

GAO

Testimony

Before the Subcommittee on Transportation  
Committee on Appropriations  
U.S. House of Representatives

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**AIR TRAFFIC CONTROL**

**Analysis of Proposal to Create  
a Government Corporation**

Statement of Kenneth M. Mead,  
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Resources, Community, and Economic  
Development Division



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Mr. Chairman and Members of the Subcommittee:

Thank you for the opportunity to provide our views on proposals to reform the Federal Aviation Administration's (FAA) air traffic control (ATC) system. The debate about reform is fueled, in part, by the slow pace of FAA's program to modernize the system. Over the past decade, major projects such as the Advanced Automation System--which was totally revamped last year--have experienced problems with costs, schedules, and performance. FAA and others have blamed these problems on the need to comply with federal procurement and budget rules. However, our work over the past decade has shown the primary causes to be factors such as underestimating the technical complexity of developing the system and inadequate oversight by management.

This Subcommittee and others are debating the merits of various options, such as reforming the agency under its current structure, creating an independent agency, and establishing a public or private ATC corporation. The first two options are, in general, directed more at fixing specific ills identified by FAA and others and would not involve the complexities of finance, safety, and governance associated with proposals to separate ATC operations from the remaining FAA. Under these proposals, the agency's operations and safety functions would not be separated, but FAA would presumably be exempted from some federal procurement, personnel, and budgetary rules. Specific details on which laws and regulations the agency would be exempted from and how these exemptions would benefit FAA's operations and ATC modernization program are not available. Similarly, it is unclear how a private ATC system would operate. Without such details, we are not able to assess the merits of these proposals.

We can, however, comment on the administration's detailed proposal--complete with financial projections under differing assumptions--to create a wholly-owned, not-for-profit, self-sufficient government corporation to operate, manage, and modernize the ATC system.<sup>1</sup> Under this proposal, FAA would continue to provide safety oversight. We can also provide an international perspective based on our survey of several countries' actions to restructure their ATC systems. (See appendix for a comparison of ATC organizations in the United States and foreign countries.) To assist the Congress in its deliberations, we will discuss critical issues relating to the proposed corporation's financial projections, oversight of safety, and governance.

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<sup>1</sup>According to FAA, approximately 40,000 of its current employees would go to the corporation and the remaining employees would stay with the agency.

In summary, we found the following:

- The corporation can be financially viable if the proposal's budgetary, cost, and revenue assumptions are realized. The most important of these assumptions include: exemption from spending caps contained in the Budget Enforcement Act; achievement of efficiencies in its baseline projections that would allow the corporation to hold down operating expenditures, and exclusion of certain pension and post retirement health care costs.<sup>2</sup> The proposal's assumptions about revenue appear reasonable but will be sensitive to such factors as growth in the economy and the extent of business travel in the coming years.
  
- With regard to safety oversight, FAA will face new challenges in establishing an effective safety oversight function. We are concerned about how the proposed division of safety decisionmaking responsibilities will work in practice and how regulatory disputes will be resolved between the two entities in a timely manner. Additionally, the administration has stated that it intends to provide oversight of the new corporation much the same way it oversees aircraft manufacturers and airlines. Our work has identified a number of deficiencies, particularly in FAA's capacity to proactively identify safety problems and attract staff skilled in advanced technologies. Also, FAA may not be exempt from federal personnel rules and potentially would have to compete with the corporation to attract skilled individuals.
  
- A corporation--created and charged to operate like a business may have little incentive to provide equipment and services to users of the system whose financial contributions to the system are proportionately less than the value they receive. Included among these users are general aviation and small airports. An important issue facing the Congress in establishing the corporation will be how it accommodates the needs of such users.

We would now like to discuss these points in greater detail.

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<sup>2</sup>The proposal assumes that, unless exempted from the Budget Enforcement Act, the corporation could not significantly increase its expenditures. However, if the ATC system remains within FAA, the agency could presumably achieve approximately the same expenditure levels, exclusive of any revenues derived from borrowing, if it were exempted from the act.

FINANCIAL VIABILITY DEPENDS ON REALIZATION OF  
BUDGETARY, COST, AND REVENUE ASSUMPTIONS

In May 1994, we testified on the administration's proposal to establish the United States Air Traffic Services (USATS) corporation to operate, manage, and modernize the ATC system.<sup>3</sup> Since May, the administration has not substantively changed its proposal but has updated the financial projections. The latest financial update, dated February 7, 1995, provides detailed financial analyses describing how the corporation can be viable without raising user fees, imposing fees on general aviation or public users, or receiving federal appropriations.

The proposal presents two scenarios--the "baseline," in which current spending patterns would generally continue, and the "modified investment," in which spending for modernization programs and operations would increase. The corporation would have three main sources of funds: user fees, payments from the Airport and Airway Trust Fund for prior ATC commitments, and for the modified investment scenario, debt financing. The corporation's revenues from user fees are identical under both the baseline and the modified investment scenario and are projected to increase from about \$5.1 billion in fiscal year 1997 to about \$8.8 billion in fiscal year 2006. During this same period, total outlays would grow from about \$5.7 billion to \$6.2 billion under the baseline scenario and from \$6 billion to \$9 billion under the modified investment scenario.

Financial Projection Assumes Exemption  
From Spending Caps

The USATS proposal assumes that the corporation would be exempted from the budget controls of the Budget Enforcement Act. According to the proposal, exemption from the act would allow the corporation to spend user revenue, payments from the Airport and Airway Trust Fund for prior commitments for modernization projects, and funds borrowed from the private sector without competing with other programs under the discretionary outlay caps. If the corporation is not granted this exemption and is allowed to spend revenues from the sources indicated above, its expenditures would have to compete with all other discretionary spending programs under the discretionary caps.<sup>4</sup>

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<sup>3</sup>Air Traffic Control: Observation on Proposed Corporation  
(GAO/T-RCED-94-210, May 12, 1994).

<sup>4</sup>Under the baseline scenario, USATS would accumulate over \$18 billion in cash by the year 2006. The scenario assumes that the corporation's expenditures could not be increased significantly unless the Congress exempted USATS from the Budget Enforcement Act. However, if the ATC system remains within FAA, the agency

Under the USATS proposal, the corporation would receive \$3.5 billion (as a capital contribution) from the Trust Fund as the cash is needed to pay the bills for prior commitments for modernization projects. These funds would flow to the corporation during the first 7 years, starting at \$1.6 billion in fiscal year 1997 and decreasing to \$77 million in 2003, the last year of federal contributions. The rationale for these payments is that users have paid for these investments through a set-aside in the Trust Fund. Under present budgetary treatment, when FAA enters into a contract, the amount of the contractual obligation is set aside in the Trust Fund for future payments. Under the corporation proposal, USATS would operate like a private sector corporation and would no longer set aside funds for future ATC commitments.

As for debt financing, it is assumed that USATS would borrow from private markets to accelerate its investment in modernization. Debt financing is an accepted method of funding capital investments in the private sector and, according to our survey, other countries' ATC corporations.<sup>5</sup> The corporation would borrow a total of \$5.2 billion between fiscal years 1997 and 2006, beginning with \$55 million in fiscal year 1997. Again, if USATS is not exempted from the Budget Enforcement Act, outlays from debt financing would need to compete with other discretionary programs under the discretionary spending caps.

While we recognize that the Congress may wish to grant the corporation borrowing authority and, specifically, the authority to borrow from private markets, borrowing through the Treasury has certain advantages, including a lower cost of borrowing. This lower cost results from lower interest rates than those available in the private market and the elimination of expenses, such as the transaction fees for underwriters (brokers), attorneys, and accountants paid when borrowing from private market. On the other hand, borrowing from the Treasury will displace some private investment.

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could presumably achieve approximately the same expenditures, exclusive of revenue from borrowing, if FAA were exempted from the act. Although the proposal assumes, under the current system, that the Congress will withhold revenues and limit spending, the Congress, in recent years, has annually appropriated all revenues from user fees and provided additional support from the general fund for ATC operations.

<sup>5</sup>We surveyed officials in other countries that have restructured or plan to restructure their ATC organizations. These countries include New Zealand, Australia, Germany, Switzerland, the United Kingdom, and Canada. Other countries have restructured their ATC systems; however, we focused on these countries because their ATC systems handle at least 1 million aircraft movements annually.

Another issue with respect to USATS' debt arises from the perception by the bond market that the debt, even if legislation specifically stated otherwise, has the full faith and credit of the United States government. Private markets factor the possibility of federal backing into lending decisions. Given the importance of air traffic control to the transportation system, the nation's economy, and the national defense, it might be assumed that the federal government would accept financial liability if the corporation is unable to meet its obligations.

#### Costs Projections Merit Scrutiny

Our analysis found that USATS' self-sufficiency is linked to the corporation's ability to hold down expenses through operating efficiencies and the exclusion of the costs to fully fund future federal pensions and the related post-retirement health care benefits.<sup>6</sup>

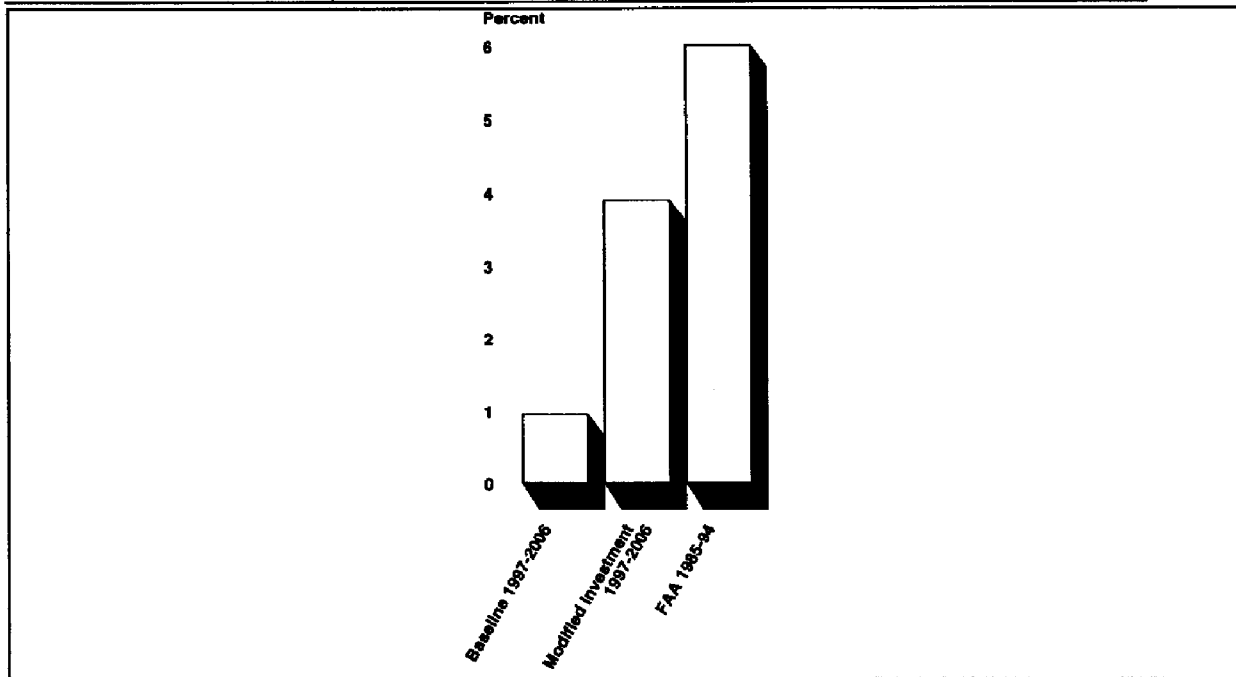
#### Cost Projections Assume Efficiencies

Although there is some variation in projected operating expenditures for the years covered, the baseline scenario shows a 1-percent average annual increase in total operating expenses through fiscal year 2006. (See fig. 1)

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<sup>6</sup>We define self-sufficiency to mean that the corporation would receive no federal subsidy after receipt of prior commitments from the Airport and Airway Trust Fund.

Figure 1: Average Annual Percentage Increase in Total Operating Costs for ATC Corporation Compared With FAA's Historic Costs



Source: GAO's calculations based on FAA's data and the Air Traffic Corporation Study Financial Update, February 7, 1995.

The projections for the modified investment show a roughly 4-percent average annual increase in total operating expenses over that period. The growth projected under either scenario is substantially lower than the growth that occurred in FAA's operations expenditures (ATC and non-ATC) in fiscal years 1985-94, when these expenditures grew at an average annual rate of 6 percent.

Average annual growth levels of 1 or 4 percent before adjusting for inflation imply that the corporation can achieve operating efficiencies to hold down expenses. We calculated the operating costs for the baseline scenario in inflation-adjusted dollars and found that buying power declines by 16 percent over 10 years.<sup>7</sup> This decrease occurs even though the revenue projections assume increases in the demand for ATC services. We are unable to assess whether the cost efficiencies could reasonably be achieved because the financial results do not provide supporting documentation.<sup>8</sup>

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<sup>7</sup>We used the 3.1 percent inflation forecast of DRI/McGraw Hill, a leading economic forecasting firm.

<sup>8</sup>In both scenarios, projected costs were not developed from detailed analyses of the employees to be transferred or other operating costs. Rather, the President's fiscal year 1996 budget was used as a baseline to develop the projections.



In any case, such efficiencies will likely be achieved only if USATS can limit growth in employees' total compensation--which accounts for about three-fourths of projected operating costs for fiscal year 1997. Our survey of foreign countries' experiences found that New Zealand and Australia were able to reduce operating expenses by decreasing staff levels. Although increases in controllers' pay led Germany to increase its operating expenses in 1994, this country now intends to reduce costs by cutting staff 15 percent by the year 2000. Officials of the International Air Transport Association cited concern about a few cases of sharp increases in user fees due to higher costs for such expenses as personnel benefits and pension costs. These officials noted that in the 2 years following Spain's ATC reorganization, costs increased by 33 percent and user fees increased correspondingly.

#### Certain Federal Pension and Post-Retirement Benefit Costs Are Omitted From Projections

Under current federal budgeting practices, the full cost of the Civil Service Retirement System (CSRS) is not included in the accounts of the individual agencies. The employee and the agency pay a fixed percentage of the employee's salary toward future pension benefits. However, this combined percentage does not fully fund the cost of the employee's pension. This practice creates a deficiency in the CSRS trust fund--the unfunded actuarial liability--that will eventually be paid by the general fund of the U.S. Treasury as employees receive retirement payments.

The financial projections for USATS assume that (1) current USATS employees would continue to be covered by current federal retirement systems, (2) the corporation would fund employees' retirement at the same rate now paid by FAA and other federal agencies, and (3) the federal government would be liable for the accumulated deficiencies up to the time when USATS is established. The proposal also assumes that future deficiencies would be borne by the federal government and paid from the general fund. Therefore, the full cost would not be funded by USATS.

For the estimated 40,000 employees that may be transferred to a separate corporation, the additional amount needed to fully fund CSRS pensions would be approximately \$205 million in fiscal year 1997.<sup>9</sup> Employees' and the agency's current contributions to the Civil Service Retirement and Disability Fund would have to be increased substantially to cover the full costs of pension benefits. For example, the present combined contribution by employees and the agency for CSRS air traffic controllers is 14 percent of salary. The Office of Personnel Management has calculated that this contribution should be 32.5 percent to fully fund pension benefits.

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<sup>9</sup>This assumes that the present employee group, with normal attrition, would remain under CSRS through retirement.

Similar unreported costs exist within all federal government agencies, as well as in FAA. However, the percentages and amounts will vary according to the different employee groups and plans.

Under current federal budgeting practices, the cost of post-retirement health benefits is not charged to federal agencies during the period of the beneficiaries' employment. No fund has been established to accumulate assets to pay these future benefits. These costs relate to employees covered by both the CSRS and the newer Federal Employee Retirement System. Post-retirement health benefits, like the deficiency in pension benefits, are eventually paid by the general fund of the Treasury. To fully reflect USATS' costs, an additional amount of approximately \$68 million would be needed in fiscal year 1997 for USATS' estimated 40,000 employees. In subsequent years, this amount would increase annually, if necessary, to cover inflation in the cost of health care.

#### User Fees Are Sensitive to Several Factors

Since the corporation would derive almost all of its revenues from user fees, projections of the future growth in passenger revenues growth become critical to self-sufficiency. Both the baseline and modified investment scenarios assume identical revenue streams. The proposal projects a 6-percent average annual increase in revenues on the basis of FAA's projected changes in aviation activity and prices. FAA's forecast of growth in passenger demand, a key component used to project revenues, is consistent with demand forecasts by others, including Boeing and McDonnell Douglas. Furthermore, the revenue forecasts in the USATS proposal are consistent with underlying assumptions that the nation's economy (measured by gross domestic product) will meet or exceed a "mid-range" rate of expected growth.<sup>10</sup> However, because the level of aviation activity is influenced by the general level of economic activity, USATS would expect lower revenues if the economy grows at a slower rate.

Using FAA's forecasts of airline fares, we estimated how USATS' revenues will vary with different levels of economic activity.<sup>11</sup> Our results were consistent with USATS revenue projections when we used

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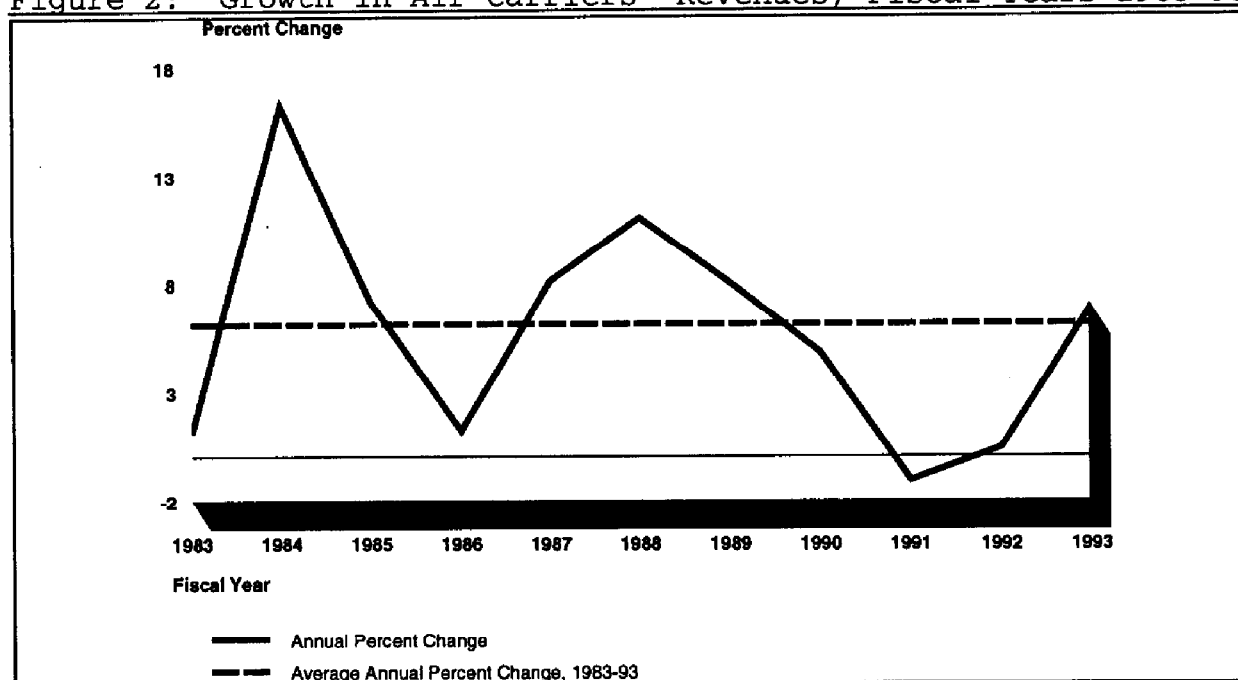
<sup>10</sup>The "mid-range" gross domestic product growth averages 2.3 percent annually after adjusting for inflation.

<sup>11</sup>We also used FAA's estimates of the elasticities of gross domestic product and yield (a measure of airline fares) for commercial airline traffic. Although trust fund revenues are derived from several taxes and fees, by far the largest component is the 10-percent tax on domestic passengers' tickets, which accounts for approximately 88 percent of revenues. As a result, we focused our analysis on forecasts of revenues from commercial passenger revenue.

the "mid-range" growth rate for gross domestic product forecasted by DRI/McGraw-Hill. However, when we used DRI/McGraw-Hill's "pessimistic" scenario--to which the firm attaches a likelihood of about 25 percent--we found average annual revenue growth to be 1 percentage point lower than the USATS' projection of average annual revenue increase.<sup>12</sup> The lower revenue growth that might be expected under the "pessimistic" scenario would average about \$250 million annually over the period 1997-2006 after adjusting for the expected effects of inflation.

While the 6 percent growth rate for USATS' revenues is projected as an average over 1997-2006, past experience shows that fluctuations in growth are likely from year to year. Growth in air carriers' revenues--the basis for changes in USATS' revenues--showed substantial fluctuations between 1983 and 1993. As shown in figure 2, the percentage growth in carriers' revenues exceeded 6 percent for half of the period, reaching its highest level in 1984, but fell below zero-percent growth in 1991.

Figure 2: Growth in Air Carriers' Revenues, Fiscal Years 1983-93



Note: Excludes commuter airlines' revenues.

Source: Air Traffic Control Corporation Study Financial Update, February 7, 1995.

<sup>12</sup>According to DRI/McGraw-Hill, the "pessimistic" scenario--in which the inflation-adjusted gross domestic product would grow at average annual rate of 1.7 percent--would be more likely to occur in the face of higher interest rates, lower growth in labor supply, a higher deficit, and higher energy prices.

Additionally, USATS' revenue forecasts do not appear to take into account or measure the effects of other potential changes in demographics and in USATS' fee structure that could influence airline traffic demand and thus USATS revenues. Forecasts of future traffic demand use past experience to project how traffic levels will change. If important structural changes occur, such as a change in the composition of airline passengers, then forecasts of future aviation activity may be less accurate.<sup>13</sup>

One potential change is a shift in a key demographic characteristic over the next 10-15 years. According to data from the Bureau of Labor Statistics, the growth rate in the labor force, relative to overall population, is expected to decline in 1992-2005. Moreover, the Bureau's data show that while the growth rate of employment in occupations that would likely involve significant travel was just over 40 percent between 1979 and 1992, this rate is projected to increase by only 29 percent between 1992 and 2005. The decline in the projected growth of such occupations indicates that the growth in traffic demand related to business travel may not be as robust in the coming decade as it was in the 1980s.<sup>14</sup>

Furthermore, changes in USATS' fee structure could affect demand for ATC services. USATS' revenue forecasts are based on the current fee structure, in which a 10-percent tax is assessed on the dollar value of domestic airline tickets.<sup>15</sup> Such a fee structure raises revenues in a way that is not directly related to the costs of providing air traffic control services. The costs of supplying these services are related to the number of operations (takeoffs and landings), the length of time an aircraft is in the air, the time of day an aircraft is operating, and the size and type of aircraft. For a given flight, the costs of ATC services are the same whether 1 passenger or 100 passengers are on board. The administration's

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<sup>13</sup>In forecasting future traffic demand, FAA implicitly assumes that airport and airway facilities can supply needed capacity. However, many airports are already very capacity-constrained, particularly at certain times of the day, and capacity is likely to be a growing problem. Capacity problems could be mitigated through the use of new technologies or new airports and/or runways. However, greater capacity could also cause more traffic delays, the use of larger aircraft by airlines, or airline pricing changes aimed at rationing seats on flights from more congested airports and peak times of the day. All of these changes could have implications for USATS' revenues.

<sup>14</sup>Another factor affecting the demand for business travel is the growth in business telecommunications.

<sup>15</sup>USATS would receive 85 percent of the current ticket tax with the remaining 15 percent going into the Trust Fund to finance FAA programs.

proposal assumes that USATS, as a self-supporting corporation, would have pricing flexibility. If USATS moved to a fee structure based on the cost it incurs in providing services, that would affect prices charged by airlines. Higher fees would presumably lower the amount of USATS services demanded by airlines; conversely, lower fees would increase the amount demanded.

The proposal assumes that, after two years, the corporation could set user charges to recover its costs. Allowing USATS the flexibility to set fees based on the cost of services gives the corporation a greater opportunity to be viable. However, because the corporation would not face competition in providing air traffic control services, the USATS board of directors or some other mechanism would have the role of ensuring that the corporation controls its costs so user fees are not raised to excessive levels.

#### CHALLENGES WILL FACE REMAINING FAA ON SAFETY ISSUES

Our nation's ATC system is widely regarded as one of the safest in the world. The credit for this safety record must go to FAA, the airlines, the aircraft manufactures, and pilots. Changes to the current system should be made with considerable caution, and only if the current level of safety can be maintained or improved.

The USATS proposal represents a fundamental change in how the ATC system will be operated and its safety will be ensured. For the first time, two distinct organizations will be responsible for ensuring the safety of the system. Three issues regarding the proposal have important safety implications: (1) defining the roles and responsibilities of USATS and FAA; (2) building FAA's ability to oversee USATS effectively; and (3) addressing the funding and staffing challenges facing FAA.

#### Defining the Roles and Responsibilities of FAA and USATS

The proposal to establish USATS would fundamentally change the way safety is built into the ATC system because two organizations--which have different missions and operate under two different command structures--would be responsible for ensuring safety. The proposal envisions that USATS would be responsible for operating the ATC system and making long-term decisions that affect safety and efficiency, and the FAA Administrator would have the ultimate approval authority on all safety matters. However, it is unclear how this division of responsibility will operate in practice and how the margin of safety will be sustained without creating ambiguity and lengthy conflict in the time-sensitive ATC environment. We would expect questions about responsibility to arise on a number of issues, including controller staffing and supervision, new ATC procedures, requirements and safety specifications for ATC equipment in the aircraft and in ATC facilities, eminent domain, and the

allocation of ATC safety equipment--such as instrument landing systems or tower facilities--to small airports.

Once the roles and responsibilities are established and defined, USATS and FAA will have to come to grips with important safety issues that involve trade-offs between safety, efficiency, and cost. Currently, these trade-offs are resolved by top-level FAA management within the agency. While the current proposal calls for the FAA Administrator to be the final decisionmaker on all safety issues, FAA has not yet worked out the details about how disputes will be resolved in a timely manner. Areas of potential conflict between FAA and USATS include such issues as the following:

- ATC procedures: One issue that will likely be debated is separations standards, or the minimum distance FAA allows between aircraft. This issue has been controversial and clearly involves striking a balance between safety and efficiency. It may be possible to reduce the standard separation between aircraft to increase capacity through new procedures and technological innovation. Making judgments on the appropriate separation standards can be complex because separation standards can differ depending on weather conditions and airports' facilities.
- New ATC equipment: In the past, FAA has established stringent standards for ATC equipment. For example, FAA's Airport Surface Detection Radar (ASDE-3) is expected to have an operational availability rate of 0.995 and have a mean-time-between-failure rate of greater than 2000 hours. While enhanced availability is important, it has increased the cost of the ASDE-3 and played a role in delaying its implementation.
- New safety initiatives: Because of safety concerns, FAA may mandate the use of new equipment or procedures that are costly to USATS and system users. For example, in response to mid-air collisions, FAA mandated the use of the Traffic Collision/Avoidance System, which cost the airline industry millions of dollars. In the past, FAA has resolved such concerns internally and used the rulemaking process to establish new safety initiatives. It is uncertain how disputes over safety initiatives that have significant cost implications would be resolved between USATS and FAA.

#### FAA Faces Challenges in Developing an Effective ATC Oversight Capability

FAA intends to oversee the new corporation in much the same way it oversees aircraft manufacturers and airlines. FAA inspects airlines, monitors their safety performance, and takes enforcement actions. FAA believes its "arm length" approach to monitoring has worked well in the past and is the appropriate model for overseeing USATS. However, our work over the past several years has pointed

out several long-standing problems with FAA's oversight of the airline industry. While FAA recognizes the need to address these problems and has initiated corrective action--such as convening the recent Aviation Safety Summit--progress has often been slow and problems still persist.

In January 1995, we testified that (1) while FAA has been responsive to identified safety problems, targets of opportunity exist where FAA could have been more proactive in enhancing the margin of safety, and (2) that FAA often takes years to bring needed improvements on line.<sup>16</sup> FAA's efforts to address problems with aging aircraft, commuter aircraft, deicing, and the safety of foreign carriers came about largely in response to major accidents. For example, as early as 1988 we reported that FAA could take steps to improve the safety of commuter airlines by, among other things, strengthening the training for commuter pilots.<sup>17</sup> FAA has a rulemaking in progress to address this issue and expects to finalize the rules later this year. In addition, we have reported that FAA has had difficulty in targeting its inspector resources, and carrying out enforcement actions in a timely manner. Since FAA's oversight of USATS will be modeled on oversight of the airline and aircraft manufacturing industry, FAA would have to overcome the past problems it has encountered. FAA will face two immediate challenges.

- First, safety oversight will be formidable because FAA will be responsible for overseeing over 460 control towers, 20 enroute centers, over 2,000 surveillance and communications facilities, and the actions of about 17,000 controllers and 8,000 maintenance technicians. To meet this challenge, FAA estimates that it will need about 200 staff, which it will have to hire, train, and deploy in short order. The specific size, skill, and expertise of this work force is uncertain and will require frequent review.
  
- Second, developing the necessary expertise and capability to oversee USATS may be particularly difficult since much ATC expertise may be transferred to the corporation. FAA will face two problems at once: it will lose its most experienced staff, and it may have to compete with USATS as well as with the private sector to hire talented staff. Our work on FAA's efforts to certify new aircraft illustrates the difficulties the agency may face in monitoring USATS. In September 1993, we reported that FAA had difficulty in keeping pace with advances

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<sup>16</sup>Aviation Safety: FAA Can Be More Proactive in Promoting Aviation Safety (GAO/T-RCED-95-81, Jan. 12, 1995).

<sup>17</sup>Aviation Safety: Enhanced Requirements Can Improve Commuter Pilot Training (GAO/RCED-88-218, Sept. 28, 1988).

in new aircraft technologies.<sup>18</sup> In one case, for example, during the certification of the Boeing 747-400 aircraft, FAA engineers did not understand the complex flight management system that operates the navigational system and monitors the performance of other systems. Given the scope and complexity of the ATC system and the continuing advances in ATC technologies, FAA may face similar difficulties in monitoring USATS.

### FAA May Face Funding and Staffing Challenges

In addition to the roles and responsibilities of USATS and FAA and FAA's ability to effectively oversee the new corporation, important questions remain about FAA's ability to hire and retain staff that are familiar with ATC procedures, facilities, and equipment. The remaining FAA will also be responsible for safety research and development, which includes procurement. Unlike USATS, however, FAA may be subject to federal personnel and procurement rules that the administration says have handicapped efforts to operate and build an effective ATC system. Because FAA may be subject to existing personnel rules, it may experience considerable difficulty in competing with USATS for the same type of talents and skills.

Under the current proposal, the FAA will be partially dependent on the general fund to finance the agency's operations. The proposal anticipates that FAA's fiscal year 1997 outlays will grow from \$2.6 billion to \$2.8 billion in fiscal year 2006--an increase of about 9 percent over that period. In contrast, USATS revenues would increase from about \$5.1 billion to about \$8.8 billion, an increase of over 70 percent, over the same period. Projected budget levels for FAA may not keep pace with inflation and personnel costs.

### GOVERNANCE ISSUES WILL CONFRONT USATS

Under the present ATC system, FAA serves a diverse clientele and makes decisions about siting equipment and providing services by balancing safety, efficiency, cost, and other considerations. These users include general aviation and small airports. The corporation, fashioned to operate like a business, may be less likely to see the incentive for accommodating or increasing service to system users whose financial contributions to the system are proportionately less than the value of the services they receive. An important issue facing the Congress will be whether and to what extent USATS should accommodate smaller stakeholders' needs for services and equipment.

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<sup>18</sup>Aircraft Certification: New FAA Approach Needed to Meet Challenges of Advanced Technology (GAO/RCED-93-155, Sept. 16 1993).



The issue of one user group paying more into the system than they receive in services is not addressed in the corporation proposal. We analyzed data on the use of this nation's air traffic control system and the sources of revenues for the Airport and Airway Trust Fund. As shown in figure 3, air carriers accounted for about half the aircraft handled by ATC centers in 1993, and air taxis accounted for 17 percent. On the other hand, general aviation aircraft accounted for over half of the operations handled by air traffic control towers in 1993, as shown in figure 4. As shown in figure 5, the user fee structure depends almost entirely on revenue from the taxes on passenger tickets for commercial flights; revenues from general aviation make up a relatively smaller percentage. It is envisioned that after two years, USATS will establish a user fee structure to allow for full recovery of costs for operating the system. However, if general aviation and public users are permanently exempted, as is assumed in the May 1994 proposal, the cost of the services provided to these users will be factored into USATS' cost basis but the corporation will not receive fees from these users.<sup>19</sup> In some respects, imposing a fee structure based on the costs to operate the system rather than on user taxes will likely reduce some of the cross-subsidies that exists within the system. However, a fee-for-service system raises a question as to whether the corporation will have incentives to continue to subsidize users by providing new equipment and services that do not meet strict cost-benefit criteria.

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<sup>19</sup>The proposal would allow general aviation to continue to pay user fees into the Trust Fund, which will be used to finance FAA programs. Public users, mainly the Department of Defense, will presumably contribute to the system through the Department's continued provision of ATC services and the general fund contribution to FAA.

Figure 3: Aircraft Handled by Air Traffic Control Centers by User Group, Fiscal Year 1993

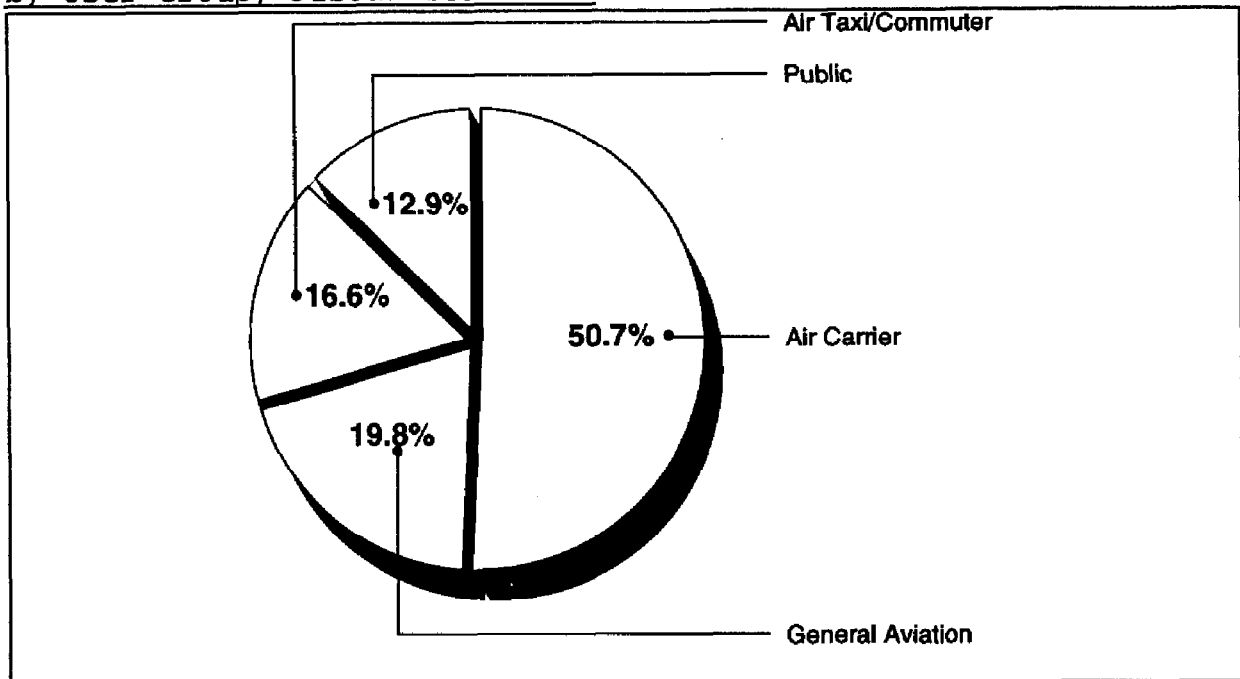
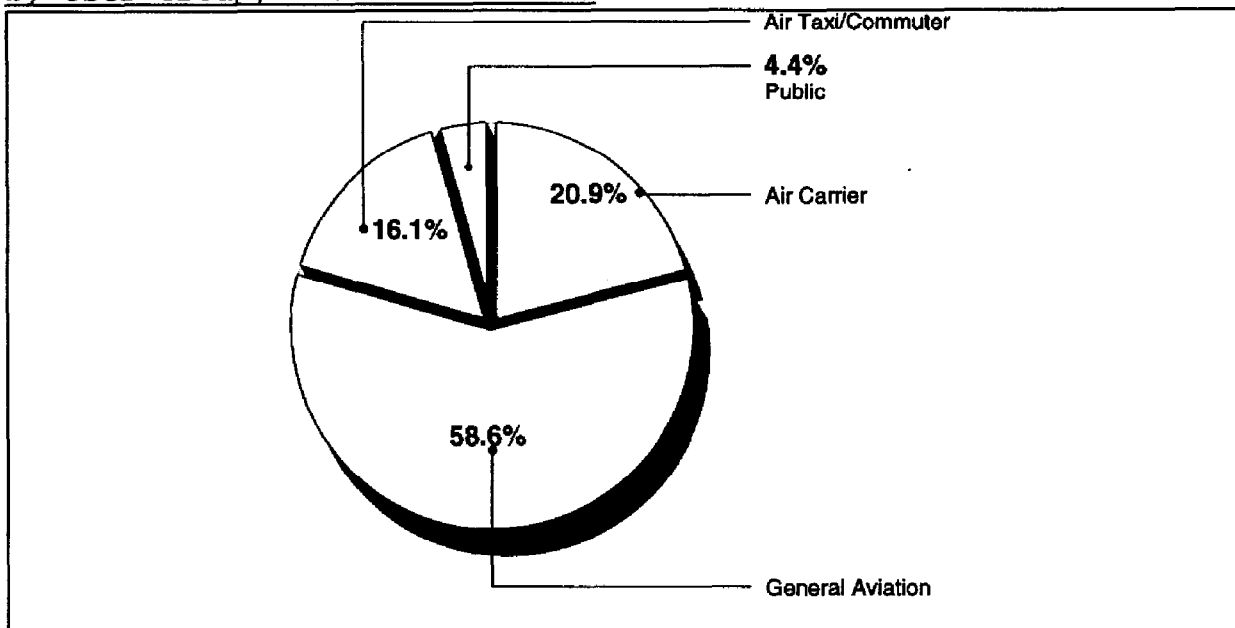
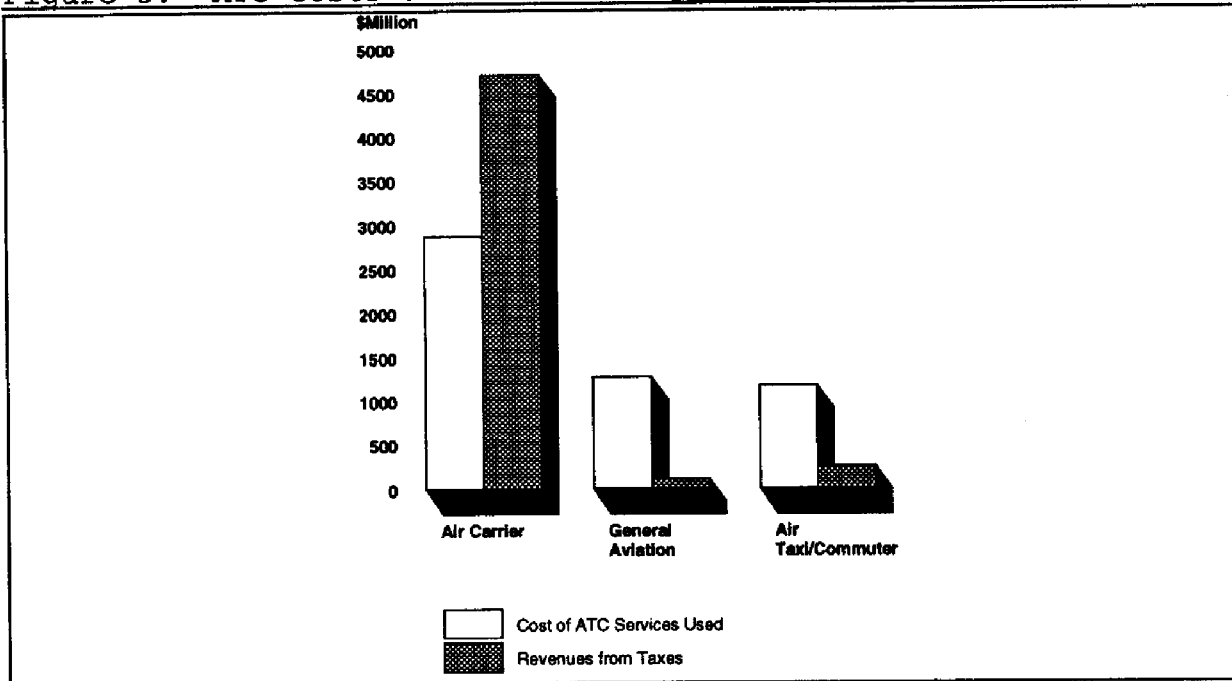


Figure 4: Operations Handled by Air Traffic Control Towers by User Group, Fiscal Year 1993



Source: FAA's Air Traffic Activity report (FAA APO-94-10), Fiscal Year 1993.

Figure 5: ATC Costs and Revenues by User Group, Fiscal Year 1993



Note: General fund contributions cover public users.  
 Source: Air Traffic Control Corporation Study, May 1994 and GAO's estimates.

As we reported in December 1994, FAA bases its siting decisions for equipment such as instrument landing systems on a balance of safety, efficiency, cost, congressional, and other considerations.<sup>20</sup> It uses similar criteria to make decisions about providing ATC services. For example, the agency might decide to provide an FAA-staffed control tower at an airport with a low level of flight activity. The primary beneficiary may be system users whose financial contributions to the Airport and Airway Trust Fund are proportionately less than the value of the ATC service they receive and the equipment they use. Smaller carriers, general aviation, and low activity airports are among the system's users that fall into this category. To operate in a businesslike manner, USATS' board of directors would likely base decisions about the placement of radars, landing systems, and control towers more on economic considerations. Therefore, we would expect that some small airports that receive equipment under the present system may not receive such equipment unless they are willing to finance the capital investment.

In our survey of international ATC organizations, we inquired about issues relating to stakeholders like general aviation.

<sup>20</sup>Air Traffic Control: Better Guidance Needed for Deciding Where to Locate Facilities and Equipment (GAO/RCED-95-14, Dec. 1, 1994).

International ATC officials told us that they are not confronted with many of these issues partly because their systems are not close in scale to the United States and they do not serve the diverse clientele that the U.S. system serves. These differences make drawing comparisons very difficult. However, these officials told us that corporate decision-making--as envisioned for the U.S. system--does reflect the make-up of the boards of directors. The USATS proposal includes an 11-member board consisting of representatives of users, employees, and government entities who are appointed by the President. Other countries' board membership comes from diverse backgrounds, including defense, airlines, business, law, labor, and government. In these countries, about half of the board members are government appointees and half are elected by shareholders or employees. In these countries, the preference is for the board members to be independent and from diverse backgrounds so that economic considerations are factored into decision-making.

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Mr. Chairman, that concludes my statement. We will be happy to answer any questions from you or other members of the Subcommittee.

### Comparison of U.S. and Foreign Air Traffic Control Organizations

Country	Independent of Government <sup>a</sup>	Starting Date <sup>b</sup>	Govt Safety Oversight <sup>c</sup>	1994 Expenses & Revenue (\$ in millions) <sup>d</sup>	Air Traffic Controllers <sup>e</sup>	1994 Aircraft Movements <sup>f</sup>	Commercial Aircraft <sup>g</sup>	Commercial Pilots <sup>h</sup>	General Aviation Aircraft <sup>i</sup>	General Aviation Pilots <sup>j</sup>	Weekly Domestic Departures <sup>k</sup>	Weekly International Departures <sup>l</sup>
United States	No	n/a <sup>m</sup>	Yes	Revenue: \$4,275 <sup>n</sup> Expense: \$6,190 <sup>o</sup>	17,300	38 million	18,440	117,430	184,430	654,090	142,930	8,240
Canada	In Transition	1996	Yes	Revenue: \$429 Expense: \$572	2,060	7.4 million	5,680	20,500	21,850	59,990	16,950	2,660
Australia	Yes	1988	Yes	Revenue: \$432 Expense: \$388	1,140	3.6 million	260	8,700	7,900	22,500	5,500	670
Germany	Yes	1993	Yes	Revenue: \$913 Expense: \$913	2,000	2 million	680	9,000	20,340	100,000	15,000	15,000
United Kingdom	Yes <sup>p</sup>	1972	Yes	Revenue: \$778 Expense: \$697	1,630	1.5 million	3,120	12,540	4,270	27,530	4,840	6,030
Switzerland	Yes	1988	Yes	Revenue: \$143 Expense: \$143	300	1.5 million	n/a	n/a	n/a	n/a	n/a	n/a
New Zealand	Yes	1987	Yes	Revenue: \$59 Expense: \$52	300	1.2 million	130	2,960	3,100	4,190	3,670	530

<sup>a</sup> Air Traffic Control (ATC) organization is completely or partially operating independently of traditional government structures.

<sup>b</sup> Year that a restructured ATC organization began operating or plans to begin operating.

<sup>c</sup> Indicates whether governments of respective countries have responsibility for safety oversight.

<sup>d</sup> Fiscal years vary by country.

<sup>e</sup> Approximate 1994 figures for active air traffic controllers.

<sup>f</sup> Aircraft movements as measured by Instrument Flight Rules (IFR) operations.

<sup>g</sup> Approximate number of commercial aircraft carrying passengers and/or cargo.

<sup>h</sup> Approximate number of pilots employed to fly commercial aircraft.

<sup>i</sup> Approximate number of general aviation aircraft registered in each country as of 1993 or later.

<sup>j</sup> Approximate number of private pilots licensed to fly general aviation aircraft as of 1994.

<sup>k</sup> Passenger and cargo.

<sup>l</sup> Passenger and cargo.

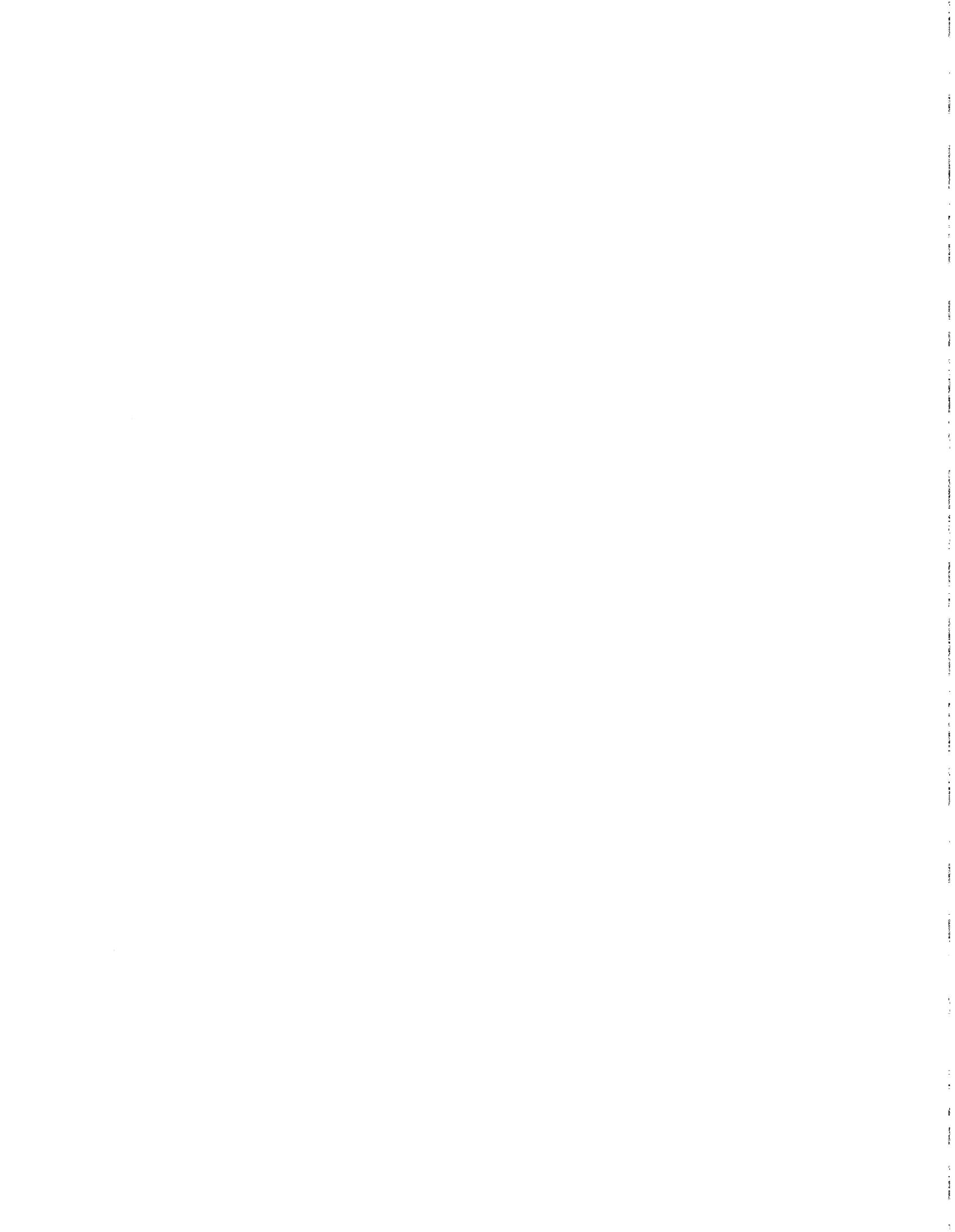
<sup>m</sup> Information not available or not applicable.

<sup>n</sup> Estimated ATC-related tax revenue (excluding interest), based on administration's proposed disposition of user taxes.

<sup>o</sup> Estimated ATC-related outlays, based on administration's proposed program allocations.

<sup>p</sup> The National Air Traffic Services (NATS) is a subsidiary of the Civil Aviation Authority (CAA). The CAA was created as a limited liability corporation constitutionally independent of the government in 1972. British officials are now debating whether NATS will become a private corporation.

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