
Pitfalls of Air Traffic Control Privatization

Professor Elliott Sclar, Columbia University
and The HDR Management Consulting Group
711 Westchester Avenue
White Plains, New York 10604

February 2003

Report commissioned by:
National Air Traffic Controllers Association

Pitfalls of Air Traffic Control Privatization
Professor Elliot Sclar, Columbia University
and The HDR Management Consulting Group

All rights reserved.
Copyright © 2003 by the National Air Traffic Controllers Association.

No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying, recording, or by any information storage and retrieval system, without permission in writing from the National Air Traffic Controllers Association.

For information address:
National Air Traffic Controllers Association
1325 Massachusetts Avenue, N.W.
Washington, D.C. 20005
www.natca.org

PRINTING HISTORY
Paperback edition / First printing: February 2003

PRINTED IN THE UNITED STATES OF AMERICA

Pitfalls of Air Traffic Control Privatization

Contents

Preface	3
Executive Summary	3
1.0 The Context of ATC Privatization	5
1.1 International Comparisons	9
1.2 Reduction of Costs	10
1.3 Increasing the Speed of Modernization	10
1.4 Stabilizing Funding	11
2.0 The Nature of ATC Privatization	12
3.0 The Context of ATC Privatization	16
4.0 The “Business” of Privatization	19
5.0 Privatization and Public Finance	22
6.0 Labor Costs and Air Traffic Privatization	26
7.0 Conclusions	31

Preface

The purpose of this White Paper is to provide the National Air Traffic Controllers Association (NATCA) with an independent analysis of the claim that service performance improvements and long-term operational savings can be achieved through the privatization of U.S. Air Traffic Control operations. NATCA has an abiding responsibility for helping to maintain safe and efficient working conditions for its membership as they fulfill their individual obligations for maintaining safe and efficient flying conditions for the American people. The Project Team assembled to conduct this was led by noted author Elliot Sclar,¹ Professor of Urban Planning and Public Affairs at Columbia University, and HDR's Management Consulting Group.²

Executive Summary

Privatization of the FAA's Air Traffic Control function, which had been off the table since September 11, 2001, has been resuscitated by President Bush's amendment of Executive Order 13180. The amendment revoked the "inherently governmental" status of air traffic control work previously granted by the Clinton administration. Prior to September 11, 2001, advocates had been advancing privatization as a solution to the burgeoning air traffic congestion problem. The current downturn in air travel, and the new focus on safety and security has left those same advocates bereft of a good argument for why privatization makes good sense. However, the disappearance of this rationale has not stopped advocates from attempting to re-introduce the privatization debate. Advocates have fallen back upon the generalized privatization ration-

¹ Professor Sclar, an economist and urban planner, is the Director of graduate programs in Urban Planning at Columbia. His book on privatization, *You Don't Always Get What You Pay For: The Economics of Privatization*, was published by Cornell University Press and won two prestigious academic awards, the Louis Brownlow Award for the Best Book of 2002 from the National Academy of Public Administration and the 2001 Charles Levine Prize from the International Political Science Association.

² Since the 1970's, HDR has been responsible for the procurement of more than 30 public operating facilities, represented more than \$5 billion in public-private capital expenditures, and negotiated more than \$20 billion in public-private operating agreements.

ale of price, technology, and funding to justify an essentially ideological predilection.

Privatization advocates point to cases of air traffic control privatization in other countries to highlight the potential value of privatization for the United States (U.S.). However, an independent review of three prominent international privatizations, Australia, Canada, and Great Britain demonstrate the dangers of privatization and the inability of private air traffic controller (ATC) monopolies to effectively deliver positive results in any of the three criteria that prompt privatization consideration: reducing cost, increasing the speed of modernization, or stabilizing funding. Further, the case reviews demonstrate that privatized air traffic control systems tend to impose greater costs on users, are prone to technological failure as well as disruptive labor disputes, and privatizers ultimately rely on government backing, to costly effect. In Canada, the privatized system has led to massive increases in user fees for passengers, and dangerous understaffing in towers. In Australia, excessive demands on controllers have led to a series of strikes, while failures with new technologies led to actual radar blackouts and major traffic disruptions. In the United Kingdom, the newly privatized National Air Traffic System (NATS) has been forced to go to the government for financial bailouts valued to date at two thirds of the original sale price, while technological failures have led to multiple system shutdowns and operational irregularities.

Evaluation of the nature of air traffic control provision suggests that privatization cannot address the efficiency concerns advanced by its advocates. ATC cannot be competitively bid. The profit making market based incentives for efficiency and economy that are supposed to motivate a private provider do not easily align with the government's abiding interests in safety and security. Moreover, cross subsidy, which maintains geographic diversity in service provision, is not sustainable under the proposed user fee system. The labor intensive, and inherently monopolistic nature of air traffic control provision undermines effective private provision. Monopolistic, revenue-driven organizations, regardless of profit or not-for-profit status, have little incentive to keep fees at a minimum. "Efficiency" in a labor-intensive service necessarily consists of staff minimization strategies, which tend to be contrary to the safety principle that lies at the heart of ATC work. More importantly, as more and more private enterpris-

es have access to the vital air traffic control information as a result of the increased use of contractors and subcontractors, the U.S. is more exposed to the potential threat of terrorist activities.

Lastly, based on a proprietary cost model and analysis of the Federal Aviation Administration (FAA), the Project Team estimates that privatization of ATC operations in the U.S. could lead to a 30% cost increase or more if the provision of equivalent levels of ATC services were provided by private contractors. In the end, once cost of training and liability expenses are appropriately taken into account, the federal government will spend more in its efforts to privatize ATC than the FAA would spend to provide the same service.

1.0 The Context of ATC Privatization

Prior to the downturn in air traffic that has been one of the bi-products of the terrorist attacks of September 11, 2001, there was a campaign to transform the management of the national air space from a public function to a contracted privately provided service. This campaign was premised upon causally linking two largely unconnected notions. The first was the well-known fact that there was a chronic and growing traffic congestion problem at the nation's busiest airports. The second was an assertion that it was the ineptitude of the public agency charged with the administration and safety of the ATC system, the FAA, which was the cause of the problem. More importantly, it was asserted that the FAA was incompetent to correct the problem, or at least was unable to do so in a cost-effective manner. While traffic congestion was a major concern, proponents of ATC privatization were able to juxtapose an accepted reality - the existence of congestion - with a more controversial theory about bureaucratic incompetence, implying, but usually carefully not concluding, that privatization would fix the congestion problem.

Now that the traffic congestion problem has fallen by the wayside, though it is certain to return in the coming years, privatization advocates stand bereft of a hook to hang

6

their cause upon. The recent push for ATC privatization, brought to light by President Bush's amendment of Executive Order 13180, revoking the "inherently governmental" status of ATC work, seems to come without explicit justification and swims against the stream of federalization in related work; namely airport security. Privatization advocates have failed to outline specific problems that radical reorganization of the ATC should solve.

Without a specific and highly visible reason for advocating ATC privatization, proponents are now left to extol the presumed virtues of privatization in general, and attempt to apply them to the case of ATC. Three primary reasons for ATC privatization are given:

1. Reducing costs
2. Increasing the speed of modernization
3. Stabilizing funding

The general argument on all three of these rationales is that the FAA, as a top-heavy bureaucracy, is incapable of making the desired improvements itself, *and that the private sector is the best substitute*. While it is true, as is the case for any public agency, or private ones for that matter, that there is room for improvement, it is not clear why a private replacement bureaucracy will be an improvement over an experienced public one. At the most basic level, there is simply no clear cut explanation for the claim that the FAA's bureaucratic behavior is sufficiently egregious as compared to that of the Federal Bureau of Investigation (FBI), for example, to explain why removing it from direct responsibility will markedly address the three problems listed above. In order to sustain the case for as drastic a change as privatization, it is first necessary to clearly demonstrate that inept public management is either *the* source of the problem or at least that it is a significant factor in its creation. Then it is necessary to demonstrate why the establishment of a new private entity, as the successor to the FAA would solve the problem. This is especially true if the successor agency is itself envisioned as a

unique corporate entity. It is not immediately obvious why the problems of one (public) bureaucracy will not reassert themselves in another (private) bureaucracy. From our review of the reports of existing privatizations and analyses done to date on the potential of a U.S. privatization, it is clear that neither of these has been demonstrated. They have merely been asserted.

Any serious commitment to improve the performance of the ATC system must start with a clear analysis of the problem and then link proposals for change directly to the problem. Cost and modernization issues at the FAA are not problems of bureaucratic incompetence. Rather they are multidimensional problems with far more powerful proximate causes. Among other factors, the pure scale of the enterprise, unmanaged growth in air travel, lack of adequate institutional support, and restructuring of the airline industry impact air traffic control efficiency. The ability of the FAA to respond is certainly a consideration, but it is not the determining consideration. Even if, for the sake of argument, one were to conclude that public management was the critical issue, any solution must reflect full cognizance of the nature of air traffic control work as a delivered service and the way in which an organizational change such as privatization would impact that work over time. That has not been done in any of the studies the Project Team reviewed. Instead the studies simply imply that a restructuring of economic incentives such as landing fees paid to a new agency, bonuses, and other rewards for employees will serve to alter bureaucratic behavior and cause the agency to handle more air traffic, more efficiently, and at a lower cost. While that is one possible outcome, it is equally, if not more, plausible that the incentives will distort behavior so that safety and security are jeopardized in the name of efficiency, that user costs will skyrocket, that the government will be forced into a massive financial bailout due to the inability to fully transfer associative risk with an air traffic control privatization, that the cost of the FAA's remaining security and safety responsibilities will swell as independent entities become responsible for implementation of safety standards, and that technological fixes will be implemented without adequate testing, bringing chaos to the air traffic control system.³

³ One can find examples of each of these negative outcomes in the privatization efforts in Australia, Canada, and the United Kingdom in turn.

In general, privatization is a blunt instrument of organizational change. In many ways it is at variance with much of the general consensus in the management literature that effective organizational change is a process of continual improvement focused upon the actual work of service delivery. To make a case for privatization it is necessary to demonstrate that the problem is so extreme that incremental improvement is unworkable. Privatization proponents assert that to be the case, but they never identify the specific basis within the FAA for this conclusion. Typically, privatizations are aimed at improving efficiency by introducing competitive behavior to a marketplace. It is clear to all parties, however, that there is no potential for competition in the air traffic control market. Air traffic control is too infrastructure dependent, and far too vital to our national interest to set up multiple competitive systems. Services cannot be rebid at any level of frequency if we hope to maintain continuity in a knowledge-dependent industry. Privatization advocates would agree with this assessment of the inherent impossibility of inserting competition into the air traffic control market. However, they turn to general notions found in privatization theory that assert that, because private organizations can provide economic rewards to employees who further the profit or surplus generating potential of the organization, it will become more efficient in fulfilling its mission. The privatization literature also suggests that public agencies are entrenched and intractable to change. However there is also management literature that demonstrates that public agencies are as amenable to improvement as private ones as long as the problem is properly specified.

Implicit in the theoretical formulation of privatization is an assumption that efficiency will improve because customers can take their business elsewhere. The threat of the loss of business is supposed to ensure that the private provider will create a better product for the organization's customers. But what if the private agency is to be the sole supplier? Economic incentives can quickly become a double-edged sword cutting against the interests of the consuming public. The generation of revenue and economic rewards will not necessarily redound to better management of the ATC system. It is also important to note that the ability to generate revenue surpluses and improved organizational efficiency are not the same. Especially when a private monopoly with less public accountability is proposed.

Since any privatization of the FAA would take the form of a single agency, there are many reasons to look critically at proposals to privatize it, rather than working to improve it. A strong case can be made that substantial improvement in the management of the FAA will more reasonably occur through a process of internal reorganization than a wholesale switch in the organization delivering the service. This is especially true if the alternative organization will not be a market based competitive supplier of the service. Given that the base of expertise in ATC rests with the existing staff and management, the reality of any “privatization” will largely involve moving the same people into a new workspace to do virtually the same activities they were accomplishing prior to being privatized. A call for reorganization of an existing organization is not as dramatic as a call for privatization, but is likely to be more effective. In fact, when we take a close look at the proposed ATC system privatization through the lens of managerial efficiency, it is clear that it has little to do with solving air traffic control organizational problems. Rather, it reveals a simple ideological preference for deregulation and privatization regardless of circumstance. Privatization is central to virtually every domestic public policy proposal of the Bush Administration (except, paradoxically, air transportation safety⁴). It is part and parcel of the movements to privatize every public service from education to fire protection. Viewed in this light, it is clear that air traffic control inefficiency merely provides a rationale for change that is sought for other purposes. The danger in such an ideological campaign for change is that if it succeeds and privatization moves ahead, it is not clear that the change will be synonymous with improvement in a situation vital to all Americans. It stands at least as good, if not better, a chance of making things worse.

1.1 International Comparisons

Advocates are often fond of looking to foreign cases when expounding the benefits of privatization. This is certainly true in the case of ATC privatization.⁵ Even a cursory

⁴ On November 19, 2001, President Bush signed legislation creating a federal Transportation Security Administration (TSA), which, among other things, employs and manages federal employees who conduct airport security screenings.

⁵ See, for example, Poole, Robert and Viggo Butler, “How to Commercialize Air Traffic Control,” Reason Public Policy Institute, Policy Study 278, February 2001.

review of private ATC provision in foreign countries, however, demonstrates the inherent dangers of the monumental change the U.S. is being urged to make. Three different “types” of privatization have been attempted abroad: (1) sell-off to a for-profit entity, (2) a private entity wholly owned by the government, and (3) establishment of a non-profit entity managed by a “stakeholders board”. These are reflected by cases of privatization in the United Kingdom, Australia, and Canada respectively. Reviews of international cases of each type directly contradict the ability of privatization to effectively address any of the blanket concerns expressed by advocates – price, technology, or funding.

1.2 Reduction of Costs

Privatization advocates often presume a private “efficiency” advantage. Several ATC privatization efforts have been successful at reducing total costs. However, the “at what price?” question is rarely asked. Evidence from Canada and Australia suggests that the price is safety and employee satisfaction, both of which bring new costs. In Canada, NAV CANADA has been successful at keeping costs low by negotiating with Controllers to keep flexible schedules. As a result, fewer Controllers need to be hired and labor costs are kept low. The second result of this cost containment strategy has been an operational irregularity rate of two per 100,000 aircraft movements – over twice that of the American rate for a system 7% of our size.⁶ Controllers in Canada are stretched to the point of being unable to perform their jobs.⁷ Cost saving work rules have so infuriated controllers in Australia that a series of strikes have crippled air traffic movement for hours at a time at a high cost to Australians as a whole.⁸ In both of these cases, cost savings strategies have translated to new, more serious problems with safety and efficiency.

1.3 Increasing the Speed of Modernization

A second claim of privatization advocates is that public bureaucracies have a poor

⁶ ATCA Bulletin, April, 2001; Canada’s total airline revenue passenger miles are seven percent of those flown by US carriers. Letters to the Editor, Wall Street Journal, July 24, 2001

⁷ Montreal Gazette, March 21, 2002

⁸ www.airservicesaustralia.com

record of providing modern technology and that private ATC systems would be innovative and speedy adapters of new technology. The Canadian, Australian, and British cases all demonstrate that this is in fact not the case. Technological “innovation” in Canada has consisted of waiting for the U.S. to develop new technology and then importing it. Cases where private ATC providers have attempted to hastily implement novel technology in response to “incentives” are even more disconcerting. In Australia, implementation of Airservices Australia’s, The Australian Advanced Air Traffic System (TAAATS) has led to several technological failures, including a twelve-minute radar blackout.⁹ In the United Kingdom, introduction of new software has caused severe disruptions and system shutdowns.¹⁰ Controllers in a new London area facility have been unable to make out the call numbers of planes on their new Sony screens, which is a major safety hazard. Anecdotal evidence from newspaper reports has suggested major inefficiency and safety hazards associated with private implementation of new technology in this vital piece of national infrastructure. Far from supporting the argument that privatization brings better technology quicker, international cases demonstrate a substantial risk of technological failure.

1.4 Stabilizing Funding

The third blanket claim common to most privatization proposals is that the funding stream associated with a private ATC provider would keep costs to users down, and isolate the government from the risk of escalating provision costs. Review of the Canadian and British cases both demonstrate cost escalations and increased user fees. In Canada user fees have increased several times since NAV CANADA’s inception, and particularly since the traffic downturn of the past year. The system is structured in such a way that even when the control fee charged to airlines decreases, passengers end up paying more. By 2002, the average fee per-traveler increased from \$12 to \$22.¹¹ The user fee system in Canada has definitely hit travelers as ticket prices have increased dramatically.

⁹ Daily Telegraph, July 8, 2000

¹⁰ Daily Mail, March 28, 2002

¹¹ The Toronto Star, July 8, 2000

12

The situation in the United Kingdom is even more problematic. The British privatized their ATC services by selling a 46% stake to a consortium of seven airlines, and an additional 5% to employees. The government retained 49% plus an extra “golden share.” Over the past year the government has had to bail out the new National Air Traffic Services (NATS) twice, to the tune of \$131 million – about two thirds of the original sale price. The private sector holds 46% percent of the equity in NATS, but as the recent government bailouts have demonstrated, the private sector is assuming none of the risk. Air traffic control is a vital public service, one in which a shutdown or catastrophic failure would cripple the nation. Regardless of technical or legal responsibility, the government will always be in a position of having to ensure continuing service. As has been made clear by the British case, market-based privatization of the air traffic control system means that the government surrenders its vital assets, but continues to assume the costs and final responsibility for ensuring continuing service. This situation could not possibly be described as “stabilized.”

2.0 The Nature of ATC Privatization

ATC privatization is significantly different than typical privatizations. Typical proposals to privatize public services involve specifying the service to be privatized and putting out a competitive request for proposals (RFP). The service is then turned over to the lowest cost qualified private provider. The assumption is that the existence of alternative suppliers is sufficient to discipline the contractor to perform to the agency's specifications. While there is a great deal of experience to suggest that this is not always or even often the case, the situation in terms of ATC does not even fit this model.¹²

ATC privatization differs from typical privatization proposals in two essential ways. It cannot be competitively bid and the FAA has to retain a powerful supervisory role in the name of public safety and security. Thus while ATC privatization is vaguely consistent with the larger privatization movement, the form that is proposed for it bears only a distant familial resemblance to the mainstream of privatization proposals. This difference is sufficiently crucial as it calls into serious question the potential effectiveness

¹² Sclar, Elliot, *You Don't Always Get What You Pay For: The Economics of Privatization*, Cornell University Press, Ithaca NY, 2000

of this privatization in its own terms. More importantly, if it is not effective in terms of the problems it is supposed to address, then the U.S. risks losing precious time and money in improving its ATC system. More importantly, it risks degradation rather than improvement in the system.

ATC is not and will never be a service subject to the discipline of the competitive market place. It fails the "yellow pages" test. There are no available private sector providers with listed phone numbers ready, willing, and able to sell a national ATC system on a moment's notice. Furthermore, the government could not create a competitive market for ATC services even if it wanted to. ATC does not lend itself to competitive market configurations. It would be inefficient to duplicate the costly advanced technology that modern ATC demands among many providers who would then compete to sell it to government. ATC is what economists characterize as a "natural monopoly." Situations of natural monopoly are situations in which, because of the large scale of operation and the high fixed costs in infrastructure, it is less expensive to have a single regulated provider.

Secondly and more importantly, because of safety and security considerations, it would be risky in terms of public safety to have private operators, either singly or multiply, each responding to their own internal profit imperatives, acting on their own operational protocols moving air traffic through the national air space. Review of the two recent examples in which the cost savings measures employed by private operators of public transportation services were directly or indirectly blamed for the May 10, 2002 "Potters Barn Derailment" in London, England¹³ and July 1, 2002 mid air collision on the Swiss-German border¹⁴ further substantiate the significance of safety considerations when considering privatization.

¹³ Six people were reported killed and 65 seriously injured after a train crashed just north of London, England May 10, 2002. Although the UK's Health and Safety Executive Department has not determined the direct cause of this accident-incompetent maintenance and slipshod safety inspection conducted by Railtrack, the UK rail infrastructure operator, seems likely according to several reports.

¹⁴ A July 1, 2002 mid-air collision over Switzerland killed 71 people, including 52 Russian school children. Skyguide, the Swiss company that operates Switzerland's air traffic control system, asserted pilot error. However, further investigation indicates a systemic breakdown, including inadequate staffing, the fact that the communications link with German air traffic controllers operating on a degraded mode, that the collision alarm system had been taken out of service for maintenance, and general lack of clarity about the lines of responsibility and authority.

This operational risk is only compounded by the security risk associated with private operators and their employees having unabridged access to the nation's air traffic control systems. In an address to the Senate Subcommittee hearing, US Senator Chuck Schumer stated: *"I don't need to spell out the absolute havoc and devastation that would result if cyber terrorists suddenly shut down our air traffic control system with thousands of planes in mid-flight."*¹⁵ With the increasing push for ATC privatization, access to sensitive information is further compromised without the necessary protocols and procedures in place to protect the public's interest.

In the final analysis, responsibility for air safety and security is considered an uncompromising responsibility of government. Even the most ardent privatization proponents are not willing to turn that responsibility over to either not-for-profit or for-profit companies.¹⁶ As a result in the ATC privatizations that have occurred elsewhere in the world and in the proposals for domestic privatization, the regulatory function for reasons of safety still reside with national governments. Thus for reasons of both market structure and public safety, ATC privatization proposals are all variations on the theme of semi-public operation.

At present there are two dominant and somewhat complementary and somewhat competing visions of ATC "privatization." The National Civil Aviation Review Commission¹⁷ advocated a serious reform of FAA internal operations, based on the establishment of a "Performance Based Organization" (PBO) within the FAA. The commission recommends that this PBO include an external oversight board and strong financial management incentives focused on the ATC and infrastructure needs of the 21st century. That model was effectively implemented in the December 7, 2000 Executive Order issued by President Clinton to establish an "Air Traffic Organization" (ATO) within the FAA. The ATO as envisioned in this executive order is more than a mere reorganization of an existing agency. It calls for the use of "strong incentives" to

¹⁵ See Sen. Schumer address to the Senate Courts Subcommittee hearing examining new, state-sponsored cyber terrorist threats to the US security, February 13, 2002

¹⁶ See Poole, Robert and Viggo Butler, "How to Commercialize Air Traffic Control," Reason Public Policy Institute, Policy Study 278, February 2001

¹⁷ National Civil Aviation Review Commission, "Avoiding Aviation Gridlock and Reducing the Accident Rate: A Consensus for Change," December 1997 (<http://www.faa.gov/ncarc/reports/pepele.htm>)

motivate managers to achieve results. It calls on the new ATO to "consult with customers, the traveling public, including direct users such as airlines, cargo carriers, manufacturers, airports, general aviation, and commercial space transportation providers" in order to "satisfy the FAA's external customer needs." This reorganization is, as yet, not completed.

In the report accompanying the Executive Order, the White House called upon Congress to pass the needed legislation to permit the new ATO to replace existing excise taxes on passengers with cost-based charges on commercial users of the air traffic system. "The Air Traffic Organization needs to be able to price its services, in order to balance supply and demand in the short run and to know what steps are needed to meet customer demand in the long run."¹⁸ According to the White House, once this legislation is in place, and cost-based fees finance the ATO, Congress should also permit it to borrow funds from the Treasury or private capital markets to finance long-term investments in the ATC. As will be explained below, an ATO will need a stabilized source of funding. A fee driven system will destabilize cash flow and undermine the effective continuity of air traffic control provision.

The more radical suggestion seriously under consideration comes from the conservative Reason Foundation.¹⁹ They advocate a complete separation of the ATC system from the FAA. The Reason Foundation proposes the formation of a new non-profit institution, managed by a board of stakeholders (those with an interest in air traffic control) and funded directly through user fees. The FAA would retain an external safety supervisory function in the Reason proposal. The stakeholder board would be comprised of representatives of the various segments of the air carrier industry, pilots, airport operators and organized labor in the ATC field.

¹⁸ The White House Report on air Traffic Control, December 7, 2000

¹⁹ Poole, Robert and Viggo Butler, "How to Commercialize Air Traffic Control," Reason Public Policy Institute, Policy Study 278, February 2001.

3.0 Understanding ATC Privatization Logic

There is a fourfold benchmark against which we measure the performance of any transportation mode: safety, convenience, reliability, and cost. In this case we are evaluating the implications of privatizing the management of the national air space. It is the central element of infrastructure in our system of air transportation. Consequently we need to assess the privatization proposal in the context of modal performance. Though improvement in safety is always possible, and definitely desirable, the American Air Traffic Control system is a highly effective provider of safe air travel.²⁰ Certainly no proposal has suggested that privatization of the ATC function will improve the convenience of air travel. However on the third element, reliability, the existing system has generally done poorly and is expected to get worse again. In 2000, nearly half of all flights at major airports arrived late. About 1.9 million Americans were flying each day. Despite the current downturn in flying, that figure is expected to rise to about 3 million by 2013.²¹ In terms of cost, many critics have suggested that the FAA is inefficient, but none have established that ATC is costing more than it should. Evidence from existing U.S. efforts to contract out tower operations demonstrates that ATC can be less expensive, but only at the cost of a reduced level of service. Critics have suggested that the FAA has not implemented Capital and Technological Improvement Programs as quickly as they should, and that this might improve if the ATC function were to be privatized. Evidence from the United Kingdom, and Australia suggest that this may not be the case.

Because the FAA manages the nation's ATC system, it must play a central role in any proposals to improve the situation. But what should be done? The answer is not easy because the problem is multifaceted. Any exact answer will depend heavily upon where one stands with regard to the relative problems and their sources. For example, from the point of view of the commercial air carriers the major problems are those of delay caused by the weather and the inability of the FAA to properly manage the air space, as well as lack of runway space. Runway space is not centrally controlled, and

²⁰ "You could fly commercially every day for 22,000 years and not lose your life in an accident." White House Report on Air Traffic Control Reform, December 7, 2000.

²¹ "Let pilots do it," *The Economist*, June 9 - 15, 2001, pg. 31; NATCA, 2002 (www.NATCA.org)

therefore requires a more piecemeal campaign. The weather is taken as an uncontrollable given. But the FAA, viewed as a rigid bureaucratic manager that has failed to modernize the ATC system consonant with increasing travel demand, makes for a clear and specific target. From the FAA's point of view, they agree about the weather as a major cause of delay, but they cite the carriers for over scheduling flights with little to no regard for the capacity limitations of either the airports or the air traffic control system. The FAA also suggests that its ability to rapidly innovate new technology is hampered by the government's budgeting process. The federal government does not have separate capital and operating budgets. As a result, the funds needed for infrastructure investments by the FAA, have to compete with their operating needs as well as the needs of other federal agencies. By permitting the privatized agency to levy users fees, privatization proponents hope to overcome this problem. Theoretically, this may sound correct. Unfortunately, there are significant limitations as to the extent to which this holds true in reality-(1) there are limits as to what the customer will be willing to pay, and (2) the transportation industry operates within a cyclical marketplace. Additionally, there are implications with the type of technology that gets used, and there are other ways to solve the problem, all of which must be evaluated in terms of their long-term costs and benefits.

To bring some order to this debate, it is helpful to cluster the sources of the problem as being either on the "demand side" or "supply side" of the air travel market. In this context demand side refers to factors driving the market for air travel. The supply side focuses on the factors shaping the system's capacity to accommodate travel demand.

Demand side analyses point to population growth, the state of the economy, safety concerns, and deregulation as the principal drivers shaping the market for air travel. Demand side solutions essentially involve demand management innovations. These fall into two categories: creating substitutes for air travel and using pricing incentive to ration scarce airport capacity. In the former category are proposals to create attractive alternatives to short haul flights such as high-speed rail travel. In the latter category there are several proposals to use variations on what is called "congestion pricing" to ration scarce airport time and runway space. Congestion pricing involves using higher

user fees at certain peak periods to induce airlines and general aviation flyers to reschedule their travel to less dense periods.

Supply side analyses see the problem on the "sell" side of the market and seek to overcome the capacity limitations of the existing air transportation system. They seek to expand existing airport and air traffic control capacity to match the growth in air travel demand. The dominant supply side approaches to the problem involve finding ways to expand capacity by building new airports, building more runways, and modernizing air traffic control technology and practices.

A second supply side approach is more indirect. It sees the root problem as the inherent shortcomings of public management of the air traffic control system. For analysts who hold this view, the solution is the privatization of the ATC function. The National Civil Aviation Commission concluded in its 1997 report that as a government bureaucracy, the FAA is too top-heavy, and slow to change. The Reason Foundation asserts that privatization is necessary because the FAA is a "tax funded, top-down bureaucracy that's micromanaged by Congress instead of being a business that's paid for and responsive to customers." Privatization proponents argue that only by taking ATC away from the FAA will it be possible to effectively implement any of the supply side solutions identified above or the demand side solution of congestion pricing. These proponents see the lack of speed in the implementation of new technology as principally an organizational failure by a public entity. Their solution is to call for some form of privatization of the FAA. It is the strengths and weaknesses of these proposals and the assumptions that underlie them that will be the principal focus of the remainder of this paper.

While it is easy to grant that FAA's management practices, as with virtually all management practices, can be improved, it is not clear from any of these reports why the FAA is so bad that little short of a wholesale replacement of the ATC function is the answer to the cost, modernization, or funding problems. The central question then is whether privatization will add significant value to attempts to improve air travel. As is demonstrated below, the proposed privatizations can generate a new set of problems that

could lead to a decrease in reliability, lack of technological innovation, and cost increases. Therefore given that the case for privatization is far from open and shut, it is important to understand the pros and cons of various courses of action with regard to FAA reorganization.

The reorganization debate is more than a debate over the economics of organizational behavior. It is also a debate about political economy. Some segments of the air travel industry stand to garner large economic gains if ATC privatization is implemented. Others risk losing some advantage and therefore oppose privatization. However such an important policy decision must be made on the basis of fact and not political economic advantage or ideological predilection. To fashion a context for taking many other elements into account, this paper will focus on answering four questions. How well do proposals to privatize the ATC system accord with the travel problems the nation faces? Along with gains, what are the costs that privatization will impose? Do the gains exceed the costs? What other alternatives should policy makers be considering?

4.0 The "Business" of Privatization

A presumption underlying both the National Civil Aviation Review Commission proposal for a Performance-Based Organization, the Reason Foundation proposal for a governmental corporation, and the Clinton Administration's executive order establishing an ATO is that ATC is essentially a "product." As such, it could, with little difficulty, be provided to the FAA under contract by a "business." Consistent with this product/business approach, ATC privatization is often referred to as "corporatization," or "commercialization" in the relevant literature. The problem with such theorizing by analogy is that while it is intended to illustrate that ATC is just one more marketable product, it, of necessity, oversimplifies the complexity of "the product." It overemphasizes the final service, actual guidance to in-flight aircraft, but it de-emphasizes the important qualities of ATC as an element of our national public infrastructure. The system of physical structures, communications equipment and a continuing and reliable supply of highly trained and loyal personnel that generate the actual guidance service

is in reality a single piece of our national infrastructure. The actual service is the outcome of the soundness of this infrastructure. For these reasons, it, in and of itself, can never truly be a product offered for sale by private suppliers in a market-like setting. As a result the discipline of market competition and the metaphor of business cannot be invoked as a safeguard for our public assets. However by urging us to adopt the view that ATC is just one more saleable product, privatization proponents divert the policy discussion away from choices about effective agency reform and stewardship of public assets into a discussion of choices about styles of market regulation. The bottom line risk in this dialogue is that it threatens the long-term stability and security of our national air space. The well being of this air space is crucial to both our national security and commercial prosperity.

The "business model" metaphor also fails because it does not come to grips with the nature of actual ATC work. The production of ATC is labor-intensive work. Although there is a great deal of expensive physical capital in the form of buildings and equipment, the largest proportion of operating costs for ATC is personnel related. Studies undertaken by the National Research Counsel (NRC) demonstrate the extent to which both the quality and quantity of ATC service reflects the skills that the staff brings to its work. The staff in turn responds to the context of professionalism within which they work. The argument for privatization never makes clear how and why a "corporate culture" will improve the work environment and professionalism of air traffic control work. At best they suggest that economic incentives could be used to enhance productivity. While the importance of fair compensation should never be underestimated, it is only part of the job market equation for highly skilled and well-educated workers who have other options. Consequently in contemplating meaningful reform within the FAA it is necessary to start from a complete appreciation of the work environment of air traffic controllers. A top-down privatization will have less to do with improvement than would a better, bottom-up understanding of their working conditions and the kinds of improvements they deem necessary. Privatization, because it relies on contractual relationships, requires simplified staffing standards that the FAA can easily check. However, as the NRC found, it is almost impossible to develop objective standards for this labor-intensive work as "the issue of appropriate staffing

levels is not simply a question of science and models but involves a long and frequently contentious debate over work rules, productivity, compensation, management practices, and other issues."²²

No proposal to privatize ATC calls for absolving the FAA of ultimate responsibility for the safety and security of the national air space. Indeed the Civil Air Navigation Services Organization (CANSO), the international industry association of privatized ATC systems, flatly states that "commercialization does not...mean that...the government can abdicate its responsibility for the provision of air navigation services."²³ Moreover, even if the commercial ATC operator is permitted to set its own fee structure, some residual oversight of rate setting will need to remain with the FAA given the monopolistic nature of the service. Given that, from a policy point of view, the only relevant questions concern the costs and benefits of a highly regulated monopoly versus direct public operation. Even NAV CANADA, perhaps the most thoroughly privatized of the ATC systems to date, grants residual safety regulation to Transport Canada.

One of the strongest arguments for privatization is found in the belief that it will save money. It is suggested that privatization will cut the bureaucratic waste out of the operation. This is done by a methodology that can be referred to as "psuedo benchmarking." Benchmarking is a time honored management tool for comparing the performance of an organization with an outstanding peer as a way to assess its performance in terms of effectiveness and efficiency. However it is, at best, only a first approximation as no two organizations are ever identical. Differences matter and must be taken into account. The Reason Foundation, in its attempt to argue for the cost savings of privatization, cite the cut in the size of the Canadian ATC system when it was converted to a private operation with the creation of NAV CANADA. There are clearly problems with such a comparison between a system the size of the U.S. system and the Canadian system, which is only a fraction of the size. But, more importantly, as the NRC study shows, the cut in staffing at NAV CANADA may represent a decrease in quality. Quality in this case translates into passenger safety and national security.

²² TRB Special Report #250, pg. 1

²³ CANSO, "Corporatization of Air Navigation Services," A Special Report, August 1999, pg. 4

Situations in which these differences are not duly noted are situations of pseudo benchmarking. In general the studies of foreign experience with private ATC never assess its direct relevance to the U.S. They merely infer that it is relevant.

5.0 Privatization and Public Finance

One of the largest dangers in privatization of the ATC system is that such a privatization is not really what it purports to be. It is billed by its advocates as an attempt to improve the efficiency of the ATC system. In fact it is really a battle for control of public funding. All the foreign ATC privatizations and the one proposed for the US have one element in common. They all work on the assumption that the system will be self-supporting via user fees. The notion of self-support via user fees is consistent with the business model. However it has two major problems. The first concerns the equity nature of the funding. The federal government presently finances air traffic control. Air travelers, in part, pay some of the costs via an excise tax based upon the value of their tickets. It is to some extent a progressive tax, in that people who purchase first class tickets tend to be more affluent than those who sit in coach. The excise tax on first class tickets is higher than the tax on coach tickets. A switch to a flat per seat fee structure means that all travelers pay the same user fee. As a proportion of a lower fare ticket the fee would be higher. To the extent that air travel is price elastic, this switch means that the most budget conscious travelers bear the highest proportion of air travel costs for a privatized ATC system, either out of pocket or by simply cutting back on air travel. That in turn means that the low cost carriers bear a disproportionate share of the costs. Undoubtedly they will (rightly) protest the loudest over any attempt to switch fee structures. To a large extent the move towards privatization represents a move toward a firmer hold on the industry by the largest carriers. As a matter of equity, the cost will be borne by the least able to pay.

The second concern is about the behavioral characteristics of the organization that such fee driven privatization will put in place. It is noteworthy that crucial to every instance of global privatization has been an assurance that the user fee structure that accompanied the separation will be sufficient to support the new organization.²⁴

Absent such a sustainable fee structure, privatization is impossible. It is more than coincidence that pressure for the separation of ATC from government control only occurred in an era in which global air traffic has been expanding. It is in many ways similar to the experience of highway building in the U.S. In the early years automotive and highway building interests sought the use of general revenue funds to subsidize the growth of the transport mode. However once it achieved mass acceptance, they pushed for the creation of an earmarked highway trust fund to ensure that motor vehicle generated taxes were used exclusively for highway construction and maintenance. Privatization at the bottom line is really nothing more than an attempt by elements in the industry to ensure that tax revenues generated by air transport are recycled to air transport in ways that they can control. As a matter of public finance theory there is no reason why the sources of taxes and the uses of the revenues must be linked. On the other hand as a matter of practicality in financing needed improvements, the approach has much to recommend it. It is important to note that there are other ways to achieve the same result without the separation of the ATC function from the regulatory function. More importantly there are real reasons to be concerned about such a spin off.

A separate, revenue-driven organization has its own priorities. These priorities may or may not be the same as those of either the FAA, charged with responsibility for the safety and security of the national air space, or the users who pay the fees. Advocates of privatization cite the ability of the privatized entity to turn to private capital markets to secure needed financing for upgrading facilities as a major advantage of privatization. The private entity can do this because it can dedicate its revenue streams to repayment of the bonds. However because it assumes these debt obligations it is driven to insure a steady stream of user revenues. More traffic is always in its interest. At times for reasons of safety and security, however, the FAA's concern, may be for less traffic. In a business cycle contraction or as a result of an event like last year's terrorist attack, fees will contract. The organization would then become hard pressed to meet its bondholder obligations. Since there is no government guarantee for these bonds, the organization is faced with several undesirable choices: they can raise fees, even as

²⁴ CANSO, "Corporatisation of Air Navigation Services," A Special Report, August, 1999.

passenger traffic is diminishing; they can concentrate on activities that generate fees rather than activities that generate a more efficient system; or they can go back to the government for a bailout, as in the U.K. case. Efficiency in the context of fee generating activities is in the organization's interest. Efficiency that would not be fee generating is not. There is evidence from the experience at NAV CANADA that in fact air traffic congestion did not diminish even as fee revenue increased.²⁵ More importantly we must recognize that from day one into an uncertain future, the newly privatized ATC operator and the government no longer share all of the same goals. We are setting up a situation that will increase conflicts of interest (moral hazards) and we will try to bridge them by ever more expensive regulatory schemes (transactions costs).

A final financial problem with privatization is that it eliminates cross subsidy. Cross subsidy occurs when revenues from one portion of an operation subsidize other portions of the operation. It is quite common in transportation. For example, urban bus systems run some routes that yield a surplus over costs and others lose money. However together they form a unitary system that provides a vital public service. Absent the cross subsidy, the fares on the high cost routes would have to be higher. That in turn would lower usage and defeat the purpose of the public transport service. The Reason Foundation opposes cross subsidy. Their reasoning is that to the extent possible users should pay the full cost of every good or service they consume. That argument works best for situations in which there are not larger externalities or desirable public benefits from the system. Where such benefits exist, cross subsidy affords a way to minimize the total degree to which the public sector (general taxpayers) must subsidize a public service. Air transportation is a national asset, as we have realized once more in the wake of September 11th. Cross subsidy helps to strengthen it. Privatization will seriously weaken it.

To understand how this can be, consider the experience in Canada. In 1996 when NAV CANADA was established, Transport Canada essentially did what the Major Government did in Great Britain when they privatized British Rail. The British Government pulled a unified system apart and sold off the pieces separately. The

²⁵ Internal NATCA Memo, "Notes from interview with COPA."

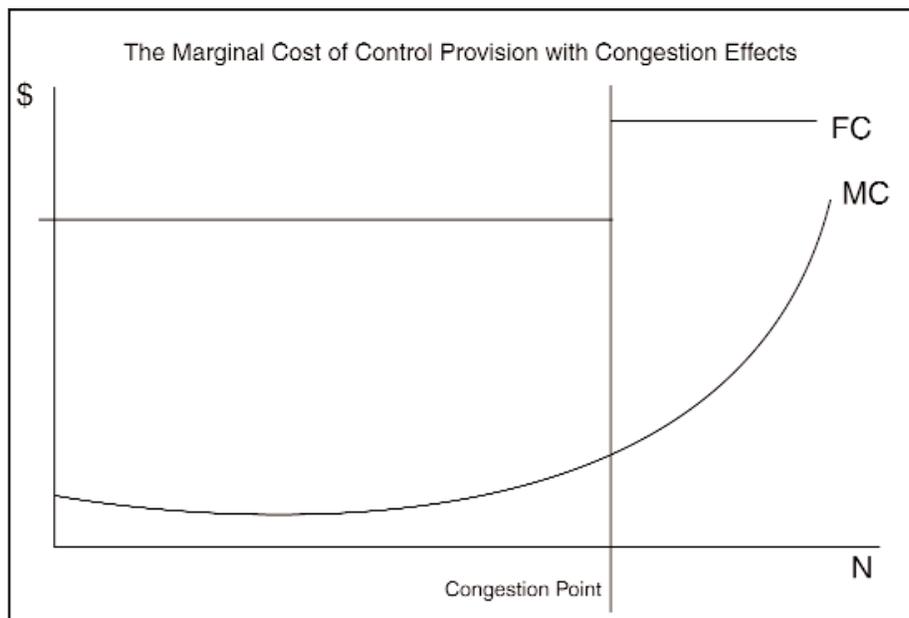
result was that British Rail rapidly went from one of the best national railroad systems in the world to one of the worst. The Canadian Government until 1996 had a unified air transport infrastructure system. The Government owned the airports and the ATC system. Following the British pattern, they separated the pieces and sold them off separately. They sold off the airports where traffic was lowest at low prices typically to the local municipality. In the case of the 26 largest ones, they were sold to private for-profit operators. It was the fees from these larger units that subsidized the operation of the smaller units. With the end of cross subsidy, fees rose rapidly at these smaller airports. The bulk of the surpluses at the larger airports no longer go to the public sector, beyond previously negotiated lease or sale revenue. And of the amount that does, the national government is no longer constrained to use its share to support the smaller airports. Yet if Canada is to have a viable national air transport system, all the airports are needed. In addition, because the ATC operator NAV CANADA is separate from the airport operators, it is not constrained from charging ever-higher fees to meet its organizational goals, regardless of local impacts. The result of the disappearance of cross subsidy is a serious shifting of costs and benefits in the Canadian air transport industry. In fact, user fees have shot up several times. Following the market downturn of last year, NAV CANADA instituted a 6% user surcharge to cover their shortfalls. There exists little barrier to uncontrollable escalation of fees.²⁶ It is not clear that air travel in Canada is better as a result. There has been some upgrading of system equipment. But there is also evidence that attempts to cut labor costs are leading to a less safe system.²⁷ Moreover fees are rising everywhere and small airports are under great pressure. If the viability of small airports is threatened, the entire air transportation system in Canada will be undermined. Although the Reason Foundation and other advocates are ready to call NAV CANADA a success, a more objective assessment would have to hold that, at best, the result is still unclear. At worst there are clear signs that it could be heading in the same direction as British Rail.

²⁶ Toronto Star, "Air Canada Open to Ad Rules," June 15, 2002

²⁷ Privatization has exacerbated the working conditions. In other words induced more fatigue in the scheduling because there's a lot more being demanded of the controllers." Bhimi, Fuzz, CNN Sunday Morning, April 20, 2001.

6.0 Labor Costs and Air Traffic Privatization

As pointed out above, despite the high level of technology and level of capital equipment necessary for ATC, the variations in operating costs are driven by labor. The crucial question from an economic point of view concerns the degree to which a transformation of ATC from public to private operations can achieve real cost savings in system operation. It is doubtful that it can. As a natural monopoly, ATC has high fixed costs - towers, monitors, radar, etc. However, the marginal costs of service delivery are usually quite low. That is, the cost of providing one additional control (directive order from tower to cockpit) approaches zero. This is a characteristic of natural monopolies that holds true until the point of congestion (the point when more controls are requested than a system can handle). At this point, a quantum change in the costs of operations occurs. Due to the structure of the market, in which the initial infrastructure is massively expensive, but the cost of each additional unit of service is so low (see figure below), air traffic control can never constitute a competitive market in the sense that we are generally accustomed to. The closest ATC can ever get to competitive is to be broken up into its constituent parts and have each auctioned off to new private monopolies. As in the British Rail cases, the hope here would be that



some of the constituent parts might foster competition, a strategy that experience has shown to be highly risky.

Evaluation of the natural monopoly model demonstrates that unless massive expansion is required, the marginal costs of provision are determined almost completely by labor costs. The salient question then becomes: can a private provider keep labor costs below those of a public service provider?

As the largest scale provider of ATC in the world, the FAA has reasonably efficient purchasing power on capital equipment, the real question of costs comes down to labor - can a non-FAA organization compensate air traffic controllers at a lower level?

The evidence at this point suggests that it is unlikely in the long run. The evidence derives from the experience with the FAA FCT Program. It demonstrates that while today, private control companies operating low-activity, non-radar ATC facilities do compensate their controllers less, on average, than the FAA does, this would not be sustainable in a fully privatized system. Furthermore, while the training costs and standards of these employees are currently lower than the FAA's, this would also be impossible to sustain in a fully privatized system. On top of these cost differences, the current advantage of the private sector contractors - that they are not required to pay for health insurance, a major compensation factor in any labor-intensive industry - would likewise be impossible to sustain.

The factors that permit the existing small private contractor operators to pay their employees less than the FAA also demonstrate the reason that a privatized ATC organization would not, and could not benefit from those same cost savings. First (1), though individual contractors are paying less than the FAA, the per-employee cost to the government is actually higher. Half the employees of these private ATC companies are retired FAA controllers who are drawing government pensions.²⁸ Because the FAA has a mandatory retirement age of 56 to which the FCT program is not subject, the government is effectively creating and subsidizing a low-cost artificial employee

²⁸ See FCT Newsletter

pool for the private sector. This is not a cost containment strategy. It is a cost shifting strategy. To the extent that it relies on pensions to make the private compensation attractive, it essentially shifts the costs from the FAA as an agency to the rest of the federal government as a pension provider. To the extent that the Department of Transportation (DOT) claims cost savings, they are a manufactured accounting mirage. More importantly, these savings only work at the small scale of the contract tower program. Once the FAA attempts to scale up to the level of the entire ATC organization—without a FAA to employ and then retire controllers, there can be no wage subsidy effect via pensions.

Second (2), the FAA paid for training its retired controllers who then retired to work in private ATC provision companies. Retired FAA controllers currently constitute about half of the labor pool for the private ATC providers. These pre-trained controllers required less intensive training upon re-employment with the private providers. As with the wage subsidy, the training subsidy effect would no longer exist once there was no longer an FAA to artificially provide a pool of pre-trained, employable air-traffic controllers. The second largest labor pool segment for the existing private ATC providers are military-trained controllers who work with private providers while they wait for an FAA control spot to open up. As with retired FAA controllers, the private providers benefit from an indirect training subsidy, this time from the military. This training subsidy does not necessarily disappear with ATC privatization. However, the subsidy also does not benefit a private ATC organization anymore than a public one. Furthermore, one can argue that the transaction costs involved in having two government organizations (the military and the FAA) work together to determine training standards and airspace coverage, is far less than it would be if the military had to negotiate with a privatized ATC organization.

Third (3), although private ATC provision companies are currently finding a labor pool that will accept the lower compensation they offer²⁹, the statistical evidence suggests

²⁹ It should be noted that although the starting wage for private controllers closely approximates the starting wage for FAA employed controllers, the total compensation is less due to government benefit and pension packages, and the lack of experience or loyalty-based wage increases in the private sector.

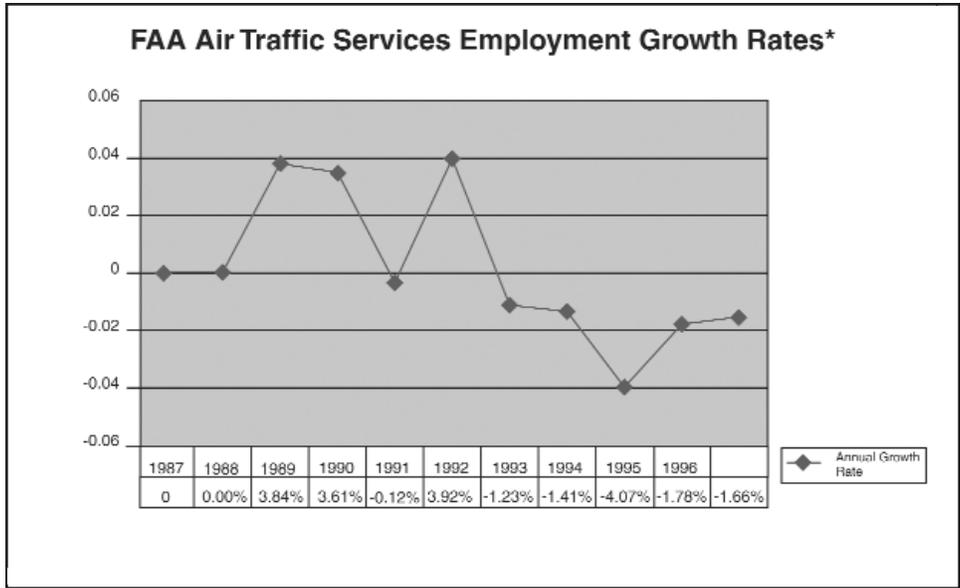
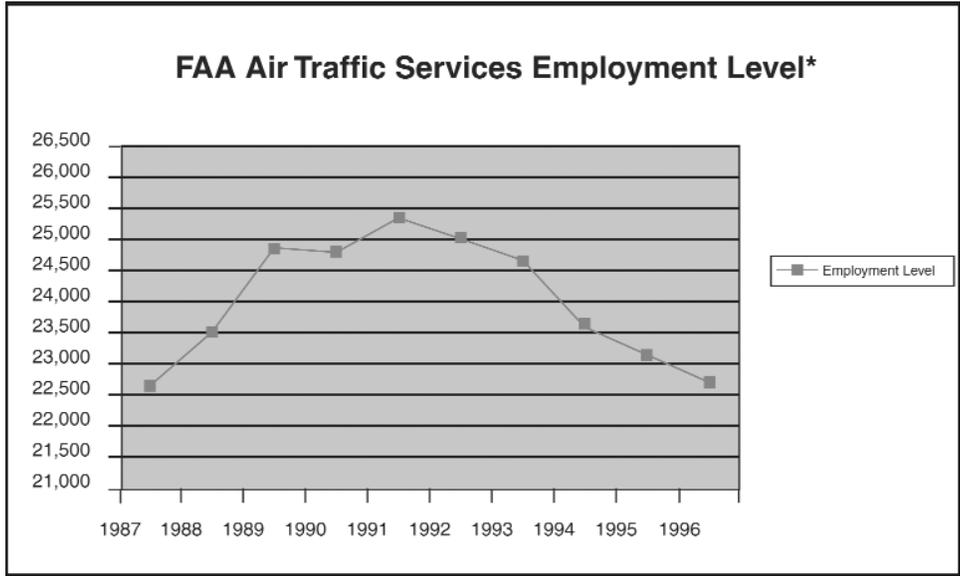
that this trend can not continue. If the share of ATC operations provided by the private sector increases, the pool of labor willing and able to work for the lower compensation level (than the prevailing FAA level) will decrease proportionately, especially if congress agrees to stand behind the FAA's existing minimum controller employment level negotiated with the National Air Traffic Controllers Association (NATCA).³⁰ If the private ATC providers expand their share of the ATC market, there will definitely be upward wage pressure in the private market. A totally private market will most certainly need to provide approximately the same level of compensation that controllers currently receive. This is true for two reasons: First, failure to provide approximately equal wages will put a newly privatized ATC organization on a collision course with organized labor, and will therefore face a huge increase in transactions costs negotiating with the union.³¹ Secondly, the existing labor pool has been contracting over the past several years, making wages highly sticky in the downward direction. The following graphs derived from FAA's internal employment statistics (1997), demonstrate that the absolute number of people employed in ATC has declined since its peak in 1991, and that ATC employment has exhibited continuous negative growth since 1993.

In a market tightened continuously for several years, reserve labor tends to leave the occupation for alternative opportunities, and it is unlikely, therefore, that a privatized ATC organization could force the compensation package value down on the existing labor pool. In general, in fields employing highly skilled labor, it is the forces of supply and demand, and not the fact of public or private sector provision that determines the size of the labor pool and the effective rates of compensation.

The fourth (4) reason that we can not assume a privatized ATC organization could provide lower cost labor than the FAA, is that although current private ATC providers are paying their controllers less, on average, than the FAA, those employees are actually costing the government more, per-head, than the FAA's own employees due to the various wage subsidy effects. The current savings per contract results from the fact that

³⁰ As a part of a Collective Bargaining Agreement, the FAA has agreed to minimum levels of staffing, regardless of increases in the percentage of operations that are contracted out.

³¹ One can turn either to the Canadian case, or the Australian case, where strikes have caused major disruption to continuing service, to witness the veracity of this statement.



*Air Traffic Services includes ATC workers and other ATC-related employees. FAA Administrator's Fact Book.

the contractors use drastically fewer controllers per tower. When assessed per-head, contract employees cost the government more than FAA-provided controllers. Private ATC providers are primarily contracted to deal with labor, the capital equipment is still owned and serviced by the FAA. So, although the private controllers receive lower compensation than FAA controllers, the profit requirement of private operators appears to cover the difference while the level of service being provided cannot be

considered equivalent.

The evidence from current privatization efforts demonstrates that though private operators can provide lower compensation to their employees, a wholly privatized ATC system could not benefit from lower labor costs than those faced by the current public system.

7.0 Conclusions

Reorganization of the FAA is not necessarily wrong, but the process as currently advocated has been demonstrated to fail elsewhere. Privatization proposals for ATC put the cart before the horse. Privatization advocates propose a solution, but never exactly specify a problem. To the extent that they do identify a problem such as variable public funding for new investments, they fail to compare and contrast the alternative solutions. Instead they use the problem to strengthen the case for their preferred solution - privatization. That is not surprising because the drive for privatization stems from a complex set of motives, the least of which appears to be more reliable or efficient air travel performance. The privatization effort is driven by concerns about controlling the revenues to be invested in the ATC system. The case for privatization as an elixir for funding problems, or technological improvement is then only made by inference. However the main reason for reorganization should be enhanced performance. If that is the case then the place to start is inside the FAA, not outside. Successful reorganization processes cannot be imposed from the outside. They need "buy in" from both management and labor. There is a strong record of success whenever labor and management work together to reform an organization. The FAA, though it does not have a history of good relations in this regard, could certainly change with wise leadership.

Reorganization cannot be considered apart from the larger role that air travel plays in the nation's transportation system. Moving to an independent, fee-driven agency creates one more political force in opposition to the badly needed, more comprehensive, planning that might integrate travel modes to accomplish a national transportation mission, such as enhanced rail travel as a substitute in some corridors. In a more gen-

32

eral sense, any improvement in air transportation will only come from a multifaceted effort involving both demand and supply side innovations. A focus on privatization detracts from this more comprehensive solution. It is now time to seriously rethink the entire question of the national air transport system within the context of an overall review of air travel safety and security. We must look at the range of alternatives to address improved and secure air travel in the context of national travel in general.

