and private organizations. Towers Perrin's report provided the framework for the Personnel Working Group's recommendations.

The EOC and the Task Force accepted the Personnel Working Group's recommendations. The Working Group and the Task Force have received encouragement from OPM, which sets governmental personnel policies, to make the recommended changes to the personnel systems and procedures for the USATS Corporation. OPM recognizes that, although NPR and the President's National Partnership Council recommended many of these changes for all government employees, it is not likely that such changes could be completed on the schedule required for the establishment of the USATS Corporation. In addition, several of the EOC's recommended changes, such as those in labor relations and in compensation and benefits, go beyond the NPR recommendations. The USATS Corporation, as a new organization, would have the opportunity to provide for best practices personnel systems in its charter.

10.2 KEY RECOMMENDATIONS

The EOC's key recommendations address human resource systems that must be fixed or enhanced.

RECOMMENDATION: Seek an exclusion from selected personnel provisions of Title 5 of the U.S. Code, except for the no-strike provisions

The lack of flexibility that is the major shortcoming with the current human resource systems can best be addressed by obtaining an exclusion from the personnel provisions of Title 5 of the U.S. Code. (Some other government corporations, such as the Federal Reserve and the Tennessee Valley Authority, have established a precedent and are exempt from Title 5.) This would free the corporation to develop simpler and interconnected systems that directly support its strategic objectives. The no-strike provision will be retained because the aviation industry, national economy and national defense requirements cannot tolerate a shutdown of the ATC system. An exclusion will also give the corporation greater flexibility to readjust systems without external approval, when shifts in technology call for additional changes in administrative practices. These changes are detailed in the recommendations below.

RECOMMENDATION: Create a flexible labor relations system that is excluded from the labor-management relations provisions of Title 5

> *FAA's efforts represent the leading edge in the federal service in labor-management partnerships and employee involvement programs.*

Labor-management relations issues are among the EOC's most important concerns in restructuring FAA. Sixty-two percent of FAA's employees are represented by one of several unions and the USATS Corporation's workforce would have as much as 90 percent of its workforce represented. The workforce would be predominately air traffic controllers and maintenance technicians, who are currently in recognized bargaining units that would continue to be recognized as part of the transfer.

FAA management and the unions representing key workforces have recognized the importance of working together to achieve employee involvement and communication. Airway Facilities' and the Professional Airways Systems Specialist (PASS) Employee Involvement Program (for maintenance technicians) and Air Traffic's and the National Air Traffic Controllers Association (NATCA) Quality Through Partnership (for controllers) represent the leading edge in the federal service in labor-management partnerships and employee involvement programs. The EOC wishes to maintain this leading position by reinforcing and expanding such efforts in a corporate environment, going even beyond the recommendations made by the President's National Partnership Council.

The EOC recommends that the corporation obtain an exemption from the labor-management provisions of Title 5 for the corporation and its represented employees and

labor organizations. Consistent with current efforts to forge labor-management partnerships, the corporation should draw upon its successes and, freed of the limitations of Title 5, create its own flexible labor relations system, jointly agreed on by the unions and management, that provides:

- A simplified labor relations structure for resolving disputes, bargaining, representation rights and other basic labor relations matters;
- Continued recognition of established bargaining units;
- Full scope of bargaining with an agreed-upon mechanism for binding decisions in the event of impasse;
- The continuation and enhancement of existing employee involvement initiatives; and,
- The retention of the no-strike provision of the current statute.

For the reasons set forth above, the EOC recommends that the USATS Corporation have the flexibility of a labor relations framework that is exempt from the labor relations provisions of Chapter 71 of Title 5 (the Federal Service Labor-Management Relations Statute). That statute prescribes in detail all aspects of the labor-management relationship for Federal agencies and labor organizations representing Federal employees, including FAA and its employees. The Title 5 provisions have a limited scope of bargaining and highly structured dispute resolution procedures.

The procedures, constraints, and limitations of the statutory scheme have consistently created friction points between the agency and labor organizations in the past. Also, the strictures of the labor relations statute do not comport with the expanded flexibilities the EOC is recommending in the areas of compensation, employment, and performance management. Without the flexibility of a labor relations framework free from the constraints of Title 5, the USATS Corporation would be ill-equipped to effectively implement the flexibilities in other human resource systems.

RECOMMENDATION: Develop a compensation system that permits flexible salary-setting within expanded pay ranges exempt from Title 5

FAA's compensation and classification system frustrates employees and managers throughout the agency and does not directly support its strategic objectives:

* *The white-collar grading and pay systems are complicated, time-consuming and difficult to understand. Over 150 separate sections in the Federal pay statutes govern pay matters.*

FAA and its line managers do not have authority to make most non-routine pay decisions. When the manager of a major air traffic automation development project announced his retirement prior to implementation of the project, it took FAA one year to obtain approval to offer him retention incentives. Of course, the manager had left by then.

The job-grading structure makes it difficult to move employees from one job to another; many highly-graded technical employees are forced to take pay reductions to become supervisors or managers.

The EOC recommends that the corporation obtain an exemption from the pay and allowances provisions of Title 5 and implement a broad-banding pay system. Although Title 5 Section 5392 does provide a mechanism for establishing "special occupational pay systems," exemption from Title 5 would give the corporation the flexibility to create and later adjust new systems without the constraints of obtaining external clearances. Using fewer and broader pay grades, broad-banding is simpler and gives managers great flexibility in determining individual pay levels. It enables managers to compensate employees based on their contributions to the organization. Broad-banding would allow employee advancement to be based on factors important to line-of-business objectives; for example, competency-based (recognizing mastery of certain sets of skills), or market-based (reflecting competition with private firms for certain skills). Broad-banding is also an effective system for redeploying people without changing their compensation (i.e., the new job, with different duties and responsibilities, is in the same band).

In addition to broad-banding, the compensation system should address other problems by:

- Devising a variety of incentives to reward outstanding individual and team performance, focused on achieving strategic objectives;
- Expanding executive pay ranges and removing the cabinet-level cap to attract more industry-competitive candidates;
- Designing a simplified position classification process;
- Developing a simplified system of premium pay;

- Creating supervisory pay bands or differentials to attract employees in highly technical occupations to managerial ranks;
- Creating rank-in-person rather than rank-in-position; and,
- Using techniques similar to "manage to budget" to administer systems and to control costs.

RECOMMENDATION: Create a more flexible recruiting, selection and placement system exempt from Title 5, and free from legislative and administrative restrictions on employment levels

The existing recruiting, selection and placement system neither permits managers to readily hire the people they need nor to reassign employees in response to changing needs:

> *Rigid federal rules for recruiting, selection and placement of employees limit hiring flexibility and therefore increase the amount of time it takes to hire a new employee. It takes an average of four to six months to fill a trainee air traffic controller position, with 60 days spent just creating a pool of candidates.*
>
> *Federal time-in-grade and standard qualification restrictions limit the ability of managers to place internal employees in more complex jobs even when they have the necessary skills and training.*

The EOC recommends that the corporation be exempt from the employment provisions of Title 5, and from legislative and administrative restrictions on employment levels. An exemption from these provisions will give the corporation the flexibility to resolve existing problems by, for example, reducing the time needed to fill many jobs or supporting more ready redeployment of employees where their skills are needed. It will also enable the corporation to make additional changes in the future as unpredictable shifts in the economy and the industry affect employment strategies and as technological changes create a need for employees with new skills.

RECOMMENDATION: Design a performance management system that is exempt from Title 5 and other administrative restrictions

FAA's performance management system is based on government-wide rules that link pay and performance and it is not results-oriented.

Federal regulations limit managers' ability to reward their best employees and effectively administer conduct and disciplinary actions.

The annual numerical performance appraisal system is ineffective. It focuses on completion of forms so that pay raises can be given rather than the process of having employees perform at their highest potential and productivity levels. It results in managers and employees "working the ratings," a practice that breeds cynicism.

The EOC recommends that the corporation be exempt from the employee performance provisions of Title 5 and other administrative restrictions and design a new performance management system that is tied directly to the agency's overall strategic objectives.

A best practice performance management system would focus on a continuous evaluation process and:

- Have employees take responsibility for their work and focus on achieving organizational objectives;
- Use a collaborative process between employees and supervisors to set goals, agree to a performance contract and monitor and renegotiate that contract as needed;
- Create an environment that is open, fosters communication among employees and supervisors and provides continuous "360 degree" feedback;
- Be positive and developmental; if an employee does not meet the standards that were negotiated, the standards may be renegotiated or training identified that will enable the employee to meet the current standards; and
- Facilitate prompt action to address those who continue to fail to meet expectations.

10.3 OTHER RECOMMENDATIONS

The EOC also proposes changes to human resource systems that are adequate but can and should be improved.

RECOMMENDATION: Permit employees to retain current and equivalent health and life insurance benefits, retirement benefits, but explore enhancements or new systems

The EOC recommends that the corporation permit current employees to retain Federal retirement benefits, and equivalent health and life insurance benefits. The corporation should subsequently explore enhancements to and the compatibility of the existing systems or develop new systems. The EOC recognizes that for purposes of continuity and stability of the workforce in the transition to a corporate environment, retaining the established benefit systems is necessary. However, in line with best practices in business, Towers Perrin identified several options that they strongly recommended be considered by the corporation. Best practice calls for enhancements or new retirement systems that are integrated with compensation systems as part of an appropriate total compensation package. Employees who are newly hired after the inception of the USATS Corporation should fall under any health, life insurance or retirement benefits systems that are developed for the corporation. As such, benefits systems for new employees will have to be established. This represents an ambitious target from a timing viewpoint, but every effort should be made to achieve that objective. The corporation should explore the most cost-effective means of providing these benefits.

RECOMMENDATION: Conduct a training needs analysis and design a system that ties training programs and their administration to the corporation's strategic plan

The EOC recommends that the corporation conduct a training needs analysis that ties training programs and their administration to its strategic plan. Based on this analysis, the corporation should improve current programs through the use of best practices such as competency-based skill training.

The corporation should also restructure in-house training courses and explore the feasibility of relying on the market to train at least some potential employees.

10.4 TRANSITION ISSUES

The EOC's wide-ranging recommendations for restructuring human resource systems can be successfully implemented only through close attention to the following major transition issues.

10.4.1 CONTINUITY OF HUMAN RESOURCES

Processes for a smooth, efficient changeover to a more flexible environment must be developed. Key human resource systems, such as compensation, should be established before the shift to a new structure. The corporation needs to offer employment or financial incentives for "carryover assistance" to key personnel who otherwise may not join the new organization.

10.4.2 COMMUNICATION

The corporation should develop a proactive plan for effective communications with all elements of the workforce--early, continuously, and in sufficient detail for employees to understand the nature of the changes and how the changes will affect them.

10.4.3 COST CONTROL

Cost/benefit analysis of each major human resource system should be conducted once the proposals are fully developed and before those systems are put in place.

10.4.4 LABOR RELATIONS

The corporation should implement new human resource systems with major labor organizations as full partners. The EOC recognizes that the changes it has recommended have major implications for the corporation's relationship with its unions. Their buy-in and support throughout the transition process is essential to effective implementation.

All labor organizations must be fully briefed and formally notified regarding the proposed changes, and significant bargaining with the unions will have to be accomplished as a part of the transition.

10.4.5 ORGANIZATIONAL CHANGE

The EOC's recommendations will not by themselves transform the organization to a less hierarchical, less rigid and more flexible entity. For the transition to be successful, and to take full advantage of proposed human resource system flexibilities, the corporation must take specific steps to reinforce its commitment to organizational change. These steps include:

- Expanding employee involvement initiatives;
- Establishing and clearly communicating value expectations;
- Recognizing and rewarding alignment with new values; and,
- Dealing effectively with those who fail to align with these values.

Change is always difficult and uncomfortable, but it is necessary for the long term survival of all organizations. Just as the corporation must keep pace with technological advances to accomplish its mission, it must also keep pace with human resource best practices to have the right people, working in the right place, and doing things right.

10.5 SUMMARY

The EOC recognizes that existing personnel systems will not support the human resource management objectives of the USATS Corporation. As such, it recommends major changes in this area. For example, the Metropolitan Washington Airports Authority, which moved from FAA to an independent authority in 1987, was able to successfully transition its workforce. By all reports, these changes were well received by the employees. Most importantly, these changes have resulted in significant improvements in the quality of service provided to the passengers and other users of these airports.

11

BUDGET AND FINANCE

11.1 INTRODUCTION

FAA's budget and spending constraints do not differ from those of other federal agencies. Unlike other civilian agencies, however, FAA operates an around-the-clock system whose performance directly affects the operating costs and productivity of commercial and general aviation users, the delays suffered by passengers, and profitability of airlines. That system's effective operation is dependent on the continual modernization of its capital-intensive advanced technology equipment. As the Airline Commission noted: "In the history of American business, there has never been a major commercial industry whose minute-by-minute operating efficiency was capped by the daily operating efficiency of the federal government--except the airlines."

The modernization of the ATC system has been delayed by FAA's dependence on annual appropriations and the federal budget process. FAA's inability to make sufficient investments in the ATC system will not only constrain FAA but will also impose cost penalties on system users. Eliminating these cost penalties could more than offset the cost of improvements to the ATC system. Despite the need to increase the level of investment in the modernization of the ATC system, FAA will not be able to do so in the current budget environment.

The complexity of the budget process reduces FAA's flexibility in using available funding. FAA receives funding through four major Congressional appropriations, which are "fenced off" into 41 budget activities and over 160 line items. Preparation of the FY1994 budget began early in 1992 and took 22 months from the initial call for estimates from FAA's field organizations to Congressional approval. Arthur Andersen & Co., a leading accounting firm engaged to advise the EOC on finance and budget matters, reported that

the budget cycle of a large corporation using best business practices is only three-to-five months and is tied directly to the corporation's strategic plan.

Although a large share of FAA's resources are derived from taxes on the aviation community deposited into the Airport and Airway Trust Fund, Congress must still appropriate these funds for operations and specific capital investments. Although the Trust Fund completely finances ATC facilities and equipment as well as its associated research, engineering and development, funds provided by the general taxpayer support about 50 percent of FAA's budget for its operations.[17]

Not all of the monies paid into the Trust Fund are spent on current investments. A part of the Trust Fund balance is reserved in the form of commitments, which is spending authorized by Congress but set aside for a period of up to eight years for future expenditures.

This section presents EOC recommendations on how USATS can achieve financial autonomy. It also identifies those policy issues that are key to corporation financing. Section 12 presents a summary of FAA's current financial structure. There also are a number of actions required in the budget and finance area during the transition to a corporation. These are summarized in Section 17.

11.2 RECOMMENDATIONS

The EOC concluded that current finance and budget procedures are also among the primary reasons for considering restructuring of ATC services. In fact, failure to address budgeting issues makes reform of personnel, acquisition and governance less effective. Major changes in these areas are required for USATS to become efficient, businesslike and customer-focused. FAA's current budget and finance practices are incompatible with operating and modernizing a high technology system on a businesslike basis.

[17]Section 12 provides a more detailed overview of FAA's current costs and user tax receipts. It also presents information on how these costs are allocated to various FAA activities, including the development, operation and maintenance of the ATC system, safety and security regulatory programs, and the Airport Improvement Program.

RECOMMENDATION: Make the corporation not-for-profit.

The new USATS will be a monopoly--it will not have any competition for the provision of ATC services. To ensure that there is no incentive for the corporation to raise fees unduly, and no "bottom-line" incentive to reduce safety-enhancing investments, the corporation should be not-for-profit.

RECOMMENDATION: Make the corporation financially self-sufficient..

The level of expenditure for the ATC system should be driven by market forces based on providing the level of service users require and improvements for which they are willing to pay. FAA formulates its investment priorities between ATC infrastructure needs and new technology introduction in the context of Federal budget constraints. This can result in budget requests and appropriations that often fall short of fully meeting investment needs. A substantial portion of the funding is one-year, ear-marked, or assigned to a specific category of use. These budgetary limitations make it difficult to properly plan and execute investments in a climate of changing priorities. USATS should ensure stability in life-cycle funding for a resource commitment, which includes funding for support and disposal.

RECOMMENDATION: Authorize the corporation to invest in improvements to increase the level of service or reduce costs to users.

Investments in the ATC system should be based on user needs. A reengineered acquisition system for USATS will result in a process more adept at defining user needs and characterizing those requirements as specific capital investments. A necessary prerequisite is a sound financial foundation that is responsive to the aviation community and provides adequate resources to undertake investments in a timely and cost-effective manner. In Section 12, the EOC has identified an illustrative accelerated investment program for the ATC system that will produce substantial user benefits and reduce ATC operating costs. While the FAA conducts benefit-cost analyses of system improvements, the aggregate level of investment is set as part of a budget process that often micromanages the expenditure of financial resources. In a corporate environment, investment decisions are defined in the context of such factors as financing capacity or return on investment. Corporations are afforded a broader range of financial mechanisms including debt financing to meet investment needs. FAA, on the other hand, does not have that degree of financial flexibility. For example, it cannot use debt financing as part of a long-term investment strategy to upgrade the system.

RECOMMENDATION: Authorize the corporation to establish, collect and use fees for the services it provides for commercial aviation.

USATS should establish direct user fees for commercial operations, the flights which make the most intensive use of the ATC system. In this way, resources will be directed toward those services users require for safe and efficient operations. The EOC recognizes that direct fees for service may provide disincentives for general aviation to use safety services, and recommends that all general aviation users be exempt from ATC user fees. The existing aviation fuel taxes will be retained for general aviation users. Public aircraft also will be exempt from ATC user fees.

RECOMMENDATION: To support the development of user fees, conduct a cost allocation study to measure the direct, indirect, operational and capital costs of providing services.

FAA's existing accounting and financial information systems do not reflect the total costs of producing specific services. To develop permanent commercial aviation user fees, USATS must be able to allocate its costs to reflect the total cost of services, which may vary by location, user type or for other reasons. The EOC recommends a set of interim user fees for the corporation to use during transition. It recognizes that the corporation will have to conduct the analyses necessary to support a permanent system of user fees. Public aircraft and general aviation will remain exempted from user fees.

RECOMMENDATION: Establish a long-term capital spending program so investments are made on a businesslike basis, using debt financing where appropriate.

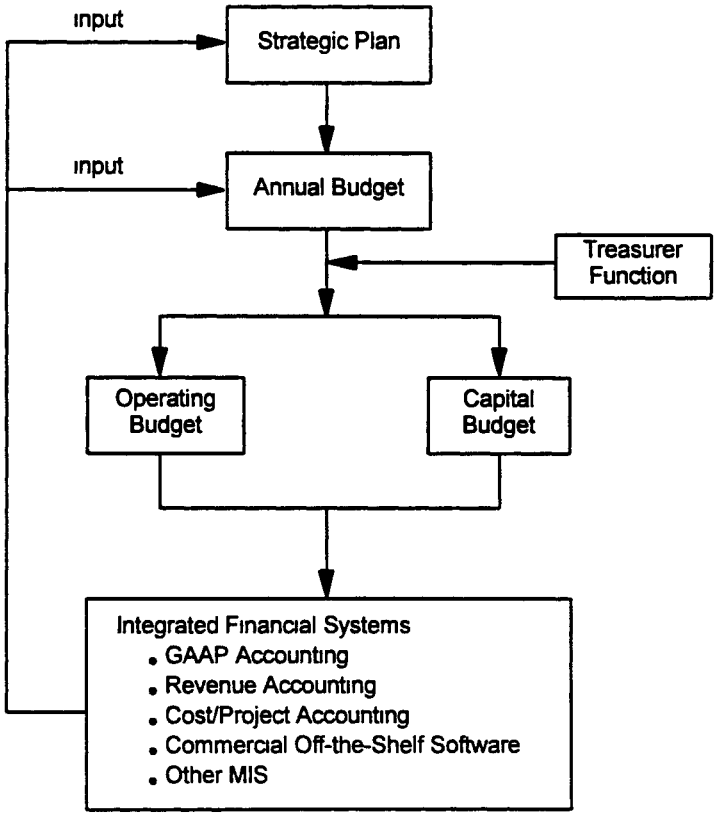
Businesses invest as part of a long-term strategy. They employ both debt and internally generated capital (i.e., equity) to support a capital spending program. Figure 11-1 illustrates a businesslike approach to financial management and budgeting that could be used by USATS. The key elements are the linkage of the strategic plan and the annual budget for the corporation. The annual budget would consider both operating and capital items. Capital costs would reflect the investment required to operate the ATC system during the period reported. A financially autonomous corporation should be able to finance capital improvements by borrowing from the Treasury or, when cost-effective, from private capital markets. The corporation should select the source of debt financing depending on both the cost of borrowing and the terms and conditions offered. As a periodic borrower of debt, ongoing borrowing from the Treasury is likely to be the least expensive long-run alternative, provided that flexible terms preserving the corporation's ability to manage its funds can be maintained. As noted in Section 8, the Secretary of Transportation will be able to disapprove borrowing under certain limited conditions, in

consultation with the Secretary of the Treasury. In order to borrow on private markets, the corporation will have to demonstrate to the Secretary of the Treasury that doing so represents a sound business decision. This provides additional protection to ensure the corporation makes cost-effective borrowing decisions. In addition, the EOC recommends a ceiling on total borrowing of $15 billion. This is based on the anticipated net asset value of the corporation over the first ten years of its existence.

The financial discipline imposed by borrowing and repayment should assure that the corporation pursues an appropriate investment program. With an opportunity for such financial leverage, the repayment of debt would be more closely matched to when the benefits from the investments--cost reductions for the corporation or users, or improved levels of services for users--are realized and as users' ability to pay increases as a direct result of a more efficient ATC operation.

Figure 11-1

Business-Like Processes



RECOMMENDATION: Employ businesslike financing and accrual accounting practices to obtain an accurate picture of the economics of providing ATC services.

Historically, FAA has financed both operations and capital improvements out of its annual budget. Its accounts reflect only the capital expenditures authorized in any year and not the capital cost of providing ATC services. As a government agency, FAA enters capital investment into its accounts in the year made and expenses the capital when the asset is disposed of, rather than allocating these costs to the time periods in which the capital is used. Commercial enterprises, in contrast, depreciate assets over their useful life to reflect the cost of these assets in the periods in which they were used. Businesses match revenues and expenses to the time period in which revenues are earned and when expenses are incurred. USATS would use integrated financial systems based on generally accepted accounting principles (GAAP), in its accounting for revenues from user fees, costs, and for project accounting in the strategic plan and annual budgets.

RECOMMENDATION: Improve the cost and productivity performance of the ATC system.

Because FAA does not match aviation taxes precisely with the cost of services provided to its users, it has few incentives--other than government-wide economy moves--to reduce specific costs and increase productivity. It does not examine which services users are willing to pay the full costs for, and reduce the costs of producing services where costs exceed the value placed on the service by users.

RECOMMENDATION: Complete the transition to a self-sustaining ATC system.

For USATS to operate on a businesslike basis, it requires financial autonomy from appropriated funds. Because of the high existing proportion of user funding, it will be possible for USATS to be self-sustaining. This is a necessary prerequisite to operating like a business.

11.3 KEY POLICY ISSUES

A number of policy issues that will affect the financial and budgetary practices of USATS are discussed below.

11.3.1 DEVELOPMENT OF FINANCE AND ACCOUNTING SYSTEMS

The ATS Corporation will require a number of accounting and financial systems. Existing governmental accounting systems are not appropriate for a business-type operation using accrual accounting and generally accepted accounting principles (GAAP). Systems will be needed for the billing and collection of user fees, payroll, property accounting and other systems. Such systems should be operational when the corporation commences activities or as soon thereafter as is possible. As such, systems development must begin well before start up and should make use of off-the-shelf-systems to the extent possible, for example for general ledger accounting. The EOC recommends that funds for these activities be provided to FAA in FY1995.

11.3.2 INDEPENDENT AUDIT AND ASSET VALUATION

Presently, the FAA's financial statements, portions of which have been audited by the Office of the Inspector General, are based on the requirements and standards mandated for federal agencies. Statements for the ATS Corporation will have to be prepared to reflect a businesslike orientation, following the same generally accepted accounting principles used by other government corporations. This will be a major undertaking. The corporation will need to have accurate data for the new organization's opening balance sheet, particularly the current value of capital assets. Presently, the FAA captures capital assets in the accounting system at their acquisition costs, which does not reflect the decreasing value of the assets as they are used.

11.3.3 WORKING CAPITAL

The ATS Corporation will need funds on its first day of operation. Even if there is only a 30-day lag in collecting user charges, some level of working capital will be necessary. This could be provided by borrowing from the Treasury or the private market.

11.3.4 DEBT FINANCING

The EOC recommends that USATS have the flexibility to obtain debt financing on private markets or from the Treasury for construction of facilities and acquisition of equipment. Financing from the private market may provide useful disciplines and incentives for the corporation to be efficient. The debt-carrying capacity of the corporation will be determined by its financial performance.

11.3.5 LIABILITY

USATS and its employees would remain under the standards of the Federal Tort Claims Act for civil liability purposes. However, the EOC recommends that the corporation be required to reimburse the settlement fund for claims paid resulting from ATC system liability. (The corporation may decide to seek insurance to cover liability payments in order to spread these costs more evenly over time.) This will provide the corporation with incentives to minimize these costs and, as a result, will enhance safety performance. USATS also will assume responsibility for any legal or administrative costs related to ATC litigation. It would undertake and pay for these activities in its own name.

11.4 SUMMARY

This section has identified the shortcomings which limit FAA's ability to operate and invest in the ATC system to produce the level of services users require in the most efficient way. It recommends those changes necessary to establish a financially autonomous corporation. This section also has explored a number of issues which will affect how the ATC system could be restructured into a government corporation.

The EOC's recommendations for USATS will provide the following incentives for businesslike efficiency:

- USATS will periodically borrow from the Treasury or on private capital markets, depending on which source provides the best terms and conditions. The corporation will produce sufficient revenues to service its debt and to pay operating expenses.

- User representation on the Board of Directors ensures that the corporation will undertake investment programs that improve service quality and safety, reduce the corporation's operating costs, or provide user cost savings.

- The use of direct charges for ATC services links the cost of producing service to the prices paid for ATC services. The corporation would be required to justify changes in rates and charges, providing incentives for cost control.

- The corporation will be responsible for ATC liability claims and related costs. This will provide increased incentives for safety and efficiency by making these a cost for doing business.

12

FINANCIAL CONSIDERATIONS

12.1 INTRODUCTION

The EOC believes that USATS must be financially autonomous for it to realize the benefits of a corporate structure. The EOC reviewed a number of financial analyses prepared by the Task Force examining the financial performance of the corporation and the remaining FAA. These analyzed the financial requirements of each entity and recommended sources of those funds. The EOC also commissioned Arthur Andersen & Co. to assist in the development of financial projections and analyses for USATS, the remaining FAA and the Airport and Airway Trust Fund (Trust Fund).[18] This section summarizes the financial restructuring issues for changing from the current FAA to USATS and a remaining FAA.

12.2 FINANCIAL STRUCTURE OF THE EXISTING FAA

This section presents information on how FAA's costs are allocated to various FAA activities, including the operation, maintenance and development of the ATC system; safety and security regulatory programs; and the Airport Improvement Program.

12.2.1 FAA EXPENDITURES AND REVENUES

The FAA budget is divided into four major programs:

[18]Arthur Andersen & Co., Report on Restructuring Air Traffic Control As A Corporation, April 1994.

- The Operations program provides funds for the continuing requirements of FAA, including operating and maintaining the ATC system, developing safety and security standards, administering civil aviation regulations and planning for airport development.

- The Facilities and Equipment (F&E) program provides funds for the expansion and improvement of the ATC system and the construction and modernization of FAA facilities.

- The Research, Engineering, and Development (RE&D) program provides funds for aviation research on safety, security, capacity and efficiency.

- The Airport Improvement Program (AIP) provides airport planning and development grants, as well as funds for noise abatement programs.

In FY1993, FAA's budget authority for these major programs was $9.1 billion, distributed as follows:

- Operations--$4.5 billion;
- Facilities and Equipment--$2.3 billion;
- Airport Improvement Program--$2.1 billion; and,
- Research, Engineering and Development--$230 million.

Over their life cycle, numerous FAA capital investments have been initiated as research projects in the RE&D budget, developed and installed throughout the ATC system as part of the F&E budget, and operated and maintained as part of the operations budget.

The FAA is funded by a set of dedicated aviation taxes, which are deposited in the Trust Fund, and by the General Fund. Current aviation taxes provided revenues of $5.1 billion in FY1993, as follows:

- A tax on domestic passenger tickets of 10 percent--$4.5 billion (88 percent of total aviation user taxes collected);

- A tax on air cargo waybills of 6.25 percent--$255 million;

- GA fuel taxes of $0.15 and $0.175 per gallon for aviation gasoline and jet fuel, respectively--$120 million; and,

- A tax on international passenger departures of $6--$233 million.

By law, the Trust Fund provides 75 percent of FAA's budget, including all expenditures for F&E, RE&D, and AIP and approximately one-half of Operations spending. The remaining one-half of the Operations budget is provided by appropriations from the General Fund. In FY1993 this amount was $2.2 billion.

12.2.2 ALLOCATION OF FAA COSTS

The fist step in assessing the financial performance of USATS and the remaining FAA was the allocation of FAA costs to the two entities. The cost allocation was a two-step process. First, the Task Force, assisted by the FAA Office of Budget, distributed personnel and activities for each program between USATS and the remaining FAA. Second, the Task Force commissioned an update of the FAA Cost Allocation Study to provide current

Figure 12-1

FAA SOURCES AND USES OF FUNDS
(FY1993 -- $BILLIONS)

SOURCES OF FUNDS

Trust Fund Contribution		
Current Taxes	$5.1	
Trust Fund Interest	1.1	
Trust Fund Drawdown	0.7	
Subtotal Trust Fund		$6.9
General Fund		2.2
Total Sources		$9.1

USES OF FUNDS*

Air Traffic Control	$6.3
AIP	2.1
Regulatory	0.7
Total Uses	$9.1

*Based on FY1993 update of 1986 FAA Cost Allocation Study

allocations of ATC costs to facility type and user group. (This study was completed in 1986 and used 1985 as the basis for the cost allocation.)

Figure 12-1 presents FAA receipts and expenditures for FY1993. The total amount of funds available from the Trust Fund was $6.9 billion. Receipts from aviation user taxes

totalled $5.1 billion; the remaining $1.8 billion from the Trust Fund was provided by interest earned on committed and uncommitted balances and a drawdown of the uncommitted balance. As noted above, the General Fund provided $2.2 billion to FAA. About one-half of the that amount represents the allocated costs of public use of FAA services (military and other government users). The other one-half offset the shortfall between receipts from private users through the Trust Fund and their allocated share of expenditures. The uses of funds in Figure 12-1 have been developed by allocating the costs from each of the four FAA budget categories to three major activities, air traffic control, safety and security regulatory programs, and AIP.

Figure 12-2 shows the allocation of estimated total ATC costs for FY1993 by facility type and user group. Total ATC costs include site labor, maintenance and communications; allocated costs for Navaid maintenance; facilities and equipment; research, engineering and development; and overhead. Estimated costs by facility type are as follows:

- Air route traffic control centers (ARTCCs)--$3.1 billion;
- Terminal radar approach control (TRACONs)--$2.5 billion, including tower costs for the primary TRACON airport;
- VFR Towers--$211 million; and,
- Flight service stations--$385 million.

Figure 12-2

Estimated Total Cost of ATC Services by User Group (FY1993 - Millions)

	Air Carrier	Air Taxi/ Commuter	General Aviation	Public	All Users
ARTCC	$1,661	$447	$406	$606	$3,120
TRACON	$1,191	$678	$350	$330	$2,549
ATCT	$16	$21	$150	$25	$211
FSS	$5	$15	$357	$9	$385
All Facilities	$2,873	$1,160	$2,262	$969	$6,264

Almost 90 percent of ATC costs are associated with ARTCCs and TRACONs, which primarily support the IFR system.

Figure 12-2 also shows the allocation of ATC costs by user type. Although these estimates have been adjusted for changes in activity and the costs of producing ATC services since 1985, they should be viewed as only indicative of user cost shares. Given the large investments made in the ATC system since 1985, accurate estimates of user cost shares require a new cost allocation study. The EOC recommends that such a study be undertaken in the immediate future.

12.3 OVERVIEW OF THE FINANCIAL PLAN

This section presents the EOC's recommended approach for making USATS financially autonomous. Although the analysis is based on current FAA revenue and expenditure projections, the EOC recognizes that the corporation would vary spending levels based on its own analysis of services required, productivity improvements and return on investment. The EOC's review of the Task Force's financial analyses shows that the corporation will be viable without increasing the burden on users or taxpayers.

12.3.1 FACTORS AFFECTING RESTRUCTURING

Some aspects of FAA's current financial structure must be understood in order to discuss USATS's financial autonomy. These include the following:

- About one-half of the General Fund revenues provided to FAA represent the allocated costs of public use of FAA services;
- The other one-half of General Fund revenues offset the shortfall between receipts from private users through the Trust Fund and their allocated share of expenditures;
- Private users are responsible for about 87 percent of FAA costs, with the remainder incurred on behalf of public users;
- FAA's budget does not reflect all costs for civil ATC:
  - Some ATC services are produced by the Department of Defense;

- The liability costs of the ATC system are paid from a separate fund;
- Some facility rental costs are paid by GSA.

- FAA budgets--and sets aside funds--for equipment and installation in the year the acquisition decision is made, which results in large committed balances in the Trust Fund;

- FAA acquires substantial long-lived assets for the ATC system, but does not reflect the cost of these assets over their useful life. FAA retains assets at full value until they are disposed of, when it is written off; and,

- FAA does not relate aviation tax payments to the cost of ATC services.

12.3.2 FINANCIAL OBJECTIVES

As noted in the prior section, one-half of FAA's Operations budget comes from the General Fund. To achieve the goal of not relying on direct appropriations, while not increasing the financial burden on users, the EOC recommends that:

- The corporation use business-type financial practices based on generally accepted accounting principles (GAAP);

- Committed F&E programs be carried out using the committed Trust Fund monies already set aside for them;

- Existing assets be transferred to the corporation without charge;

- The corporation employ debt financing for ATC system investments and recover the costs of these investments over their useful life;

- General Fund appropriations be used to pay for the operations budget of FAA--F&E and RE&D for safety and security programs and AIP be funded via dedicated user taxes deposited in the Trust Fund; and

- The Trust Fund uncommitted balance be drawn down, with a long-run target of a solvent Trust Fund in which annual revenues are equal to annual expenditures;

The EOC has established the following general objectives for any user charges that are established:

- User fees will be set at the level of current taxes for one year;
- Costs of billing and collecting user fees will be reasonable;
- The Board of Directors will review fees established in the enabling legislation to see if they can be more closely aligned with the cost of producing specific ATC services;
- User fees will be set to encourage use of ATC safety services;
- General aviation and public users will be permanently exempted from ATC user fees;
- When permanent fees for international flights are established, they will be in accord with international obligations.

A number of financial scenarios were analyzed for the corporation, all of which show it will be financially viable. These scenarios are available in a separate technical report prepared by the Task Force.

12.4 SUMMARY OF FINANCIAL PERFORMANCE

After review of the various scenarios examined by the Task Force, the EOC is confident that the ATC corporation can be financially viable. In addition, such restructuring would allow the remaining FAA to continue existing programs at planned levels, including AIP. The corporation can be financially autonomous and increase the level of ATC investment without increasing user charges or maintain the planned level of investment and reduce user charges. By making ATC self-supporting it also will be possible to reduce the need for support from general tax revenues. Although the EOC has reviewed a number of Task Force analyses of the corporation's financial performance, it recognizes that USATS will develop a comprehensive investment and operating plan. The management, personnel, acquisition, governance and budget reforms embodied in the corporation will allow it to operate more efficiently and better respond to the needs of ATC system users. For example, it may determine that investment levels beyond those documented above are justified and will be supported by users. The strong role of users in the governance of the corporation will improve coordination and could speed up investment in an advanced ATC system and in the aircraft equipment necessary to use the system.

13

INTERNATIONAL ATC ORGANIZATION PRECEDENTS

13.1 INTRODUCTION

This section reports on developments in corporatization of ATC services in the international environment.[19] In particular, the United Kingdom, Germany, New Zealand, and Australia have all reorganized how they provide ATC services. In addition, Canada's current deliberations on proposed changes to its system are also discussed.

The EOC and Task Force examined these cases of ATC corporatization to see what results have been obtained, particularly in the areas of safety, efficiency and the ability to modernize the ATC system in a timely manner. Most other countries changed the institutional structure of ATC in order to resolve issues related to acquisition, personnel and financial autonomy. While the scope of the U.S. ATC system dwarfs that in other countries, the EOC concluded that the experience of these countries is highly relevant in assessing the benefits of institutional reform. Moreover, it is clear that such restructurings have not had any negative effects on aviation safety.

13.2 THE PROBLEMS THAT HAVE DRIVEN CHANGE

Broadly speaking, six major themes characterize the policy debate with varying degrees of emphasis in each national corporation case. These are:

[19]This section summarizes material in a report developed for the EOC, "U.S. and International Precedents for a Government Corporation," January, 1994.

- Safety and the Public Interest;
- Modernization Strategy;
- Management and Human Resources Issues;
- Political and Bureaucratic Separation;
- Financial Autonomy and Self-Sufficiency;
- User Satisfaction.

13.2.1 SAFETY AND THE PUBLIC INTEREST

Foreign governments have viewed ATC corporatizations less as a risk to safety than as an opportunity for improvement in safety. Benefits could derive from the professionalization of both ATC and aviation regulation by making these two functions separately accountable and independent of each other. This approach sees safety regulation not as punitive enforcement on an industry otherwise disposed to act unsafely, but as providing positive value to the industry by making its products and services more acceptable to the public. The United Kingdom, New Zealand and Germany have embraced the view that those who provide services should be distinct from those who regulate those services. However, even where there is a strong philosophy to separate regulation from operations, interactions between the two organizations are recognized. In the case of general aviation, there is widespread acknowledgement that full cost recovery from private pilots will either depress the level of GA flying or create disincentives to use fee-based services that improve safety, and therefore has been avoided.

13.2.2 MODERNIZATION STRATEGY

The imperative to implement a cost-effective modernization strategy has been an important motivation to change how ATC services are provided in several countries; in some cases it is the primary driver. Particularly in Europe, ATC modernization points to the major issue of inefficiency of investment. The costs of automating the en route system, combined with the desire to maximize local content and customize systems to incorporate the latest technology, have created compatibility issues with neighboring countries and far higher acquisition costs for ATC equipment. High ATC costs have created user dissatisfaction and a willingness to try new institutional approaches. Some countries which have corporatized ATC have been able to modernize ATC technology rapidly and cost effectively.

13.2.3 MANAGEMENT AND HUMAN RESOURCES ISSUES

The ability to manage more effectively--with greater flexibility, accountability, professional independence and responsiveness to customer rather than bureaucratic needs--is cited as a primary motive for exiting the traditional government structure. Many countries believe they achieved this outcome. Having greater control over decisions and an independence from unnecessary political influence is seen as a major benefit to establishing an autonomous financially self-sufficient entity for ATC.

13.2.4 POLITICAL AND INSTITUTIONAL SEPARATION

Social and political pressure can influence an ATC organization to make non-economic decisions about facility closings, locations, and general agency management of foreign ATC organizations. Although political factors persist in the naming of board members, most chief executives of foreign ATC organizations seem to have at least informal protection from arbitrary processes. Hiring of senior managers based on professional merit seems to be at least one characteristic of corporatized systems. Procurement decisions by ATC executives seem under no more, and perhaps even less, pressure than those on airlines executives to buy capital equipment from domestic manufacturers.

While day-to-day interventions (particularly from Ministries) have been greatly reduced, Parliaments have continued actively to monitor air traffic management, usually through "Select" committees. The corporations regularly appear before Parliament, and relationships seem to operate directly, rather than through Ministries.

It is neither possible nor advisable to separate air safety totally from political lines of accountability. Because of the high public interest in aviation safety, the executive and legislative branches of government must retain oversight of aviation safety. In countries with an independent regulatory authority for ATC, the political lines to government are quite clear. In countries where the ATC entity also regulates safety, there must be linkages to political decisionmakers.

13.2.5 FINANCIAL AUTONOMY AND SELF-SUFFICIENCY

A central objective of every case of ATC corporatization examined has been to put the overall operation on a pay-as-you-go basis and to eliminate subsidies to the ATC system. Even in countries where hefty user fees already existed, operation of ATC by government typically led to operating the system on a deficit basis. In some cases, one

source of this deficit had been the cost of providing services to remote areas. However, where economically unsustainable service is deemed essential for political or social reasons, the government can also compensate the corporation in a businesslike way, by underwriting the costs of specific services. For government users, some countries' ATC organizations bill other departments or levels of government for services. In other cases, the ATC provider receives funds from general government to recover its costs.

Each system studied is expected to make a normal profit, i.e. a return on capital that will at least fund new and replacement investment. The degree and level of financial oversight varies considerably. One issue raised by a self-sufficiency mandate for a monopoly provider is how to handle a business downturn; the corporation must either reduce the costs of providing ATC services or raise rates on decreased volume.

13.2.6 USER SATISFACTION

Users seem to support corporatization in the countries where it has been established as well as where it is under consideration today. In New Zealand and Australia there have been substantial fee reductions for en route charges. The United Kingdom, too, has seen its high fees fall significantly. In Germany, delays have decreased from what had been very high levels. In Canada, the industry apparently anticipates service improvements and cost reductions and therefore supports the corporatization project.

In New Zealand, operators have enjoyed substantially lowered airways fees even as the corporation has enacted its efficient modernization program. Because of this modernization, users can look forward to even lower costs in the future.[20] The primary concern arising from these countries' corporatizations regard policies followed in New Zealand and Australia with respect to taxation and returns to shareholders' capital. In these two countries, the ATC organizations generate transactional tax revenues and pay corporate taxes on profits and dividends. The Government of New Zealand obtained a total return of 23 percent, leading to objections from airlines that the government has taken out more cash than it put in. It is important to note that these concerns would be moot under the proposed USATS which is defined as a not-for-profit entity.

[20]Airways Corporation of New Zealand recently announced a second reduction in fees for ATC services in the current fiscal year. Aviation Daily, March 23, 1994, p.463.

13.3 NATIONAL CASE STUDIES

This section reviews the experience of some specific cases of ATC corporatization in selected countries. Figure 13-1 provides an overview of the key organizational structure dimensions of the ATC organization in the four countries which have corporatized.

Figure 13-1

Organizational Structure of Foreign Corporatized ATC Organizations

	UK	New Zealand	Australia	Germany
Ownership	Government	Government	Government	Government
For Profit Status	Yes	Yes	Yes	Yes
Appointment of CEO	Term	Term	Term	Term
Revenue Attorney	Yes*	Yes	Yes	Yes*
Fee Structure	Direct Fees	Direct Fees	Direct/Indirect Fees	Direct Fees
Procurement Policies	Ex Post Facto Review	Ex Post Facto Review	Ex Post Facto Review	Ex Post Facto Review
Personnel Policies**	Self-defined	Self-defined	Self-defined	Self-defined
Borrowing Policies	Government Credit Line	Private	Government/ Private	Private
Pays Dividends	No***	Yes	Yes	Yes
Insurance	Private External	Private External	Private External	Private External
Tax Liabilities	Limited	Full	Full	Limited

* Government must approve fee increases.

** UK, NZ and Germany use some military staff. In Germany they are paid civilian wages.

*** UK has put any positive cash, net of depreciation, in special sinking funds.

13.3.1 UNITED KINGDOM

The relevant ATC institutions in the U.K. are the Civil Aviation Authority (CAA) and National Air Traffic Service (NATS). External oversight is provided by the Ministries of Transport, Finance, and Defence; the Monopolies and Mergers Commission (MMC); the Transport Accident Investigations Branch (MOT); and Parliament.

NATS, a joint subsidiary of the CAA and Ministry of Defence, provides air traffic management and ATC services. The CAA is a public, limited liability corporation wholly owned by the government, subject to public utility-type regulation. It is headed by a Government-appointed chairman and a Board of up to 16 members. In addition to technical regulation, the CAA also provides economic regulation. The CAA oversees NATS in the area of safety regulation. If NATS wants to change ATC procedures, it must justify them to the CAA by presenting a formal risk analysis.

CAA and NATS executives have significant authority and responsibility. CAA is directed to achieve financial self-sufficiency, and it resembles corporations operating in the private sector. It relies on user fees to cover capital and operating expenses, and in FY1993 had an income of $860 million. Total CAA employment is about 7,300, of which about 5,200 serve in NATS. About half of the NATS staff are controllers or controller assistants.

To meet growing demand, NATS has embarked upon a multi-year modernization program that will require increased revenues to cover depreciation; annual capital requirements have expanded more than 500 percent since 1987-88. The CAA recently opened a new area control center to serve London. This includes a $500 million en route system being designed and installed by IBM. The project is on time and on budget, and the corporation's managers attribute the project's progress to their freedom from government procurement restrictions.

Even so, high capital costs have increased pressure on the organization to become even more businesslike. NATS's services are the most costly in Europe, and the issue of best practice productivity is becoming an increasing concern among users. While CAA and NATS can borrow to finance investment, they are constrained by government borrowing limits. As a result, the government may allow CAA to finance a new ATC facility through borrowing on private markets.[21]

[21]The U.K. Department of Transport may announce a plan to privatize its ATC services according to a recent report. Flight International, March 9 - 15, 1994, p. 8.

13.3.2 GERMANY

The relevant ATC institution in Germany is Deutsche Flugsicherungs GmbH (DFS). Oversight is provided by the Ministry of Transport (MOT) and by Parliament. The DFS only recently replaced an autonomous government authority within the MOT, so it is difficult to draw conclusions about the organization's performance.

Strong military demand, considerable overflights, and very strong growth in commercial movements created a congested airspace that is complex to manage. Budgeting problems have meant that the large investment program needed was implemented sporadically. Aviation needs in Germany tend to be subordinated to highways and rail. Controller morale suffered and delays led to massive demands to change the system.

The DFS was established as a limited liability company with the government as the lone shareholder. The Minister of Transport staffs the "Owner's Assembly." The chief executive has a fixed term but can be removed by the oversight bodies. There is also a Management Board of Senior Executives and an "Advisory Committee" with participation from the work force.

The DFS has increased salaries over civil service wages for most controllers, but employees no longer receive civil service benefits. The newly private controllers have also gained the right to strike. The change in employee status for ATC controllers was a driving force for corporatization in Germany. There was a conscious effort to increase salaries in return for increased controller productivity.

The DFS is required by law to recover its full costs from users. However, general aviation aircraft with gross weights below 4,400 pounds are exempt from user fees. The DFS has responsibility for its own investment program and can borrow in the capital market. The government retains a central role in oversight and coordination, including rates charged. German ATC user fees are among the highest in Europe, though they are still below those in the U.K. Delay rates in 1992-93 have been reduced from the very high levels in previous years. Increased controller productivity has been cited as the principal force leading to reduced delays.

13.3.3 NEW ZEALAND

The relevant ATC institution in New Zealand is the Airways Corporation of New Zealand (ACNZ). Oversight is provided by the Civil Aviation Authority (CAA); Ministries of Transport and Finance (Treasury); the Transport Accident Investigation Commission;

Crown Company Monitoring Unit; External Advisors State Owned Enterprises (SOE) Steering Committee; and Parliamentary committees.

The NZ CAA is a public corporation whose Board and Chief Executive are appointed by the Minister of Transport. NZ CAA relies on indirect user and registration fees to fund its safety regulatory activities. An independent state-owned enterprise (SOE), the ACNZ provides ATC services and leads a modernization program. It relies on direct charges from commercial users to fund the ATC system, and a system of an annual fee from general aviation.

The ACNZ is a limited liability company wholly owned by the government. It has a total staff of 656, of which 70 percent are controllers. ACNZ's parent ministry is Finance, not Transport. Its Chairman and Board are appointed by the Finance Minister, and the Board names a CEO. NZ users lack direct control of the corporation, but do enjoy strongly articulated formal rights of consultation.

ACNZ determines its own levels of staff compensation and can procure goods and services based on its own criteria. It can borrow only on the open market, and pays all New Zealand taxes. ACNZ's rate of profit is not subject to formal regulation.

ACNZ is highly focused on productivity, which has risen dramatically in recent years as the modernization process has been executed. User charges have fallen equally dramatically, a 15 percent discount for instrument flight rules en route service was announced in mid-March, and profitability has been strong, $5.1 million for the six months ending December 31, 1993. Overall, ACNZ has demonstrated excellent efficiency of investment. Not only was the modernization process carried out in a cost-effective way, but it was done while simultaneously lowering charges and improving profitability.

13.3.4 AUSTRALIA

The Civil Aviation Authority is the relevant institution in Australia's ATC system. Oversight is provided by the Ministry of Transport and by Parliament.

The Australian CAA is based on the British model, with economic and technical regulatory functions under one government business enterprise (GBE). The Ministry of Transport retains broad policy oversight functions. When CAA was established Australia's airports were simultaneously placed under a separate Federal Airports Corporation, allowing user fees to go directly to the organizations providing service.

CAA may borrow in private markets, and it faces the same tax exposure as a private corporation. Most of the CAA's revenues come from service fees, with the remainder from a GA fuels tax and inspection and audit fees. Revenues cover 77 percent of estimated costs in the current fiscal year.

Costs have fallen 18 percent since 1990, and staff has been reduced by 32 percent. In addition the number of area control centers has been reduced from five to two. Local managers have more authority under the corporatized system, such as the ability to control procurement using decentralized operating budgets.

ATC charges have fallen 37 percent in real terms since 1988, though they remain high by regional standards. The CAA expects to earn a profit of A$40.8 million this fiscal year. Overall, the government, CAA employees, and users are pleased with the CAA's results and expect further cost reductions.

13.3.5 CANADA

Transport Canada is examining the corporatization of ATC on a self-sustaining basis with direct user fees.[22] The current system operates at a deficit. Canada is closely following U.S. reform efforts and has a history of good cooperation with FAA.

Currently, the Air Navigation Service of Transport Canada operates as a public service similar to ATC in the U.S., with indirect user fee recovery. Canada hopes to gain operating cost savings from reform, as well as to deal with political intrusion in decisionmaking, inefficient procurement practices, problems imposed by the annual budget process, and work force morale and management issues.

Transport Canada appears to favor a wholly-owned government corporation free to set pay scales and to invest, borrow, procure equipment and bill customers similarly to public utilities. Government would retain responsibility for regulation, accident and incident investigation, airspace policy, international coordination, R&D, and non-self-sufficient services that are in the national interest. En route charges could replace the ticket tax. Some cross-subsidization of GA may be necessary, along with a gas tax.

The Air Transport Association of Canada, the Canadian Air Traffic Controllers Association, the Canadian Airline Pilots Association and the Canadian Business Aircraft

[22]Canada recently announced that it will hold public consultations on reorganizing ATC. The Globe and Mail (Toronto), March 12, 1994.

Association are jointly proposing a private non-profit organization. A final decision is expected in the Fall of 1994.

13.4 CONCLUSIONS

Although great differences exist among the countries examined in this section, foreign ATC reorganizations have addressed many issues similar to those now faced by the U.S. This study found overall public and political support for the changes made in foreign ATC organizations. Although the experience in each country differs somewhat, ATC corporatization in other countries has led to reduced fees, improved services and more rapid modernization of the ATC system.

In outreach sessions with representatives of foreign aviation authorities and ATC providers, not one suggested that there was interest within their countries to step back from ATC corporatization. These countries have achieved many of the improvements sought from corporatization. Overall, the examples of successful ATC corporatization in foreign countries (and the interest in this form in several others) show that it can resolve many of the problems similar to those the U.S. now faces. Most importantly, there is no evidence that ATC corporatization has had any negative effect on safety. In fact, during the outreach with foreign ATC organizations, a number of countries indicated that safety had been improved through corporatization because it has facilitated more rapid modernization of ATC.

14

U.S. PRECEDENTS FOR A GOVERNMENT CORPORATION

14.1 INTRODUCTION

This section examines various existing U.S. Government corporations to determine how they are structured and managed, and how effectively they function. The EOC, Task Force and Working Groups reviewed the experience of existing U.S. Government corporations to determine the attributes which have led to successful government corporations. In addition, the study group wanted to identify what limitations the other government corporations operated under. This review was used to structure the EOC recommendations for the USATS. Five major areas analyzed are governance, external oversight, financing, personnel and procurement.

This section broadly discusses the 45 entities identified by the Government Accounting Office (GAO) in its *Report on Government Corporations* (1988)[23], and examines the following seven organizations in detail:

- St. Lawrence Seaway Development Corporation (SLSDC);
- Tennessee Valley Authority (TVA);
- U.S. (Uranium) Enrichment Corporation (USEC);
- National Railroad Passenger Corporation (Amtrak);
- United States Postal Service (USPS);

[23]The GAO report included all entities established, created, or authorized by the Congress to operate as corporate entities. In particular, this includes all corporations identified in the Government Corporation Control Act (GCCA) and other corporations identified elsewhere in the U.S. Code which are subject to any provisions of the GCCA.

- Federal Reserve System;
- Metropolitan Washington Airports Authority (MWAA).

Figure 14-1 shows the key organizational aspects for the above government corporations and for the proposed USATS. As can be seen, the USATS fits within the range of current practice for government corporations.

Figure 14-1

COMPARISON OF GOVERNMENT CORPORATION PRECEDENTS AND THE USATS

Entity	Ownership	Profit Status	Board	Financing	Personnel	Procurement
St. Lawrence Seaway	Wholly	Non-profit	Advisory	Tolls and Appropriations	Federal rules	Federal rules
TVA	Wholly	Non-profit	Directors	User fees and appropriations	Generally Exempt	Exempt except Brooks
USEC	Wholly	For-profit	Directors	User fees	Exempt	Exempt
Amtrak	Mixed	For-profit	Directors	User fees and appropriations	Exempt	Exempt
USPS	Independent	Non-profit	Governors	User fees and appropriations	Exempt	Exempt
Federal Reserve	Independent	Non-profit	Directors 3 Advisory	User fees and interest income	Exempt	Exempt
MWAA	N/A	Non-profit	Directors	User fees and grants/bonds	Exempt	Exempt
Recommended USATS	Wholly	Non-profit	Directors	User fees/debt	Exempt	Exempt

14.2 DEFINITION OF A GOVERNMENT CORPORATION

Government corporations are federally chartered entities that produce revenues and conduct business-type activities that are of national importance. Users generally pay for

the majority of the costs of the corporation and thus the focus of government corporations is usually on the ability to generate revenue.

While they have a number of common features, no two government corporations are the same. Some corporations are subject to Federal procurement and personnel regulations; others are exempt and have developed their own systems. Some are completely self-financing; others rely on appropriations. The majority of government corporations provide banking or insurance services. Two corporations provide transportation services: Amtrak and the St. Lawrence Seaway Development Corporation. Figure 14-2 contains a profile of the 45 government corporations included in the 1988 GAO study.

The National Academy of Public Administration has identified attributes that justify establishing a government corporation. Key among these are that government deals with the public as a business rather than as a sovereign, and that users, rather than taxpayers, are expected to pay the costs of providing services. A government corporation is suited to certain situations because it allows more flexible, businesslike operation, financial control and planning than typically is possible within a government agency. A government corporation also can allow the development of acquisition and personnel systems that are tailored to the needs of the entity and which differ from those used in government departments. The EOC believes that FAA's air traffic control functions fit well within the accepted definition of activities which justify the establishment of a government corporation.

14.3 BENEFITS/RISKS OF A GOVERNMENT CORPORATION

Some generalizations can be made about the nature of the benefits and risks associated with the government corporation form. Among the benefits are:

- Potential financial control and independence;
- Ability to create efficiency incentives;
- Ability to design procurement and personnel requirements;
- Longer tenure of top management likely;
- Reduced political interference.

Risks include:

- Ability to be sued;
- Requirement to indemnify;
- Potential loss of adequate oversight.

Figure 14-2

Summary Profile of Government Corporations

In 1988, the Government Accounting Office (GAO) prepared organizational, financial and legal profiles of 45 corporations authorized or established by the Congress. It prepared the following summary of key attributes.

Legal Status	Number of Corporations
Wholly government-owned	14
Mixed ownership	7
Other	24
Purpose of Corporation	
Banking-related	10
Education-related	3
Farm-related	9
Housing-related	6
Industrial-related	8
Investment-related	3
Other	6
Budget Status	
On budget	5
On budget, and subject to Government Corporations Control Act	16
On budget, but funds provided through related agency	6
On budget, but excluded from budget totals	8
Excluded from budget	10
Agency Status	
Subordinate to federal government agency	9
Independent federal agency	8
Not specified in enabling legislation	16
Not an agency or establishment of the federal government	12
External Financial Audit Requirements*	
Audit required by GAO	15
Audit required by independent public accountant	17
Audit required by GAO and independent public accountant	12
No audit requirement	1
Government Investment	
Yes	30
No	10

*Subsequently modified substantially by the Chief Financial Officers Act

However, government corporations do not always avoid certain problems often found in government agencies, such as micromanagement, dependence on appropriations, inefficiency and unresponsiveness. The existing government corporations note that the enabling legislation for the entity is particularly important in determining the degree to which it is subject to these problems. Generally, those corporations which are structured to be more independent of traditional government processes encounter fewer problems.

14.4 OWNERSHIP OF GOVERNMENT CORPORATIONS

Regarding ownership, government corporations can be divided into three major categories: wholly-owned, mixed-ownership, and private and others.

Wholly-owned corporations exhibit the closest relationship to the President and Congress. They have assets solely owned by the government and are managed by a Board or Administrator appointed by the President or a Cabinet Secretary. They pursue a governmental mission and may be capitalized by appropriations. Wholly-owned government corporations generally try to operate on a self-sustaining basis and recover the costs of operations through user charges.

Mixed-ownership government corporations are part private and part public. They have assets owned by both government and the private sector. The management structure is similar to a wholly-owned corporation but has more constituent representation and maintains more political independence.

Private or other types of corporations include a variety of organizations created by the Federal Government. For example, it includes government-sponsored enterprises which have been defined as privately-owned, federally chartered financial institutions with nationwide scope and limited lending powers that benefit from an implicit federal guarantee to enhance its ability to borrow money. The U.S. Postal Service is listed under the "other" category since it is not technically a government corporation. However, it behaves and has the characteristics of a wholly-owned, independent government corporation.

Of the 45 entities profiled by the GAO, 14 were wholly-owned, 7 were mixed-ownership, and 24 were private or other (including government-sponsored enterprises, or GSEs). Nine of the entities are housed in government agencies, and all of these are wholly-owned corporations. Six are explicitly for-profit organizations, and all but one (Amtrak) are classified as under private or other ownership. Typically, mixed- and wholly-owned government corporations are not-for-profit entities.

Few examples of mixed-ownership corporations exist in the U.S. Also, according to the GAO report, no mixed-ownership corporations have a parent agency, and no wholly-owned government corporations are for-profit (USEC became a corporation in 1993 and is the lone example of a wholly-owned, for-profit government corporation, though it is in the process of being privatized). The USPS is the only current government corporation that began as a large government agency, as is now proposed for FAA. Though not explicitly a for-profit entity, the USPS has accomplished the financial objective set by Congress, to become self-sustaining. This financial stability has been achieved largely through significant cost reductions, and despite continuing problems, the USPS is now more efficient than its federal predecessor.

14.5 GOVERNANCE

For all types of government corporations, the enabling statues provide for either a single administrator or a Board of Directors or both, usually appointed by the President of the U.S. or a Cabinet Secretary. Most of the corporations' Board members are appointed to fixed terms, and several have Boards that are required to have representatives from certain constituencies or other interested parties. The existence of an Advisory Board is perceived to enable input into the conduct of corporate activities, but a Board of Directors is viewed by some as having the potential for undue micromanagement.

14.6 EXTERNAL OVERSIGHT

External oversight by Congress and/or the executive branch is another issue handled differently among government corporations. Overall, the relationship between a corporation and Congress is largely dependent on the method of financing the corporation. Corporations funded by appropriations generally have more oversight. Even without appropriated funds, Congress can exercise control through specific statutory language. The GAO audits most government corporations and comments on their financial condition, as specified in the corporation's enabling legislation.

Besides influencing government corporations via funding or direct statutory control, another common approach to external oversight is a requirement of periodic reports to Congress on the corporation's operations.

14.7 METHODS OF FUNDING

The major problem government agencies face is the unstable and unpredictable budget process through which an agency must compete for general treasury revenues. In contrast, government corporations have a variety of financing mechanisms available. These include:

- Earning revenues from fees;
- Borrowing from the Treasury;
- Borrowing funds directly, based on the guarantee of future revenue streams;
- Receiving money from Congress through the appropriations process.

The method of financing government corporations varies among corporations with respect to the degree of self-sufficiency, level of appropriations, ability to use debt, and profit motive. Users generally pay the majority of the costs of a government corporation while appropriations are generally provided for non-revenue-producing activities or to offset losses. A limited number of corporations are chartered to be profit making.

The Government Corporation Control Act requires wholly-owned corporations to submit to Congress a business-type budget as prescribed by the President. These budgets contain estimates and a statement of financial condition. Most wholly-owned government corporations are on-budget.

Overall, the main issue for government corporations regarding financing is to what extent a corporation's revenues and borrowing authority permit self-sufficiency.

14.8 PERSONNEL

Government corporation employees are usually considered to be employees of the U.S. and subject to civil service rules. To the extent that a corporation's mission differs from other government agencies, corporations are generally exempt from government personnel regulations. If the work is comparable to that of other federal departments, civil service rules are likely to apply. Employees of mixed-ownership and other types of government corporations are generally not subject to civil service rules; instead these entities develop their own personnel systems.

The primary goal in developing any personnel system is to have the ability to attract and retain qualified employees. The major problem that federal agencies often face is the existence of arbitrary personnel ceilings, civil service requirements and procedures, and

the lack of competitive pay that can make it difficult to attract a talented and technically sophisticated work force.

14.9 PROCUREMENT

The cumbersome Federal procurement system is designed to prevent fraud and meet other social objectives, but instead often leads to barriers to the timely and efficient acquisition of sophisticated and rapidly evolving high technology goods and services. Enabling legislation determines whether Federal procurement regulations must be observed in a government corporation. Even if a corporation is not required to follow the regulations, most organizations establish contracting procedures to assure that the benefits of competition are retained.

14.10 SUMMARY

As mentioned earlier, no two government corporations are the same, and USATS would also be unique in that there would be no directly comparable U.S. Government corporation. USATS also is in the unique position of having public safety as a paramount concern; in other government corporations, except for Amtrak and the Saint Lawrence Seaway Development Corporation, it is a peripheral issue.

Government corporations are not a panacea. Problems in federal agencies can also be found in government corporations, and benefits of government corporations can be found in federal agencies. In general, a government corporation is most successful if the entity has a commercial function and can produce revenues. Government corporations are least successful when their fees are not related to the costs of providing services.

On the whole, the experiences of existing government corporations in the U.S. show that this form of organization can be used to provide for the more businesslike delivery of services. In all cases, the composition and wording of a corporation's enabling legislation is key to developing a successful organization.

15

REVIEW OF PAST STUDIES

15.1 INTRODUCTION

The EOC and the Corporate Assessment Task Force reviewed many prior studies on FAA and ATC restructuring to broaden their perspective and gather all available information. Thirteen studies or reports from 1985 to 1993 were formally reviewed, as listed in Figure 15-1 and included in a report to the EOC. The past studies have emphasized nine major problem areas:

- Budget Process/Program Planning;
- Revenue Generation;
- Continuity of Leadership;
- Organizational Culture;
- Personnel;
- Procurement;
- External Oversight;
- Conflicting Goals and Objectives; and,
- Technology/Operational Performance.

The areas discussed in each report are shown in Figure 15-1 and are briefly discussed in the following sections.

Figure 15-1

PROBLEM AREAS COVERED IN PRIOR STUDIES

Report	Budget Process/ Program Planning	Revenue Generation	Continuity of Leadership	Organizational Culture	Personnel	Procure-ment	External Oversight	Conflicting Goals and Objectives	Technology/ Operational Performance
National Performance Review	X				X	X			X
National Commission Report	X	X			X	X			X
Reason Foundation	X	X	X	X	X	X	X	X	X
Federal Managers Association			X		X	X		X	X
Phaneuf Associates Incorporated	X	X	X			X			
National Research Council	X	X	X	X	X	X	X	X	
Office of Technology Assessment	X		X	X	X	X	X	X	X
OST/FAA Working Group	X				X	X		X	X
Aviation Safety Commission	X		X	X	X	X	X	X	X
GAO	X				X	X			X
Apogee Research, Inc	X	X	X	X	X	X	X	X	X
National Academy of Public Administration	X	X		X	X	X	X		X
Air Transport Association	X	X			X	X			

See Figure 15-2 for the full names of the reports

15.2 REPORT OF THE NATIONAL PERFORMANCE REVIEW

The September 1993 National Performance Review, chaired by Vice President Gore, covered the operations of the entire Federal Government. Recommendations in *From Red*

Tape to Results: Creating a Government that Works Better and Costs Less are organized into four areas: Cutting Red Tape, Putting Customers First, Empowering Employees to get Results, and Cutting Back to Basics. The NPR recommended that government take four specific steps in putting customers first, including Creating Market Dynamics. In the discussion of Creating Market Dynamics, the report specifically recommends that FAA be restructured.

The NPR proposes to "restructure the ATC [system] into a government-owned corporation, supported by user fees and governed by a board of directors that represents the system's customers. As customer use rises, so will revenues, providing the funds needed to answer rising customer demands and finance new technologies to improve safety. Relieved of its operational role of the air traffic control system, the FAA would focus on regulating safety." (p. 61) The NPR states "the FAA ATC system is constantly hamstrung by budget, personnel, and procurement restrictions." (p. 60) and that the ATC system needs to have access to capital markets to modernize technology.

15.3 NATIONAL COMMISSION TO ENSURE A STRONG COMPETITIVE AIRLINE INDUSTRY REPORT

The National Commission to Ensure a Strong Competitive Airline Industry, created in 1993, investigated and made policy recommendations about the financial health of the U.S. airline and aerospace industries. The National Airline Commission's membership included experts in aviation economics, finance, international trade and related disciplines representing airlines, airports, passengers, shippers, airline employees, aircraft manufacturers, general aviation and the financial community. The National Airline Commission reviewed a broad range of aviation matters. Its recommendations, delineated in *Change, Challenge and Competition: A Report to the President and Congress,* are organized into three general areas: efficiency and technological superiority, financial strength and access to global markets. The first area includes a specific recommendation to restructure FAA.

The National Airline Commission report, issued in August 1993, recommends that FAA be established as an independent government corporation and removed from the Federal budget process:

> "The FAA must be reinvented. The new structure of FAA must be designed to produce a stable and predictable source of funds and to allow that funding stream to be leveraged to finance strategic capital investments, as well as a

regulatory system that is cost-effective, enhances safety and efficiency and does not impede the ability of the industry to manage its affairs." (p. 2)

The National Airline Commission report recommends that the FAA government corporation be created within the Department of Transportation to manage and fund ATC and related functions, including system development, procurement and maintenance. However, the Commission states that policy control of the ATC system and safety oversight should stay with the Federal Government.

Specifically, the Commission report recommends that the ATC Corporation be based on the following principles:

- Ability of the corporate entity to create and use a predictable, stable source of revenue for operations, maintenance and capital investment;
- Ability of the corporate entity to issue long-term bonds for capital purchases;
- Removal of current expenditures and revenues from the Federal budget in equal amounts for a fiscally neutral effect;
- Sufficient management flexibility to create systems for procurement, staff and budget consistent with the best practices in the private sector;
- Flexibility in a orderly transfer of operating functions to the reorganized entity; and,
- Continued ATC service to the Department of Defense, meeting national security requirements.

15.4 *HOW TO SPIN OFF AIR TRAFFIC CONTROL*–THE REASON FOUNDATION

Report author Robert Poole believes that air traffic control in the United States should be assigned to a government corporation. His August 1993 paper analyzes the need for a change, cites the success of ATC corporatization overseas, shows how such a corporation could work in the United States, emphasizing that workable user fees could be developed and safety adequately regulated, and proposes a specific plan.

The author proposes the creation of a federally chartered U.S. Airways Corporation. He describes it as follows:

> "All current ATC-related staff, facilities, and equipment would be transferred to the new corporate entity. It would have a corporate charter and a normal corporate board of directors, with initial members appointed by the President and Congress, but with subsequent membership determined by the company itself. ... Initially, 100 percent of its shares would be held by the Federal Government, though possible user ownership... and/or investor ownership... should not be ruled out. The company would operate on a fully self-supporting, though not explicitly for-profit basis." (p.25)

The FAA would retain all other functions, including airport grants and safety regulation.

15.5 *A PROPOSAL FOR A RESTRUCTURED, INDEPENDENT FEDERAL AVIATION ADMINISTRATION,* THE FAA CONFERENCE OF THE FEDERAL MANAGERS ASSOCIATION

This proposal was made in June 1993 by a group of Federal managers who believe that the key to improving FAA is reorganizing it to allow more focus and stability. The report recommends that FAA's functions be limited "to oversight and regulation of the safety-related responsibilities associated with aviation. All non-designated responsibilities and functions should be reassigned" to the Department of Transportation. (p.4) The proposal is not specific about what functions would be reassigned, although it does state that operating the ATC system would continue to be an FAA responsibility.

The major reforms proposed here involve management and financing; they include:

- Presidential appointment of the FAA Administrator for a fixed five-year term. The Administrator would report directly to the Secretary of Transportation, who would report annually on his or her performance to Congress. (p. 5)

- Creation of an "advisory board of directors to assist in determining the scope and mission of the organization." (p.5) Members would be appointed in equal numbers by the President, Congress and the Secretary of Transportation and would represent "the various aviation organizations, employee groups, private industry, and organizations representing the public sector." (p. 6)

- The restructuring of "headquarters, regions and facilities ... to eliminate duplication, micromanagement and unnecessary staff." (p. 7)

- The establishment of "an office of procurement, with direct reporting relationships to the FAA Administrator." (p. 9) This office would have "financial control of all programs under development." (p. 9)

- FAA to "be supported by revenues from all segments of aviation" through fees collected "on a direct-benefit basis...based upon the use of the systems, frequency and level of services provided...placed in a public corporation account of the organization for the specific and restricted use of the FAA." (p. 8)

15.6 *A REVIEW OF FEDERAL AVIATION ADMINISTRATION FINANCIAL AND ACQUISITIONS SYSTEMS*, PHANEUF ASSOCIATES INCORPORATED (PAI)

This review prepared for the National Aviation Associations Coalition considers alternatives for the finance and acquisitions systems of the FAA. Primary research was conducted in the form of interviews with FAA officials, representatives of aviation trade associations, contractors and consultants. The research team consisted of individuals with managerial experience in the FAA.

Although no recommendations are made, alternatives for acquisition and finance systems are reviewed. Among the finance alternatives examined are special treatment under budget agreements and/or Gramm-Rudman-Hollings sequestrations, additional RE&D funding, and increased support for both additional airport grants via "job bills" and operations funding. Acquisitions alternatives considered include legislative change, especially as relates to both the Brooks Act and the Competition in Contracting Act (CICA). The report shows by example how the acquisition of replacement hardware for the ATC system can easily take seven years or more from initial authorization of funds to final delivery. The major issues relating to future prospects for the FAA as reported by PAI in this report are the continuity of leadership, financing, the acquisitions process, and the general autonomy of the FAA.

15.7 *WINDS OF CHANGE: DOMESTIC AIR TRANSPORT SINCE DEREGULATION*, TRANSPORTATION RESEARCH BOARD

Late in 1988 the Governing Board of the National Research Council approved a two-year study of the air transport industry since deregulation. *Winds of Change*, issued in 1991, cites three basic choices for organizational reform, ranging from fully public to private models. The report concludes, only a public corporation "would provide the authority and discretion needed to improve operational performance without severing links between regulatory and operational functions, which may compromise safety. The [Committee for the Study of Air Passenger Service and Safety Deregulation] recommends a publicly mandated study of change in the organization of the FAA by an independent group or organization that focuses on the relative merits and drawbacks of [assigning the ATC functions of the FAA or converting the entire FAA to a public corporation], with a report to the President and Congress within 2 years after the study gets under way." (p. 307).

Appendix B of this report provides an extensive review of various organizational forms and recommends that the entire FAA be converted into a public corporation. This section was not included in the main body of the study, however, because some of the Committee members did not share its conclusion. It stated that the year-to year funding style of the Federal Government, as well as the short tenure of agency heads, impeded long-range planning. Further, numerous and serious shortcomings in the Civil Service laws were noted. The study also states "the case can be made that an organizationally separate regulatory overseer of ATC would enhance safety because it would not be faced with the same pressures to make compromises." (p. 349) In summation, the report stated the FAA "needs an organization whose values will continue to emphasize conservatism when it comes to the safety of aircraft operations, while seeking innovation and dynamism in responding to industry and technology changes. That can best be achieved by a change to a corporate-type entity." (p. 337)

15.8 *SAFE SKIES FOR TOMORROW: AVIATION SAFETY IN A COMPETITIVE ENVIRONMENT*, U.S. CONGRESS, OFFICE OF TECHNOLOGY ASSESSMENT

This July 1988 report provides a broad overview of the status of aviation safety. The most relevant information on FAA structure and issues is in Chapter 1 (Summary) and Chapter 3 (Regulatory and Institutional Framework).

Safe Skies suggests that "Congress may wish to identify safety as FAA's sole and unique responsibility, especially for ATC and regulatory programs. Responsibility for

fostering economic development of the industry could be returned to the Secretary of Transportation." (p. 65) In addition, "OTA concludes that FAA's functions cannot be separated into regulatory and operating (ATC) components without diminishing the effectiveness of the entire system. Furthermore, without more emphasis on system safety at the very top, FAA agency-wide problems that have hampered the organization's capabilities are likely to continue." (p. 6)

The report uses as an example of the slow Federal process the fact that FAA did not become adequately staffed to handle the new entrants to the airline industry associated with deregulation until 1984, at which point the industry had entered a period of consolidation. Further, the report states "ATC system renewal has moved at glacial speed, slowed by inadequate system planning, technology development difficulties, and administration and congressional budget decisions." (p. 7)

15.9 *REPORT ON INDEPENDENT ATC CORPORATION*, DEPARTMENT OF TRANSPORTATION WORKING GROUP

The focus of this April 1988 study is the organizational options for restructuring the FAA and not on the definition of any problems with the existing FAA organization. However, the report notes five criteria established by DOT Secretary Burnley against which potential solutions must be measured:

- It must address the problem of rigid Federal personnel rules that prevent efficient deployment of key personnel.
- It must remove the burden of abstruse Federal procurement rules that prevent timely acquisition of new technology.
- The proposal must liberate the ATC system from the uncertainties of the Federal appropriations process and ensure adequate resources on a long-term basis.
- There must be adequate oversight and maximum accountability to ensure public safety.
- There should be consistency in both safe regulation and in the delivery of ATC services at every level of the organization.

The report provides a functional division of responsibilities between a recommended ATC corporation and the remaining FAA, a comparison between a private non-profit corporation and a government corporation responsible for the ATC system; and summaries of several existing private and government corporate structures. The report recommends that:

> "All ATC operational and research functions be transferred to a monopoly non-profit ATC Corporation which would be legislatively charged with the responsibility for accepting, developing, operating, and maintaining the ATC system. The FAA will continue to regulate both civil and military operations in the interest of safety, while responsibility for operating and maintaining the ATC system will transfer to an ATC corporation." (p. 1)

Under this proposal, FAA would interface with the new ATC corporation and oversee its operation and safety. Further, the FAA will maintain its role as the focal point of national aviation policy, ensuring congressional oversight of significant policy changes, and would also retain its role of regulation and enforcement.

The report suggests that the Federal Government receive compensation for the transfer of government-owned equipment and real estate. This could be accomplished by first transferring some of the Aviation Trust Fund to the new corporation and then the corporation "will buy, as opposed to lease, the equipment." (p. 11)

15.10 *AVIATION SAFETY COMMISSION: FINAL REPORT AND RECOMMENDATIONS*, AVIATION SAFETY COMMISSION

The Aviation Safety Commission was created by Congress to conduct an intensive inquiry into air safety, particularly as it is affected by FAA's organization and functions. The Commission's report, released in April 1988, recommends that "FAA be transferred from the DOT and be established as a user-funded authority which is:

- Overseen by a 9-member Board of Governors appointed by the President and confirmed by the Senate;
- Managed by an Administrator who is appointed and confirmed for a term of seven years;
- Subject to agency-wide regulatory oversight by a Director of Aviation Safety who is appointed and confirmed for a term of seven years;

- Freed from the constraints of the Federal civil service and procurement systems" (p.1; see also pp.25-30).

The report also states that instability and uncertainty in the budget may "distort choices between capital (hardware) solutions to problems versus labor (personnel) solutions." (p. 23) Further, the report notes that capital or technology-based solutions may be advantaged in that these solutions may be easier to sell in the political process. Finally, the commission found that because of public or political pressures the flow of new hires has tended to be uneven and in "lumps", which has made the effective use of new personnel difficult.

15.11 *PRIVATIZATION OF FEDERAL AVIATION ADMINISTRATION FUNCTIONS*, TESTIMONY OF KENNETH M. MEAD, U.S. GENERAL ACCOUNTING OFFICE

This December 1987 GAO testimony primarily summarizes findings of previous studies of ATC systems and aviation safety. It also makes some general statements about issues related to reorganization and privatization proposals. This testimony itself does not present an original proposal, though it does make broad suggestions regarding how a restructuring should proceed.

GAO's testimony states that a key criterion by which to judge any proposal is that it ensures accountability for aviation safety and protection of the public. Further, deregulation has combined with other factors to present FAA with "formidable challenges, and we believe these challenges cannot be overcome through structural changes alone." (pp. 1-2) As an example, Mead cites the delay of the modernization of the ATC system, "Because sophisticated technologies need to be developed and shown to work reliably, not because of funding shortages or procurement rules." (p. 7)

15.12 *THE PROPOSED NATIONAL AVIATION AUTHORITY: A FIRST REVIEW*, APOGEE RESEARCH, INC.

This September 1986 study by Apogee Research, Inc. analyzes a proposal by the Air Transport Association to create a National Aviation Authority (NAA) to carry out all current FAA responsibilities except safety regulation. The report focuses heavily on the proposal's implications for the interests of airport operators, especially the ways in which

it would affect airport grants and the completion of the National Airspace System (NAS) Plan.

The study raises two major concerns:

- How large will the Airport Improvement Program (AIP) be under the NAA? and,

- How can the airport operators influence the grant process so that safety and capacity concerns can be balanced?

The study proposes that the NAA replace most of the functions of the FAA, taking over the financial resources of the Trust Fund. NAA responsibilities would include operation of the air traffic control system, completion of the NAS Plan, research and development, and the airport grant program. The remaining FAA would be responsible only for setting and enforcing safety rules. (p. 2) The NAA would be a Federal corporation run by a director who "would be appointed to a single ten-year term by the President with the approval of the Senate." (p. 2) There would be two advisory panels: a Policy Advisory Board composed of cabinet members, Senators, and Representatives with aviation concerns; and a Technical Advisory Committee including representatives from user groups and airport operators. The proposed NAA would collect user fees and have bonding authority.

15.13 *THE AIR TRAFFIC CONTROL SYSTEM: MANAGEMENT BY A GOVERNMENT CORPORATION, A STUDY FOR THE AIR TRANSPORT ASSOCIATION OF AMERICA*, NATIONAL ACADEMY OF PUBLIC ADMINISTRATION

In this March 1986 report, the National Academy panel concluded that, if properly chartered by Congress, a government corporation would offer substantial advantages over the current FAA in the management of the airports and airways program of the United States. This conclusion was based on interviews with "knowledgeable" officials at FAA, the Office of the Secretary of Transportation, the Office of Management and Budget, public interest groups, and others in the private sector. The panel expresses deep concern that breaking the FAA into several segments, one of them an ATC system, would lead to problems with coordination. (p. 23)

Their major organizational recommendation is that the Authority should report to the Secretary of Transportation, or have a single chief executive officer, appointed by the

President with the consent of the Senate, or have an Advisory Board of members appointed by the President. (p. 29) The Panel did consider the option of a Board of Directors to administer the Authority, but rejected the idea because of their concerns about a division of authority and the composition of such a Board. (p. 29)

Finally, the Panel recommended that the Authority establish a corporate system of user charges in lieu of the present tax and Trust Fund mechanism. (p. 32)

15.14 *FEDERAL CORPORATION APPROACH TO THE MANAGEMENT AND FUNDING OF THE AIR TRAFFIC CONTROL SYSTEM,* AIR TRANSPORT ASSOCIATION

This report, released in September 1985, was requested by the Air Transport Association (ATA) Board of Directors in response to concerns about the capacity and effectiveness of the ATC system. ATA staff prepared the report, which does not discuss existing problems so much as possible solutions and their benefits. Specifically, it focuses on solving problems with the budgeting process.

The ATA report states that, as "applied to the ATC system, a Federal corporation would reflect the predominantly commercial nature of the services provided, and would facilitate dealing with the users in a business-like manner." (p.10) It mentions specifically that personnel, financing/borrowing, and procurement would benefit from operating in a business-like manner.

The ATA report also asserts that elements of the FAA should be retained as government function and funded from general revenues. These functions include:

- Administration of aviation flight safety and standards programs, except for the flight inspection program which directly supports the ATC system;
- Planning, direction and evaluation of research, engineering and development programs not related to ATC;
- Civil aviation security;
- International and planning functions unrelated to ATC; and,
- Non-ATC-type training and testing.

15.15 CONCLUSION

After reviewing past studies' discussions of the current problems at FAA and the proposed organizational options, the question remains as to how these alternative structures might alleviate these problems. Figure 15-2 summarizes the considerations and recommendations of each study. Although six of the studies considered the option of reforming the FAA without undertaking any structural change, only one of them (the OTA study) finally recommended that strategy. Of the 13 studies reviewed, eight proposed some form of reorganization, and seven of the eight recommended that a government corporation be established for all or part of FAA. Five of the seven studies recommended that the corporation be established for ATC and not for the entire FAA.

Figure 15-2

Proposed Types of Organizations in Prior Studies

Report	Create FAA Government Corporation	Create ATC Government Corporation	Change FAA from within
National Performance Review (NPR) *From Red Tape to Results: Creating a Government that Works Better & Costs Less*, September 1993		X	
National Commission to Ensure a Strong Competitive Airline Industry (AIRC) *Change, Challenge and Competition: A Report to the President and Congress*, August 1993		X	
Reason Foundation Policy Study (REA) *How to Spin Off Air Traffic Control*, August 1993	✓	X	
FAA Conference of the Federal Managers Association (FMA) *A Proposal for a Restructured, Independent Federal Aviation Administration*, June 1993			✓
Phaneuf Associates Incorporated *A Review of Federal Aviation Administration Financial and Acquisition Systems*, March 1992			✓
Transportation Research Board (TRB) *Winds of Change Domestic Air Transport Since Deregulation*, 1991	✓	✓	✓
Office of Technology Assessment (OTA) *Safe Skies for Tomorrow: Aviation Safety in a Competitive Environment*, July 1988			X
Department of Transportation (DOT) *Report on Independent ATC Corporation*, April 1988		X	
Aviation Safety Commission (ASC) *Aviation Safety Commission: Final Report and Recommendations*, April 1988	X		✓
General Accounting Office (GAO) *Privatization of Federal Aviation Administration Functions*, December 1987	✓	✓	✓
Apogee Research, Inc (APOG) *The Proposed National Aviation Authority: A First Review*, September 1986	✓		
National Academy of Public Administration (NAPA) *The Air Traffic Control System: Management by a Government Corporation, A Study for the Air Transport Association of America*, March 1986	X		
Air Transport Association (ATA) *Federal Corporation Approach to the Management and Funding of the Air Traffic Control System*, September 1985		X	✓

X = Recommended by the study ✓ = Considered in the study

NB TRB, GAO, and ATA are the only studies to discuss privatization of ATC, but none recommend privatization

FAA is the only study to discuss both profit and non-profit government corporations.

FMA proposes setting FAA up as an independent agency, separate from DOT.

16

INTERNATIONAL OBLIGATIONS AND THE U.S. AIR TRAFFIC SERVICES CORPORATION

16.1 INTRODUCTION

The U.S. Government would retain the responsibility for upholding all current and future obligations in international aviation agreements with the transfer of air traffic control (ATC) to a government corporation. These obligations include those arising from the Convention on International Civil Aviation ("the Chicago Convention"), from multilateral specialized bodies related to air navigation, and from bilateral air services agreements (ASAs).

The development of a USATS by the U.S. must consider two basic international issues: coordination of air traffic management (ATM) systems development and standards with other countries, and financing the U.S. ATC system consistent with international agreements.

Coordination entails making sure that changes to the ATM system or operating procedures are addressed at the inter-governmental level to ensure that global air navigation continues to be safe and efficient. Financing issues relate to non-discriminatory treatment of foreign users and linking user fees to the costs of service provided. Financing mechanisms that violate these principles could be legitimately challenged by the international community. As noted in Section 13 above, there is a trend toward increased use of businesslike "designated authorities" to provide ATC services. Their experience indicates that the use of a federal corporation to provide ATC services should not create unmanageable problems for the U.S. in meeting international obligations. However, there

are considerations that may limit the latitude of the USATS, principally in charging international flights for ATC services.

16.2 THE CHICAGO CONVENTION AND RELATED AGREEMENTS: NATIONAL OBLIGATIONS TO PROVIDE AIR TRAFFIC SERVICES

The Chicago Convention accepted unconditionally the principles of national sovereignty over airspace and each nation's obligation to operate its airspace consistent with broad international practice. The Convention also put into place mechanisms to implement these principles as well as elements of flexibility in their application. The Convention and related agreements address access to airspace, enforcement authority of States, user charges, and innovation/development of the global air navigation system.

Access refers to the right of both non-scheduled and scheduled civil aircraft of foreign registry to use national airspace and make needed technical stops subject to following certain national rules. All signatory countries have agreed to make available the necessary information and facilities to enable foreign aircraft to comply.

Authority of States refers to the requirement that operators obey rules of the air imposed by national authorities. Government has the prerogative to delegate its authority to administer airspace to another government or regional body, or to an independent authority or private company, as long as the national government retains underlying sovereign responsibility.

Regarding service obligations, the Convention emphasized that ATM is not just "control," but is actually the process of providing services and collecting fees for doing so. The Articles establish basic standards and procedures for fees and notification. Key provisions include equal treatment of foreign operators and national carriers in international service, and the implication that all fees charged must be related to specific services provided. These provisions seek to ensure minimum national practices worldwide.

The International Civil Aviation Organization (ICAO) also has become an important element in worldwide aviation development and innovation, notably by encouraging leading national systems to build and improve their capabilities.

16.3 THE ROLE OF SPECIALIZED BODIES, ANNEXES AND DESIGNATED AUTHORITIES

ICAO's Air Navigation Commission (ANC), special panels, working groups, and regional organizations have created an international framework of detailed standards and practices.

Regional groups are one way that ICAO member countries facilitate transit of direct borders and deal with oceanic airspace. The ICAO system recognizes the virtues of these and other specialized organizations for providing services required by the aviation industry. The ICAO Annexes explicitly permit countries to designate an agent to provide air traffic services or other aviation services, as long as all international standards are met. As such, the U.S. would designate the corporation as its provider of ATC services.

16.4 THE ROLE OF BILATERAL AGREEMENTS

The United States has entered into many bilateral agreements that deal with both technical issues (called Airworthiness Agreements) and economic issues (Air Services Agreements, or ASAs). ASAs affect air traffic services by requiring adherence to national rules establishing standards for user fees. Although the Chicago Convention contains some enforcement procedures, bilateral agreements make the Chicago Convention obligations explicit and enforceable as between the two parties, to take advantage of the stronger mechanisms found in bilaterals. The U.S. has led the move toward more vigorous enforcement of these provisions.

Enforceable bilateral agreements provide the U.S. with a strong legal basis for taking action against foreign violations. These functions would stay with the Department of Transportation and the remaining FAA. If it detected violations, the corporation would refer these to the remaining FAA for resolution. Conversely, if a foreign government were to have a grievance with the USATS, the country would deal with the U.S. Government. As a result, the Federal Government must retain some form of ATC oversight to uphold its responsibilities under international agreements. These functions will continue to be lodged in DOT, which has these responsibilities today. As such, there should be no differences from the current situation, especially as seen by other countries.

16.5 INTERNATIONAL GUIDELINES ON ATC USER FEES

New systems of raising revenue for USATS must be consistent with Article 15 of the Chicago Convention, Article 1 of the International Air Services Transit Agreement ("Transit Agreement"), and with various bilateral air services agreements. Article 15 establishes national treatment, *i.e.*, charges cannot discriminate between U.S. and foreign aircraft engaged in similar international operations and states that no fees shall be imposed solely on the right of transit over, entry into or exit from U.S. territory. The latter requirement has been interpreted as not allowing a fee that is unrelated to the cost of providing the air traffic service. The Transit Agreement requires that charges on scheduled services for overflight or technical stops be just, reasonable, and non-discriminatory. In addition to prohibiting discrimination, bilateral agreements typically require charges to airlines to be just, reasonable, equitably apportioned among categories of users, and to be based on no more than an equitable portion of the cost of providing a facility or service. Bilateral air service agreements also require the U.S. Government to encourage consultations between users and charging authorities, as well as to encourage charging authorities and users to exchange information necessary to establish the reasonableness of the charges. Also, reasonable notice is to be given prior to changing user charges.

ICAO has developed guidelines (Council Statement) to aid in determining how fees should be established.[24] These guidelines, while not binding, are based on the principles of Article 15 of the Chicago Convention and are consistent with broadly accepted international practices. Not all of the ICAO guidelines are relevant to the United States; some, for example, were designed to address particular circumstances of developing countries. Others, *e.g.*, the endorsement of aircraft weight as an element of charging formulae, reflect policy positions with which the United States has consistently disagreed over the years. Taken as a whole, however, the ICAO Council Statement provides a reliable guide for interpretation of the obligations inherent in Article 15 of the Convention.

The Council Statement's central, guiding principle is that where air navigation services are provided for international use, users may be required to pay their share of the related costs, but international civil aviation should not pay for costs which are not properly allocable to it. It recommends that several steps be followed in establishing an equitable cost recovery system:

[24]International Civil Aviation Organization, "Statements by the Council to Contracting States on Charges for Airports and Air Navigation Services," Fourth Edition 1992 (DOC 9082/4).

- An accounting of total air navigation services costs incurred on behalf of aeronautical users;
- An allocation of these costs among categories of users; and
- Development of a charging or pricing policy system.

In determining total costs to be recouped, the Statement provides an inventory of typical air navigation services: air traffic services (approach control, aerodrome control, en route and area control, flight information, alerting services); communication facilities and visual, radio and satellite navigation aids; meteorological services; and ancillary services allocable to civil aviation, *e.g.*, search and rescue, accident investigation, aeronautical charts and information services.

16.5.1 COST BASIS FOR CHARGES

The full cost basis for ATC charges includes operations, maintenance, management and administration, interest on capital investment, and depreciation of assets. Costs should be assessed in relation to facilities and services provided under ICAO Regional Air Navigation Plans, with necessary additional services and facilities as approved by the Council. Other facilities and services, unless requested by users, as well as any excessive construction, operation or maintenance costs, should be excluded. Costs of approach and aerodrome (airport) control services should be identified separately from en route costs. Revenues may provide for a reasonable return element to contribute towards necessary capital improvements.

16.5.2 COST ALLOCATION

Costs should be allocated in a manner equitable to all users, to ensure that international civil aviation and other users (*e.g.*, domestic civil aviation, State or other exempted aircraft, non-aeronautical users) are not burdened with costs not properly allocable to them according to sound accounting principles. States should acquire basic utilization data, *e.g.*, number of flights by user category, where such information is relevant to cost allocation and the cost recovery system.

16.5.3 CHARGING SYSTEMS

Any charging system should be as simple and equitable as possible, and the administrative cost of collection should not exceed a reasonable proportion of the charges collected. The following represent desired features of ATC charging systems for international flights:

- Charges should not be imposed in a way that discourages the use of facilities and services necessary for safety or for the introduction of new aids and techniques.

- The system of charges must be non-discriminatory between national and foreign users engaged in similar international operations, and between two or more foreign users.

- Any charging system should take into account the cost and effectiveness of services, and should take account of the financial situations of both users and service providers.

- Any under-recovery of costs due to preferences, rebates or other reductions in charges extended to particular categories of users should not be charged to other users.

- No facility or service should be charged for twice with respect to the same utilization; where there is dual utilization (*e.g.*, a facility providing approach as well as en route control) the costs should be equitably distributed.

- Charges for international general aviation should be reasonable, with regard to the cost of the facilities needed and the goal of promoting the development of international civil aviation as a whole.

16.5.4 APPROACH AND AERODROME CONTROL CHARGES

Where levied, charges for approach and aerodrome (airport) control should be a single element of the landing charge or a single charge per flight.

16.5.5 EN ROUTE CHARGES

Multiple charges per flight should be avoided. While the Statement generally recommends basing the charge essentially on the distance flown and the aircraft weight, it recognizes that the character of a given airspace (*e.g.*, type of traffic, distance flown and aircraft characteristics) will determine the most appropriate charging method.

16.5.6 CHARGES FOR SERVICES USED BY AIRCRAFT WHEN NOT OVER THE PROVIDER STATE

Service providers may recoup the relevant costs for services provided to flights not passing over the provider State (*e.g.*, ATC services in oceanic sectors operated by a provider state).

16.5.7 CONSULTATION WITH USERS

Consultation in advance of significant changes in the structure or level of charges, as well as during the planning stage of major new air navigation services, is highly desirable. General agreement between providers and users on proposed charges is encouraged although not required. Users also should be provided with adequate financial information, and reasonable advance notice of changes in charges.

16.5.8 NON-CIVIL USE OF THE SYSTEM

In developing a new user fee system, a detailed analysis will need to be performed to accurately account for the cost of military and civil use of the system. ICAO guidelines state that in determining the allocable costs of the system, costs for military or other federal functions should be excluded. Where both civil and military are served, the cost share allocable to civil aviation should be determined to ensure that no military costs are included in the cost base.

16.6 IMPLICATIONS FOR THE EXISTING FAA INTERNATIONAL PROGRAM AND POLICY ACTIVITY

The international nature of ATM will effectively require continued U.S. Government participation. This would remain within existing functions in DOT and FAA. Government

can delegate operating and other procedures, but not its ultimate authority over airspace. The EOC recommends, therefore, that the Administrator retain the ultimate authority in airspace regulations, while delegating much of the rulemaking process to the USATS.

Given that some degree of government involvement in international aviation must continue, it is important to examine how the existence of a corporation would affect FAA's current functions and to consider possible ways of dividing these functions between the remaining FAA and the corporate entity. One possibility is for all of FAA's International Office and overseas representation to remain with FAA. Technical issues, however, would logically require participation by the USATS.

In a practical sense, the corporation would be part of the U.S. presence in the international ATM environment, with appropriate formal and policy leadership from the government (representing the public interest). For example, decisions on whether to commit technical resources to support particular countries or programs require policy review and perhaps direct management by the government, though there is no reason the corporation would not carry out these activities. The EOC recommends that the enabling legislation for the USATS allow it to receive reimbursement for such services directly from the foreign government or on behalf of the foreign government from an international organization or the U.S. government.

16.7 SUMMARY

The existing international agreements will require that the U.S. Government provide oversight of the USATS's rates and charges related to international aircraft operations. Because the U.S. Government is the signatory to international ATC agreements, foreign governments will look to it to assure that the USATS follows accepted practices, including user consultations, in establishing rates and charges for ATC services provided to aircraft in international operations. It is likely that the corporation will have to establish cost bases for international ATC services so that these types of users do not bear costs not properly allocable to them. In other areas, the corporation and DOT will have to develop coordination procedures so that the U.S. Government can discharge its obligations under existing and future international agreements.

17

TRANSITION TO THE CORPORATION

17.1 INTRODUCTION

The EOC recognizes that the transition to the USATS must have no adverse effect on the day-to-day operation of the ATC system or on aviation safety. The EOC also recognizes the need for an expeditious transition so that the corporation can begin to function as an independent organization. To meet these goals, FAA and the USATS must develop a comprehensive transition plan and have sufficient time to implement that plan. The transfer of National and Dulles Airports from FAA to the Metropolitan Washington Airports Authority took less than eight months of intensive effort. This was a smaller organization than FAA and it was transferred intact; therefore, the EOC recommends that one year be provided for the transition. The FAA Administrator would have to certify that all necessary actions have taken place for the corporation to commence operation of the ATC system. The EOC recommends that the President appoint an interim chief executive officer within 30 days of the enactment of the USATS's enabling legislation. The CEO will function during transition and while the process of selection and confirmation of the Board is underway.

The EOC has identified many of the major issues that must be addressed during the transition. These issues have been divided into three categories, as follows:

- Issues that must be addressed immediately by FAA to lay the groundwork for restructuring the ATC system;

- Issues that must be addressed during the one-year transition period to provide the detailed structure for the new organization and to prepare for the actual transfer of facilities, personnel and functions to the USATS; and

- Longer-term issues that can be addressed once the corporation is in operation.

17.2 PRELIMINARY ISSUES AND ACTIONS

Some issues can be evaluated before the USATS is formally established. These preliminary actions include the following:

- Develop procedures for dealing with the transfer, lease, or purchase of real property and related assets;

- Determine the extent to which current interagency agreements can continue under a new structure and draft modifications to agreements as needed;

- Conduct a study of the allocation of FAA costs to its lines of business and services within lines of business, including FAA services provided to DOD and other public users and the associated costs of these ATC services. The study should also include an analysis of the usage and the costs of DOD providing ATC services to civil aviation.

17.3 TRANSITION ISSUES AND ACTIONS

The FAA (and once appointed, the interim CEO) should begin the transition process immediately upon passage of the corporation's enabling legislation.. These actions involve the implementation of the EOC's recommendations, and include the following:

17.3.1 GENERAL

- Engage transition support contractors to assist in developing new systems for the personnel, accounting and finance functions of the corporation. Many FAA systems are intertwined with the rest of DOT and the transition will need to include the other organizations affected.

- Develop a proactive plan for effective communications with all elements of the work force, including the unions--early, continuously, and in sufficient detail for employees to understand the nature of the changes and how the changes will affect them.

17.3.2 GOVERNANCE

- Within 30 days of the enactment of the corporation's enabling legislation the President will appoint the CEO of the Corporation to handle the transition in advance of the formation of the Board. The appointment of the interim CEO should not require Senate confirmation.

- Carry out speedy Presidential nomination and Senate confirmation of the members of the Board of Directors so that they can be involved fully in shaping and setting the direction of the Corporation during the transition.

- Establish general responsibilities for the Board of Directors, the CEO, and the Safety Committee.

- Develop procedures for the safety regulation of the USATS, including establishment of the organization and staff to carry this out.

17.3.3 FINANCIAL

- Implement the interim user charge system. These charges would be imposed on the same basis as the existing taxes. Any modification of these fees would await the action of a fully constituted Board of Directors.

- Identify committed trust fund balances for ATC functions to be transferred to the corporation, including acquisition and research programs.

- Establish initial capitalization of the corporation through asset transfer, with initial working capital provided by borrowing from the Treasury.

- Determine environmental liabilities of facilities that would be transferred to the corporation.

- Contract with an independent party to appraise existing property and other ATC assets and develop procedures to transfer them to the corporation.

- Provide training for accounting personnel and others in corporate accounting.

17.3.4 ACQUISITION

- Evaluate acquisition and research projects and determine whether existing contracts should be transferred to the corporation or revised in some manner. Coordinate with DOD on joint projects.

- Develop procedures and standards for the new acquisition system, including how to retain DOD support for interoperable equipment projects.

- Provide training for acquisition managers and employees in their responsibilities under the new system.

17.3.5 PERSONNEL

- Develop new personnel systems for the corporation: one for employees remaining under some Federal systems and one for new employees. Design a process for a smooth, efficient changeover to a more flexible environment.

- Conduct detailed cost/benefit analysis and consideration of best industry practices of each major human resource system as new personnel systems are developed.

- Provide training for personnel managers and employees in their responsibilities under the new systems.

17.4 IMPLEMENTATION ISSUES

Once the USATS begins operation, the full implementation of the systems and procedures designed during the transition phase would continue. In addition, the corporation would immediately have to undertake other tasks, including the development of a permanent structure for user charges and related billing and collection systems once the USATS has conducted detailed analyses and projections of its costs to produce specific

services for the various types of users. These activities will likely take one year and require the full involvement of the Board of Directors of the Corporation. The Secretary of Transportation, through public notice and comment procedures, will establish the standards by which the ATS Corporation's fees will be reviewed.

ATTACHMENT A

EXECUTIVE OVERSIGHT COMMITTEE MEMBERSHIP

CORPORATION ASSESSMENT TASK FORCE MEMBERSHIP

EXECUTIVE OVERSIGHT COMMITTEE MEMBERSHIP

Frank Kruesi (Chair)	DOT Assistant Secretary for Transportation Policy
Monte Belger	FAA Executive Director for System Operations
Craven H. Crowell	Chairman, Tennessee Valley Authority (represented by Jim Gray)
W. Bowman Cutter	National Economic Council (represented by Michael Deich)
Linda Daschle	Deputy FAA Administrator
Mortimer L. Downey	Deputy Secretary of Transportation
Christopher Edley	Associate Director, Economics and Government Office of Management and Budget
Mark Gerchick	FAA Chief Counsel
David Hinson	FAA Administrator
Stephen Kaplan	DOT General Counsel
Dale McDaniel	FAA Deputy Assistant Administrator for Policy, Planning and International Aviation
Alicia H. Munnell	Assistant Secretary for Economic Policy, U.S. Treasury Department
Emmett Paige, Jr.	Assistant Secretary of Defense for Command, Control, Communications, and Intelligence
Steven Palmer	DOT Assistant Secretary for Governmental Affairs
Stanford E. Parris	Administrator, Saint Lawrence Seaway Development Corporation
Sandra Pianalto	First Vice President and Chief Operating Officer, Federal Reserve Bank of Cleveland
Richard Post	Director, Washington Area Service Center, Office of Personnel Management
Charles A. Richards	Deputy Assistant Secretary, U.S. Department of Labor
Joseph E. Stiglitz	Member, Council of Economic Advisors
Louise Frankel Stoll	DOT Assistant Secretary for Budget and Programs
Robert Stone	Project Director, National Performance Review
Barry Valentine	FAA Assistant Administrator for Policy, Planning and International Aviation

CORPORATION ASSESSMENT AD HOC TASK FORCE MEMBERSHIP

NAME	AFFILIATION
Ed Kelly (Chair)	FAA Deputy Associate Administrator for Airway Facilities
Lt. Col. Sheryl Atkins	Representative, DOD Policy Board on Federal Aviation
Dan Beaudette	FAA Deputy Associate Administrator for Regulation and Certification
Dorothy Berry	FAA Deputy Assistant Administrator for Human Resource Management
W. Robert Billingsley	Manager, Airports Division FAA, Great Lakes Region
Carolyn Blum	FAA Associate Administrator for Contracting and Quality Assurance
R. Douglas Byron	National Association for Government Employees
Larry Covington	FAA Deputy Director, Office of Budget
Jim Craun	DOT Deputy Director, Office of Aviation Analysis
John Hennigan	FAA Deputy Director, Office of Aviation Policy, Plans and Management Analysis
CDR L.N. "Dutch" Homan	Representative, DOD Policy Board on Federal Aviation
David J. Hurley	FAA Director, Office of Air Traffic System Management
Howard E. Johannssen	President, Professional Airway Systems Specialists
Jerry Jones	FAA Office of Chief Counsel
Michael McAnaw	Representative, National Association of Air Traffic Specialists
George McDonald	DOT, Director, Office of Programs and Evaluation
Edward Murphy	Senior Economist, Department of Treasury
Lynne Osmus	FAA Director of Civil Aviation Security Operations
Marc Owen	Chief Counsel, St. Lawrence Seaway Development Corporation
Russell Pittman	Chief, Competition Policy Section, Department of Justice
Jeeyang Rhee	Examiner, Office of Management and Budget
John F. Thornton	Senior Director, Legislative Affairs, National Air Traffic Controllers Association
David Tornquist	Examiner, Office of Management and Budget
Paul Weiss	DOT Deputy Assistant Secretary for Administration
Steve N. Zaidman	FAA Director, Research and Development Service

ATTACHMENT B

SUPPORTING DATA FOR FY1993

COST ALLOCATION UPDATE

ALLOCATION OF ATC COSTS

B.1 INTRODUCTION

(The 1985 study reported on allocated costs in FAA's 1984 budget.) It is important to understand that the 1993 allocation is an update of the 1985 analysis and not an entirely new cost allocation. The basic CAS methodology involved the following steps:

- Identify FAA cost centers;
- Identify FAA user groups;
- Assign each item in the budget to a cost center;
- Determine which items represent avoidable costs by user group, and directly assign such costs to each user group in each cost center;
- Distribute remaining joint costs to user groups based on observed activity shares and/or relative demand elasticities.

Four types of ATC facilities were considered—air route traffic control centers (ARTCCs), terminal radar approach control facilities (TRACONs), other air traffic control towers (ATCTs), and flight service stations (FSSs). In addition, four user groups were identified--air carriers, commuter/air taxi, general aviation, and military. User shares of operating costs in the 1985 study were computed based on statistical cost functions tying site-specific costs with activity measures. Site-specific costs included ATC labor, maintenance labor and leased communications. The facility types and associated activity measures used were as follows:

- ARTCCs - total aircraft handles
- TRACONs - total operations plus seconds plus overs
- Other ATCTs - total operations
- FSSs - pilot briefs, IFR flight plans, VFR flight plans and air contacts

The differences in the direct costs of services among the user groups are based on the results of the statistical functions.

B.2 1993 UPDATE

For the 1993 cost allocation, the 1993 budget items were first assigned to the same major categories used in the prior CAS. The cost functions were then updated to reflect 1993 prices, and 1993 activity levels were used to compute operating cost allocations for 1993. Finally, these cost allocations were scaled to match the budgeted 1993 totals.

Data on ARTCC handles and FSS outputs for 1993 were obtained directly from the FAA Aviation Forecasts. The forecasts on operations, seconds and overs do not adequately break out TRACONs from other ATCTs. Thus, FAA's Air Traffic Activity databases were used which are kept for individual TRACONs and towers. Data on total itinerant plus local operations were obtained directly; the same holds true for TRACON seconds and overs, except for large towers which are assigned to independent TRACONs (e.g., O'Hare and Midway are considered Limited Radar towers assigned to the Chicago TRACON). For these cases, the seconds and overs tabulated at the individual airports are sporadic and not indicative of total activity; therefore, the analysis allocated the parent TRACON's seconds and overs based on the share of total operations at each individual facility.

It is important to recognize that the FAA expenditures considered in the cost functions described above do not represent the entire cost of providing ATC services. In particular, the costs of ATC R&D, F&E, navaid maintenance and non-site overhead could not be assigned to individual sites. These represent well over 50% of total ATC costs. The CAS used a variety of methods to allocate these and the site-specific fixed costs to different user groups. An important assumption made in the CAS was to take observed output levels as fixed when allocating costs. This allowed for sequential allocations. In particular, the avoidable cost concept was used first, where possible, to identify budget items that could be assigned to particular facility types and/or user groups. Inverse elasticity rules were then employed to make the final allocations to specific facility/user pairs. For those costs not assignable to either a single facility type or a single user group, the inverse elasticity method was used directly. For the 1993 update, all costs not associated with operations were allocated based on their shares as shown in the 1985 CAS.

B.3 DISCUSSION OF METHODOLOGY ATTRIBUTES

There are a number of advantages associated with employing the methodology described above. First, it accounts for both inflation and changes in the total cost of ATC services between 1984 and 1993. Second, it partially accounts for changes in the overall level of ATC services and corresponding user shares by employing information

on 1993 activity levels. Third, it has the advantage of only modest computational requirements.

The method also entails a number of limitations. First, it does not account for possible changes in the cost structures for ARTCCs, TRACONs, ATCTs or FSSs. In other words, if a primary air carrier operation at a TRACON cost $20 in 1984, it is assumed to cost the same (after adjusting for inflation) in 1993. Second, it does not account for relative changes in FAA expenditures not related to operations which benefit specific user groups, i.e., if certain FAA programs which primarily benefit GA users were a higher proportion of the budget in 1993 than in the CAS, this would not be reflected in the 1993 cost allocation estimates.

B.4 UNIT AND TOTAL COSTS OF ATC SERVICES BY ACTIVITY

As noted above, the CAS identified three components making up total ATC costs--marginal site costs, fixed site costs and all other costs. The differences in the marginal cost of service among the user groups is based on the statistical cost functions. The markup from marginal site costs to total costs is referred to as the Total Cost Factor. Across all services and user groups, marginal site costs represent about 25% of total ATC costs, so the Total Cost Factor is about 4. The calculation of total costs used the following formulation:

Unit ATC Cost = 1993 Unit Marginal Cost x Total Cost Factor

For ARTCC departures, this should be multiplied by 2. Marginal costs for 1993 were estimated to be:

Estimated Marginal Costs of ATC Services, 1993				
	Air Carrier	AT/ Commuter	GA	Military
ARTCC	$19.16	$19.16	$17.37	$29.30
TRACON	$17.61	$17.61	$4.73	$17.61
ATCT	$10.88	$2.56	$1.98	$6.12
FSS	$5.53	$5.53	$5.53	$5.53

The total cost factor and corresponding unit total costs are shown below:

Estimated Unit Total Costs of ATC Services, 1993				
	Air Carrier	AT/ Commuter	GA	Military
Total Cost Factor:	4.63	3.77	3.12	4.05
ARTCC: IFR Dep Over	 $177.60 $88.80	 $144.29 $72.15	 $108.30 $54.15	 $237.47 $118.73
TRACON: Op, Second or Over	$81.60	$66.29	$14.75	$71.35
ATCT: Operation	$50.42	$9.63	$6.17	$24.81
FSS: Pilot Brief, Flight Plan or Air Contact	$25.62	$20.82	$17.23	$22.41

By multiplying the unit total costs by the 1993 activity levels, we obtain estimates of the total cost of ATC services by activity type:

Estimated Total Cost of ATC Services, 1993 ($mil)					
	Air Carrier	AT/ Commuter	GA	Military	Total
ARTCC	$1,661	$447	$406	$606	$3,120
TRACON	$1,191	$678	$350	$330	$2,549
ATCT	$16	$21	$150	$25	$211
FSS	$5	$15	$357	$9	$385
Total	$2,872	$1,160	$1,262	$969	$6,264

ATTACHMENT C

NAS PROGRAM OFFICE

SUPPORTING DATA FOR

INCREASED INVESTMENT SCENARIO

EFFECTS OF POTENTIAL FUNDING ON CIP BENEFITS
A TECHNICAL NOTE FOR THE CORPORATION ASSESSMENT TASK FORCE
March 7, 1994

Introduction

This paper examines F&E projects in the Capital Investment Plan that could deliver benefits to aviation users and the FAA sooner under a conceptual framework of an ATC corporation that would be freed from the traditional governmental discretionary spending caps. The findings suggest that greater flexibility in investment spending could accelerate roughly $5.3 billion in present value benefits in user efficiency, safety and FAA productivity.

Historically, FAA formulates its investment priorities between ATC infrastructure needs and new technology introduction with funding constraints in mind. In this context, the appropriations often fall short of fully funding the identified investment needs. As an ATC corporation, it is assumed that the hypothetical entity would be free to budget its investment spending as high as it can convince aviation users to support in fees as well as raise needed capital in financial markets. This key assumption is drawn from the discussions and papers on ATC corporation financing concepts presented before the Executive Oversight Committee over the past two months.

Approach

Guidance and criteria stipulated in OMB Circular A-94, "Guidelines and Discount Rates for Benefit-Cost Analysis of Federal Programs", October 1992, was used to evaluate the present value benefits and costs of CIP projects funded under the traditional governmental discretionary spending structure (constrained funding) and the ATC corporation concept (unconstrained funding). A key guideline on discount rate policy is the use of real discount rates to derive present value benefits and costs. A real discount rate in effect translates future year benefits and cost, expressed in constant year purchasing power, into present value terms.

Using the discount rate criteria specified in A-94, a real discount rate of 7 percent was applied to evaluate projects that will generate benefits to users and a 4.5 percent rate, approximating a long-term real Treasury borrowing rate, for projects that produce only governmental savings. According to A-94, the 7 percent discount rate should be applied to Federal investment programs that yield external social benefits and the rate approximates the marginal pretax rate of return on an average investment in the private sector in recent years.

The government funding profile for the out years is based on the F&E level in the President's FY 1995 Budget adjusted for inflation. For the purposes of this analysis, the ATC corporation is assumed to be free to fully fund its investment needs. By comparing the present value benefits and investment costs under the two funding structures, the incremental gains in benefits and costs between the corporation and the governmental structure was determined.

The analysis conducted herein expands on the prior work that was documented in a working paper, "ATC Corporation: Project Benefits, Costs and Schedule Acceleration", dated February 15, 1994. This analysis in effect extends the prior micro-analysis of project benefits and costs into a macro-analysis view of the overall effects of potential aggregate F&E funding levels on CIP benefits.

Analysis

The government and corporation potential F&E funding profiles and likely effects on the CIP benefits are summarized in Table 1. In the aggregate, both funding structures are projected to generate present value benefits of at least $50 billion from 25 projects to users and FAA. More specifically, the corporation's higher funding levels in the near-term are estimated to generate $59.8 billion in present value benefits compared to the $54.5 billion benefit expected with the lower government funding levels. As a rough measure of the marginal return on investment, the corporation concept is estimated to generate incremental present value benefits of $5.3 billion against an incremental present value investment cost of $1.9 billion.

TABLE 1: F&E FUNDING AND BENEFITS

	F&E Funding FY 1996-2003 (billions of then year dollars)							Benefits for Top 25 Projects (billions of present value dollars)			
	FY 96	97	98	99	2000+	Total	PV	User Efficiency	User Safety	FAA Savings	Total
Corporate	$3.6	$3.8	$3.6	$3.0	$6.6	$20.6	$14.9	$50.1	$2.6	$7.1	$59.8
Government	2.3	2.3	2.4	2.5	9.7	19.1	13.0	$45.9	$2.1	$6.6	$54.5
Difference	1.3	1.5	1.2	0.5	(3.1)	1.5	1.9	$4.2	$0.6	$0.5	$5.3

PV = Present Value

It should be recognized that the funding levels shown above cover identified F&E requirements for established CIP projects and new mission needs for implementing new technologies and ATC infrastructure replenishments and upgrades through FY 2003. The bottoms-up funding levels shown, for example, do not yet account for the possibility of implementing future viable R,E&D projects, potential implementation of the Future Air Navigation System (FANS) concept, and expanded satellite-based applications in communication, surveillance, navigation and landing.

Looking broadly ahead, it is possible that incorporating these promising initiatives into the F&E requirements, coupled with the continued need to upgrade the infrastructure to meet forecasted traffic growth, could necessitate an annual funding need at a $3.0 billion level into the next decade. Under the presupposition that an ATC corporation is likely to have greater financial latitude to fund economically viable projects than a governmental entity that is subject to the budgetary constraints of the Budget Enforcement Act (BEA) caps, a top-level F&E funding projection for the ATC corporation is shown in Figure 1.

FIGURE 1: PROJECTED ATC CORPORATION F&E NEEDS FY 1996-2003

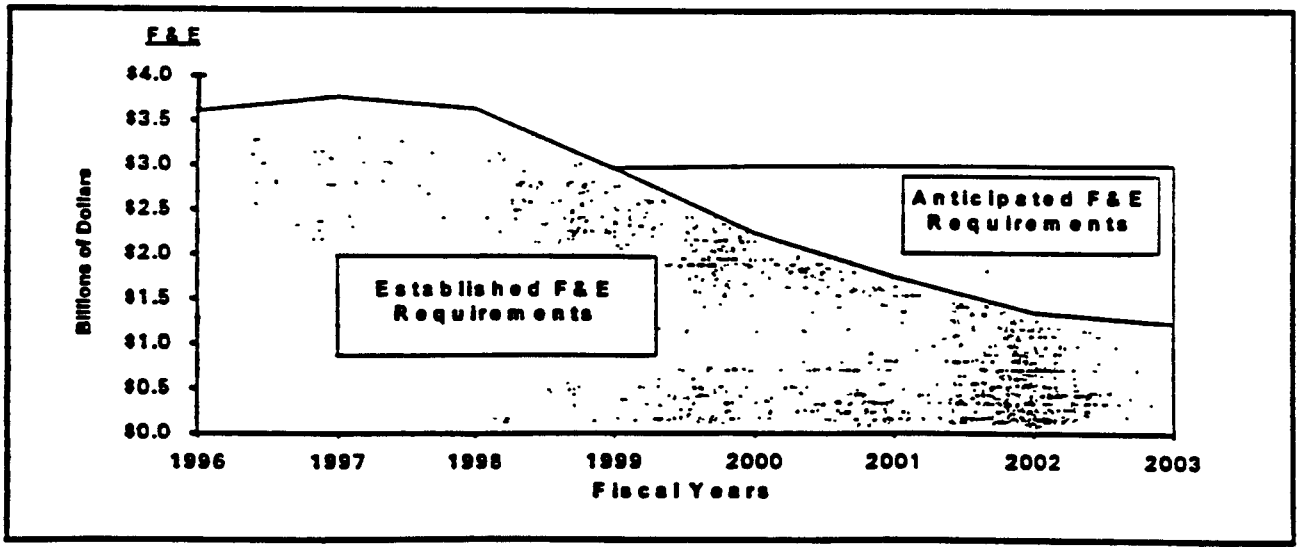
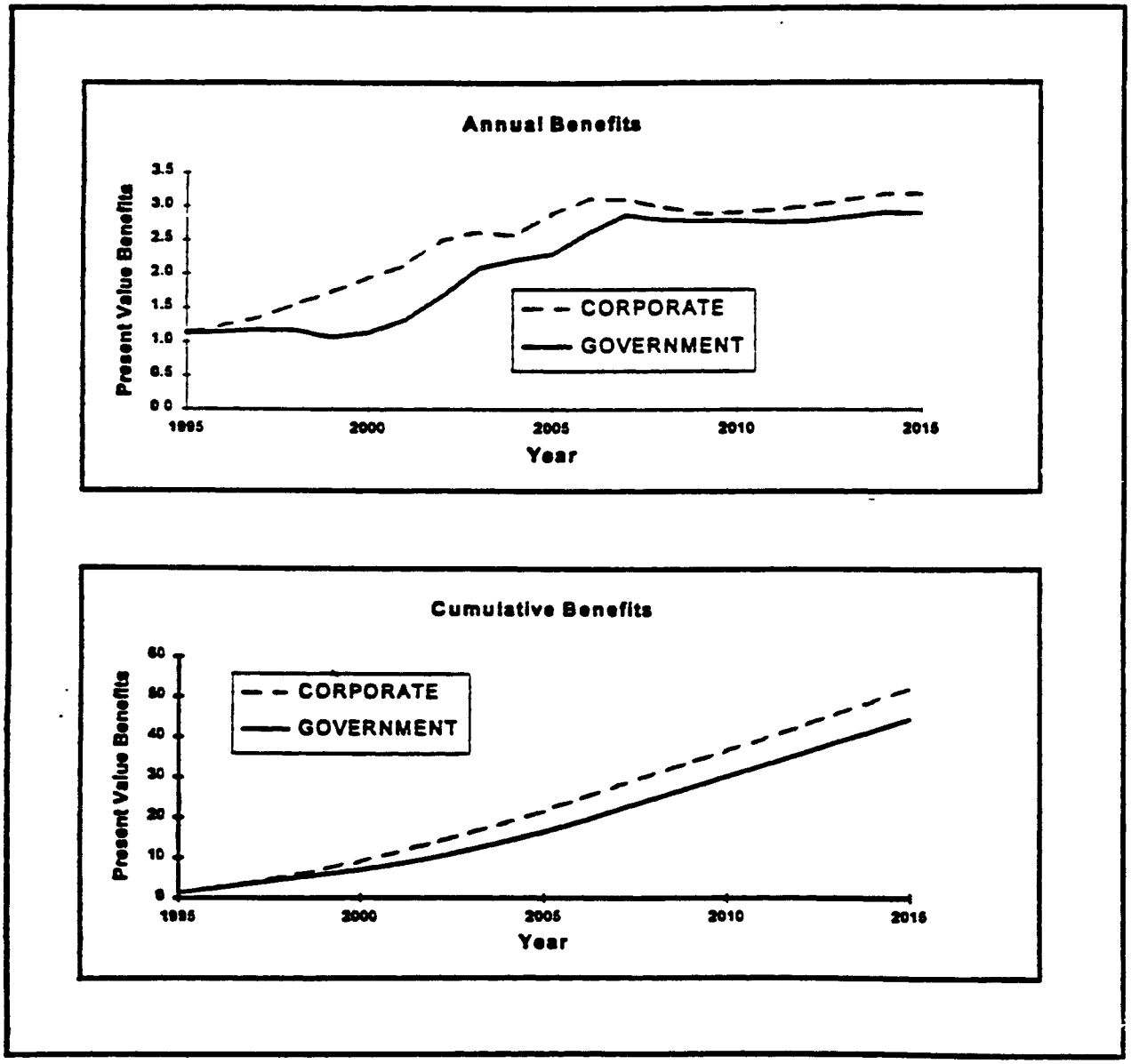


Figure 2 contains two charts that illustrate the projected annual and cumulative benefits for the top 25 CIP projects attributable to the corporation and government funding levels shown in Table 1. The area between the two curves in each chart represents the marginal benefits between the two funding structures.

From the standpoint of the incremental benefits of $5.3 billion derived from established F&E requirements, 81.5 percent accrue to users in the form of increased operational efficiency and another 11 percent in safety improvements plus a 7.5 percent gain in FAA savings. Overall, 92.5 percent of the marginal gains in benefits associated with the corporation funding levels are estimated to accrue to users.

FIGURE 2: PROJECTED CIP BENEFITS
(billions of present value dollars)



Users, consisting of the airlines, general aviation and passengers, are expected to realize efficiency benefits from reduced delays, expanded preferred routes and altitudes and avionics cost savings. Projects such as Global Positioning System, Advanced Automation System, Oceanic Automation System and weather projects are examples of major contributors to the user efficiency benefits. Overall, it is estimated that implementing these capabilities sooner in the absence of funding constraints could provide present value fuel savings of roughly $750 million to

users. Airport surface detection initiatives, approach lighting systems and weather projects are examples of major contributors to improved safety. The Remote Maintenance and Monitoring System, Metroplex facilities and GPS are projects that are expected to produce operating and maintenance efficiencies to the FAA.

Conclusion

There are substantial benefits to be derived from the F&E investments associated with modernizing the ATC system. This analysis shows that there are further economic returns to users and the FAA from an accelerated level of F&E funding assumed under a conceptual corporation framework. Of the estimated present value benefits of $5.3 billion, users will realize over 92 percent of the benefits from safety improvements and increased operational efficiencies. The additional F&E funding between FY 1996-2003 to support the accelerated benefits is estimated to be $1.5 billion.

Table 2:
FAA ATC Corporation Project Benefits, Costs & Schedule Acceleration

			Incremental Analysis FAA ATC Corporation vs Traditional Government Structure			
			Years	*(Millions of Present Value $)*		
	CIP	PROJECT NAME	SCHEDULE GAIN	BENEFITS	BENEFITS w/o PTS	LIFE CYCLE COSTS
1	63-21	INTEGRATED TERMINAL WEATHER SYSTEM (ITWS)	4	$472	$147	$33
2	61-23	OCEANIC AUTOMATION PROGRAM	4	421	250	31
3	64-05	AUGMENTATIONS FOR GPS	4	415	273	110
4	34-09	ESTABLISH VISUAL NAVAIDS FOR NEW QUALIFIERS	4	196	129	34
	3X-X2	MNS 257: ASDE-X-PENDING ARC APPROVAL	4	185	185	29
6	26-01	REMOTE MAINTENANCE MONITORING SYSTEM	4	88	88	39
7	34-08	RUNWAY VISUAL RANGE (RVR) ESTABLISHMENT	4	38	12	15
8	63-22	AVIATION WEATHER PRODUCTS GENERATOR (AWPG)	3	317	144	51
9	32-24	CHICAGO METROPLEX	3	51	24	14
10	62-23	AIRPORT MOVEMENT AREA SAFETY SYSTEM (AMASS)	3	11	11	7
11	43-02	WEATHER AND RADAR PROCESSOR (WARP)	2	282	97	13
12	56-61	FAA CORPORATE INFORMATION SYSTEMS ARCHITECTURE	2	128	128	31

NOTES:

1) INCREMENTAL F&E REQMTS represents the additional funding during this period which arise from accelerating F&E requirements from post 2000 years and/or higher investment needs in the 1996-2000 time frame.

2) PTS = Passenger Time Savings.

Table 2:
FAA ATC Corporation Project Benefits, Costs & Schedule Acceleration

			Incremental Analysis FAA ATC Corporation vs Traditional Government Structure			
			Years	*(Millions of Present Value $)*		
	CIP	PROJECT NAME	SCHEDULE GAIN	BENEFITS	BENEFITS w/o PTS	LIFE CYCLE COSTS
13	63-05	AERONAUTICAL DATA LINK COMM & APPLICATIONS	2	$123	$90	$58
14	44-33	ALSIP CONTINUATION	2	34	34	13
15	32-36	NORTHERN CALIFORNIA METROPLEX	2	34	18	23
6	56-51	AVIATION SAFETY ANALYSIS SYSTEM (ASAS)	2	21	21	7
	32-16	ESTAB/EXPD DIG BRIGHT RADAR INDICATOR TOWER EQ	2	12	5	9
18	43-22	FSAS OPERATIONAL & SUPPPORTABILITY IMPLEMEN. SYS.	2	10	10	4
19	21-12	ADVANCED AUTOMATION SYSTEM (AAS)	1	1,928	581	81
20	21-06	TRAFFIC MANAGEMENT SYSTEM (TMS)	1	239	141	5
21	32-22	DALLAS/FORT WORTH METROPLEX	1	95	28	13
22	32-27	DOD/FAA ATC FACILITY TRANSFER/MODERNIZATION	1	51	51	22
23	62-20	TERMINAL ATC AUTOMATION (TATCA)	1	42	15	4
24	56-11	AIRCRAFT FLEET MODERNIZATION	1	36	36	29
25	32-34	POTOMAC METROPLEX	1	27	15	16
	TOTALS			$5,260	$2,535	$691