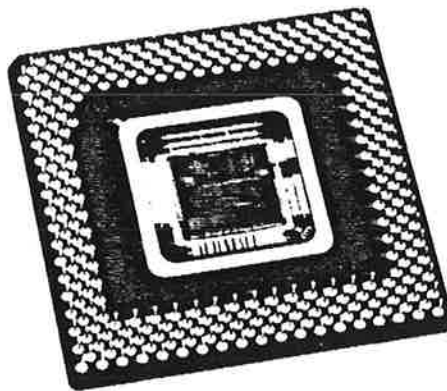


AIR TRAFFIC CONTROL CORPORATION STUDY

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 Instead, it relies on outdated technology from the 1940's, 1950's and 1960's at many of its facilities.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

TABLE OF CONTENTS

EXECUTIVE SUMMARY

Introduction	1
The Need for Change	2
Findings	4
The Recommended Model for U.S. Air Traffic Control	6
Financial Performance	8
Transition to USATS	9

1. INTRODUCTION

1.1 Background	11
1.2 Study Process	12
1.3 Report Organization	14

2. THE ATC SYSTEM AND THE NEED FOR CHANGE

2.1 The U.S. ATC System	15
2.2 The Need for Change	20

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.

3. COMPELLING REASONS FOR RESTRUCTURING ATC AS A GOVERNMENT CORPORATION

3.1 Introduction 25
 3.2 Economic and Technological Factors 25
 3.3 What Makes ATC Unique 27
 3.4 Problems as a Government Agency 29
 3.5 Evaluation of Internal Reform of FAA. 32
 3.6 Development of a Government Corporation 37
 3.7 Overview of a Government Corporation 39
 3.8 International Precedents 40
 3.9 Financial Benefits of Change 42
 3.10 Support for Change 43
 3.11 Conclusion. 43

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

4.1 Introduction 45
 4.2 Recommendation: An Air Traffic Services Corporation and an FAA Government Agency 46
 4.3 Evaluation of the Recommended Alternative 51
 4.4 Other Models Considered by the Task Force 52
 4.5 Conclusions 59

5. THE CORPORATION AND AVIATION SAFETY

5.1 Introduction 61
 5.2 Existing Safety Regulatory Process 62
 5.3 Safety Regulation and Oversight of the USATS 66
 5.4 Safety, Cost and System Capacity Issues 68
 5.5 Implementation Issues: Assuring Safety in Air Traffic Control. 71
 5.6 Safety Implications of User Fees 72
 5.7 Conclusions 73

6. NATIONAL SECURITY

6.1 Introduction 75
 6.2 Supporting the National Defense Mission. 76
 6.3 DOD Legal Access to Airspace. 76
 6.4 Joint Acquisition System 77
 6.5 Costs of the Joint Civil-Military System 77

6.6	Operations and Support	78
6.7	International Experience	79
7.	OUTREACH	
7.1	Introduction	81
7.2	Executive Oversight Committee Outreach Activities.	81
7.3	Corporation Assessment Task Force Outreach Activities	82
7.4	The Personnel Working Group Outreach Activities	82
7.5	The Governance Working Group Outreach Activities	83
7.6	The Budget and Finance Working Group Outreach Activities.	84
7.7	The Acquisition Working Group Outreach Activities	86
7.8	Summary.	87
8.	GOVERNANCE	
8.1	Introduction	89
8.2	Governance Structure.	90
8.3	Other Issues	96
8.4	Transition Issues.	96
9.	ACQUISITION	
9.1	Introduction	99
9.2	Recommended Best Acquisition Practices.	102
9.3	Legislative Exemptions	105
9.4	Transition Issues.	106
10.	PERSONNEL	
10.1	Introduction	109
10.2	Key Recommendations	111
10.3	Other Recommendations	116
10.4	Transition Issues.	117
10.5	Summary.	119
11.	FINANCE AND BUDGET	
11.1	Introduction	121
11.2	Recommendations.	122
11.3	Key Policy Issues	126
11.4	Summary.	128

12. FINANCIAL CONSIDERATIONS

12.1	Introduction	129
12.2	Financial Structure of the Existing FAA	129
12.3	Overview of the Financial Plan.	133
12.4	Summary of Financial Performance	135

13. INTERNATIONAL ATC ORGANIZATION PRECEDENTS

13.1	Introduction	137
13.2	The Problems That Have Driven Change	137
13.3	National Case Studies.	141
13.4	Conclusions	146

14. U.S. PRECEDENTS FOR A GOVERNMENT CORPORATION

14.1	Introduction	147
14.2	Definition of a Government Corporation	148
14.3	Benefits/Risks of a Government Corporation.	149
14.4	Ownership of Government Corporations	151
14.5	Governance	152
14.6	External Oversight	152
14.7	Methods of Funding	153
14.8	Personnel.	153
14.9	Procurement.	154
14.10	Summary.	154

15. REVIEW OF PAST STUDIES

15.1	Introduction	155
15.2	Report of the National Performance	156
15.3	National Commission to Ensure a Strong Competitive Airline Industry Report	157
15.4	<i>How to Spin Off Air Traffic Control--The Reason Foundation</i>	158
15.5	<i>A Proposal for a Restructured Independent Federal Aviation Administration,</i> <i>The FAA Conference of the Federal Managers Association</i>	159
15.6	<i>A Review of Federal Aviation Administration Financial and Acquisitions</i> <i>Systems, Phaneuf Associates Incorporated (PAI)</i>	160
15.7	<i>Winds of Change: Domestic Air Transport Since Deregulation, Transportation</i> <i>Research Board</i>	161

15.8	<i>Safe Skies for Tomorrow: Aviation Safety in a Competitive Environment</i> , U.S. Congress, Office of Technology Assessment	161
15.9	<i>Report on Independent ATC Corporation</i> , Department of Transportation Working Group	162
15.10	<i>Aviation Safety Commission: Final Report and Recommendations</i> , Aviation Safety Commission	163
15.11	<i>Privatization of Federal Aviation Administration Functions</i> , Kenneth M. Mead, U.S. General Accounting Office	164
15.12	<i>The Proposed National Aviation Authority: A First Review</i> , Apogee Research, Inc.	164
15.13	<i>The Air Traffic Control System: Management by a Government Corporation</i> , A Study for the Air Transport Association of America, National Academy of Public Administration	165
15.14	<i>Federal Corporation Approach to the Management and Funding of the Air Traffic Control System</i> , Air Transport Association	166
15.15	Conclusion	167
16.	INTERNATIONAL OBLIGATIONS AND THE U.S. AIR TRAFFIC SERVICES CORPORATION	
16.1	Introduction	169
16.2	The Chicago Convention and Related Agreements: National Obligations to Provide Air Traffic Services	170
16.3	The Role of Specialized Bodies, Annexes and Designated Authorities	171
16.4	The Role of Bilateral Agreements	171
16.5	International Guidelines on ATC User Fees.	172
16.6	Implications for the Existing FAA International Program and Policy Activity.	175
16.7	Summary.	176
17.	TRANSITION TO THE CORPORATION	
17.1	Introduction	177
17.2	Preliminary Issues and Actions	178
17.3	Transition Issues and Actions	178
17.4	Implementation Issues	180

ATTACHMENTS

Attachment A: Executive Oversight Committee Membership A-1
 Corporation Assessment Task Force Membership A-2

Attachment B: Supporting Data for FY1993 Cost Allocation Update. B-1

Attachment C: NAS Program Office--Supporting Data for Increased Investment
 Scenario. C-1

FIGURES

Figure 2-1 Services Provided by FAA Facilities by User Group 19
 Figure 2-2 General Aviation Use of IFR Flight Plans 20

Figure 3-1 Changes in Implementation Milestones and Unit Costs for 12 Major
 FAA Projects 30

Figure 4-1 Schematic of Models. 46
 Figure 4-2 Structure of USATS Corporation 47
 Figure 4-3 Summary Evaluation of Models 60

Figure 11-1 Business-Like Processes. 125

Figure 12-1 FAA Sources and Uses of Funds 131
 Figure 12-2 Estimated Total Cost of ATC Services by User Group 132

Figure 13-1 Organizational Structure of Foreign Corporatized ATC
 Organizations 141

Figure 14-1 Comparison of Government Corporation Precedents and the
 USATS 148
 Figure 14-2 Summary Profile of Government Corporations 150

Figure 15-1 Problem Areas Covered in Prior Studies 156
 Figure 15-2 Proposed Types of Organizations in Prior Studies 168

EXECUTIVE SUMMARY

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;

¹Vice 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

²Air 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

³National 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 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.

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.

⁴The 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 programs⁵.

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 implications 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.

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.

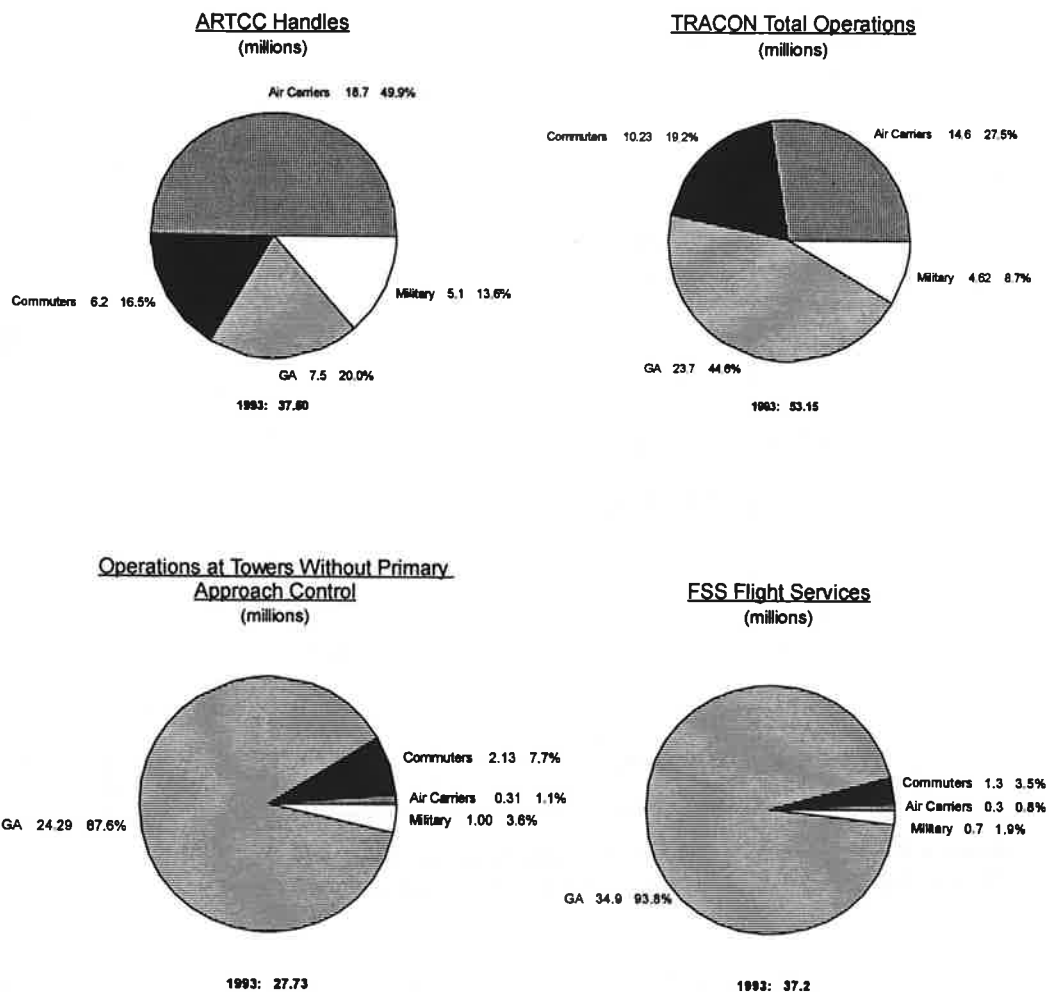
2.1.1 THE USE OF FAA ATC SERVICES

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	<u>18,451</u>	<u>3,171,634</u>	<u>14,951</u>	<u>81.0%</u>	<u>1,485,067</u>	<u>46.8%</u>
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	<u>7,836</u>	<u>409,872</u>	<u>93</u>	<u>1.2%</u>	<u>4,585</u>	<u>1.1%</u>
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:

⁶FAA 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

⁷Secondary 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

⁸Estimates 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.

⁹The 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.

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 \$1 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

¹⁰Airport Magazine January/February 1994, p. 67

¹¹Airport 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.

¹²Kenneth 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.

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

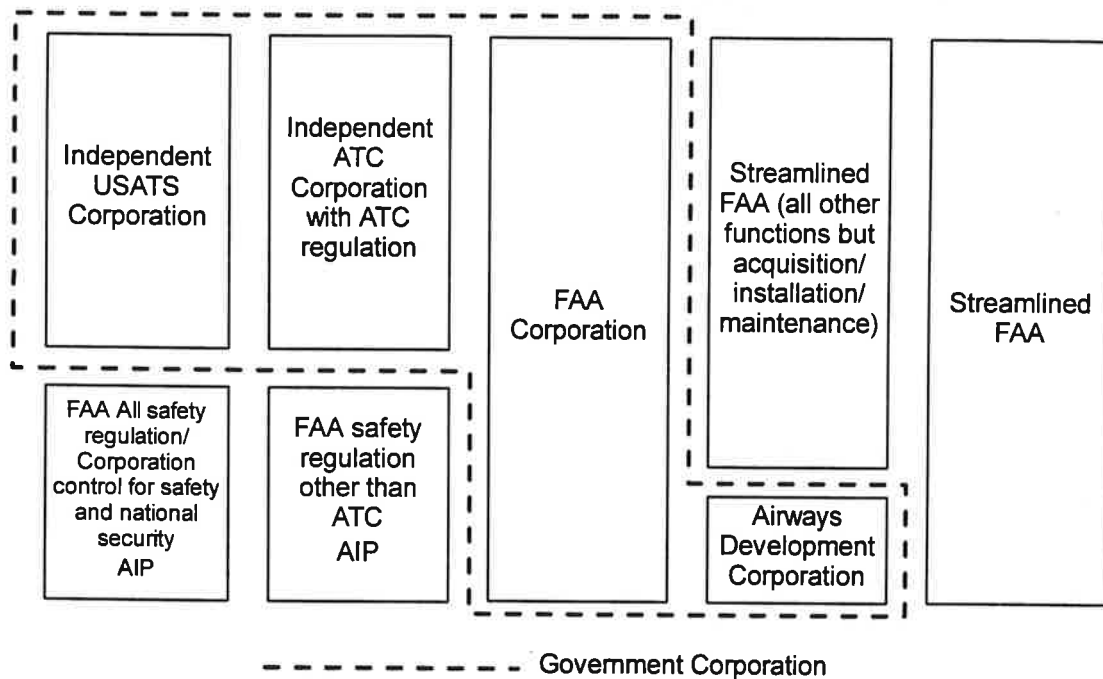
4.1 INTRODUCTION

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

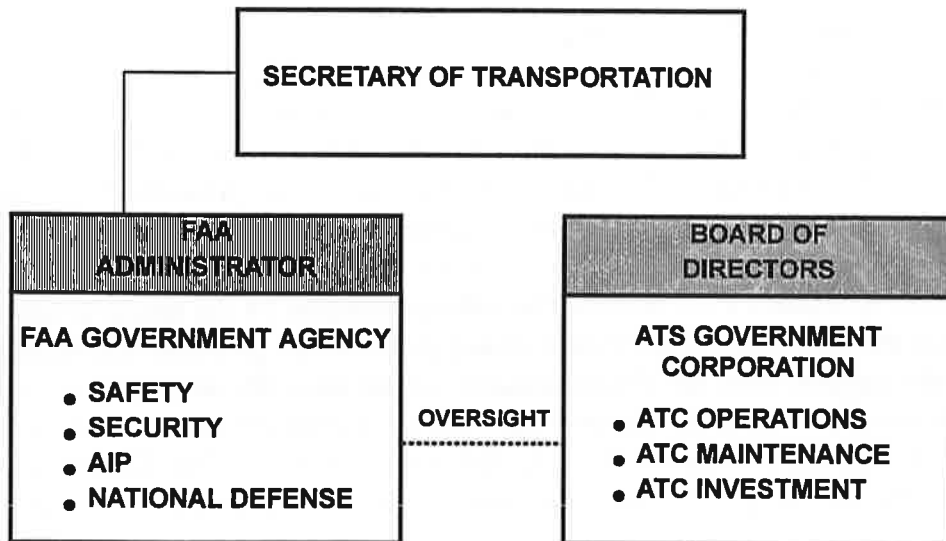
In conducting its work, the EOC found the ATC system to be more like private sector entities that FAA regulates rather than like the rest of FAA, of which it is a part. The EOC recommends that an independent ATS Corporation be established that would be responsible for controlling air traffic, maintaining 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

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

¹³For 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 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

¹⁴Current 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.