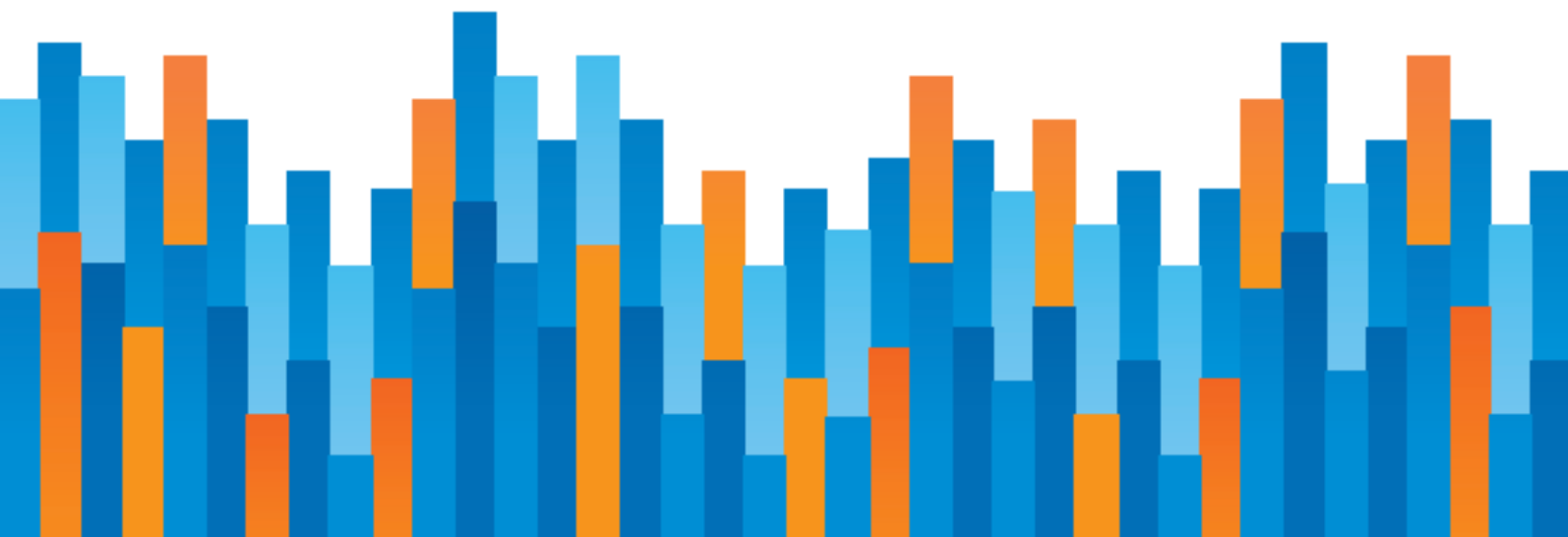




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AIR TRAFFIC CONTROL AS A PUBLIC UTILITY

by Robert W. Poole, Jr.
June 2023





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EXECUTIVE SUMMARY

This report provides an overview of the case for changing the way air traffic control is provided in the United States. While this country still has the world's largest air traffic control system, it is no longer the world's most advanced. Over the past three decades, more than 60 developed countries have converted their ATC systems from tax-funded government agencies to some form of public utility. These countries include Australia, Canada, Germany, Italy, New Zealand, and the United Kingdom.

Research papers and several book-length studies find that the utility model, in which the ATC provider is paid directly by its customers and is able to issue long-term revenue bonds for large-scale facility and equipment modernization, works better than tax-supported systems operated as government agencies.

This idea has been proposed many times in the United States, dating back to the 1970s. The Clinton administration made several large-scale attempts that led to only minor reforms in how the Federal Aviation Administration operates the ATC system. The FAA attempted funding reform during the George W. Bush administration but was unsuccessful.

A much larger effort began during the Obama administration and continued in the Trump administration, driven largely by the business community and various aviation stakeholder groups. It led to the House Transportation & Infrastructure Committee twice approving enabling legislation for an ATC utility corporation, but neither bill reached the House floor.

Recent air traffic problems—the NOTAM fiasco, a spate of close-call runway incursions, and FAA’s inability to implement digital/remote control towers as ATC utilities in other countries are doing—have raised new interest in ATC reform in this year when FAA must be reauthorized.

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PART 1

INTRODUCTION

Air traffic control (ATC) is part of the infrastructure needed for air travel, along with airports. ATC requires facilities, operators, technology, and procedures, all of which must be vetted for safety on an ongoing basis. For most of the 20th century, ATC was operated as part of each national government's transportation agency. This began to change in 1987 when New Zealand separated its ATC system from the transport ministry and incorporated it as a public utility corporation, with the government as its sole shareholder. From that point forward, aircraft operators paid New Zealand's existing ATC fees to Airways Corporation of New Zealand, rather than to the government, which made Airways self-supporting like most other utilities.

The United States actually started out with a private utility model for ATC: a not-for-profit user co-operative set up by the fledgling airlines in 1929. The Commerce Department took over this function in 1936, and it has remained in the federal government ever since. Yet since 1987, more than 60 other countries have followed New Zealand's lead and "corporatized" their ATC systems, converting them into user-funded utilities.

This study reviews the history of the U.S. ATC system, discusses the problems that have been well-documented by external audit agencies and policy researchers, summarizes the global move toward ATC utilities, reviews the changes resulting from this kind of reform, and then summarizes four decades of attempts to convert the U.S. system to a customer-funded utility. It concludes with examining lessons learned from these efforts, leading to progress on what is still a promising idea, on which the United States is now an outlier.

PART 2

THE EVOLUTION OF U.S. AIR TRAFFIC CONTROL

Surface transportation vehicles operate on physical infrastructure, such as rails, roadways, or waterways, and various traffic control systems seek to keep them from colliding with one another. For aircraft, the airspace is three-dimensional, so it takes a combination of communications, navigation, and surveillance systems to keep track of where planes are and to keep them safely separated. This is the task of the air traffic control (ATC) system.

Historically, ATC began with air-ground radio communications between airline dispatchers and pilots, supplemented by lighted beacons along various defined air routes. Lighted beacons were later replaced by omnidirectional radio beacons, and instrument landing systems (ILSs) were installed at airports to guide planes to a safer landing. Radar, developed during World War II, enabled “controllers” on the ground to see where planes are during their flights. This basic system was in place by the early 1950s when airlines were becoming commercially viable businesses.

Organizationally, the earliest U.S. ATC system was developed by Aeronautical Radio, Inc. (ARINC), a nonprofit co-op set up by the extant airlines in 1929.¹ ARINC set up the first two staffed ATC facilities in 1935–1936 to serve the air route linking Newark, Cleveland, and

¹ Paul Goldsborough, “A History of Aeronautical Radio, Inc. from 1929 to 1942,” ARINC, 1951, unpublished. (Accessed at ARINC headquarters in 1977 by this author.)

Chicago. In 1936, in the depths of the Depression, the Bureau of Air Commerce (in the Department of Commerce) took over this service from ARINC, relieving the struggling airlines of this expense.

In 1938 Congress converted the Bureau of Air Commerce into the Civil Aeronautics Authority. Its duties included not only developing and operating the ATC system but also issuing pilots' licenses and regulating and subsidizing the young airline industry. In 1940, the CAA was split into two agencies, the Civil Aeronautics Board (CAB) for economic regulation and subsidy, and the Civil Aviation Authority (CAA), responsible for air safety regulation and operating the ATC system. Both agencies were funded out of general federal tax revenues.



In 1958 the CAA became the Federal Aviation Administration (FAA), which remained an independent agency until 1967, when it was folded into the newly created U.S. Department of Transportation (DOT).



In 1958 the CAA became the Federal Aviation Administration (FAA), which remained an independent agency until 1967, when it was folded into the newly created U.S. Department of Transportation (DOT). In 1970 Congress authorized various aviation excise taxes and a new Airports & Airways Trust Fund, from which the new tax revenues could be allocated by Congress to airports and air traffic control improvements. Thereafter, aviation user tax revenue has funded the majority of FAA's budget.

Organizationally, one branch of FAA handled operation of the ATC system, with a different branch responsible for ATC facilities and equipment. By the 1960s, FAA operated four types of staffed facilities:

1. Control towers, located at airports, to control landings and take-offs;
2. Terminal radar approach control facilities (TRACONS), to handle arrivals and departures between airports and high-altitude airspace;
3. Air route traffic control centers (Centers), to manage large blocks of high-altitude airspace across the country; and,

4. Flight Service Stations (FSS), to assist pilots of small private planes (known as general aviation) with filing flight plans, obtaining weather forecasts, and other services.

These functions remain the same today, but with three organizational changes. First, in the aftermath of the 1981 strike by air traffic controllers (nearly all of whom were fired), the Reagan administration launched a federal contract tower program in which small (non-radar) control towers are put out to bid, with operating contracts awarded to commercial control-tower companies. (As of 2022, some 262 control towers are operated as federal contract towers, accounting for 49% of all U.S. towers.) Second, in 2005, FAA contracted out the operation of FSSs under which the winning bidder was authorized to consolidate their numbers (from 61 to 5) and significantly automate their operation.² Third, in 2003, following a Clinton executive order and congressional authorization, the FAA brought together the ATC operations and the ATC facilities and equipment branches into a consolidated entity called the Air Traffic Organization (ATO).



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Several key ATC technology upgrades took place in the post-war decades. In the 1950s, following two serious mid-air collisions of airliners, radar surveillance became mandatory in all domestic airspace used by airlines and other high-performance aircraft. In the 1960s, FAA installed mainframe computers in each of the 20 domestic high-altitude Centers to manage real-time flight data. Also in that decade, all planes in controlled airspace were required to install transponders, which are interrogated by a separate kind of radar (secondary surveillance). Whereas the original (primary) radar simply shows a blip on the

² DOT Office of Inspector General, "FAA Achieved Most of the Anticipated Cost Savings from Contracting Out Flight Service Stations, But Needs to Determine the Future Direction of the Program," AV-2017-015, U.S. Department of Transportation, 2016.

controller's screen, the transponder provides the aircraft ID and altitude. In the 1980s, a collision-avoidance system called TCAS became mandatory for all passenger aircraft, and by 1991 for all jet and turboprop aircraft with 10 or more seats.



It became clear as early as the Reagan administration that it was not necessary to have 20 separate Centers, each located physically beneath a geographical region of airspace.



It became clear as early as the Reagan administration that it was not necessary to have 20 separate Centers, each located physically beneath a geographical region of airspace. FAA Administrator Lynn Helms' 1981 ATC modernization plan called for significantly reducing their number, but Congress took no action to authorize the spending that would have been needed for consolidation. In more-recent decades, text-messaging has been developed to provide more-accurate messages between controllers and pilots—but as of 2022 is still not in routine use in most of U.S. airspace. Other technology innovations include using a single GPS installation to replace aging instrument landing systems (ILSs) at the end of each runway, but FAA has not opted to install this newer technology. A number of other countries are replacing staffed control tower structures with a set of cameras and other instruments monitored by controllers in a less-costly ground-level facility, but FAA has not embraced this lower-cost “remote tower” concept. A group of overseas ATC providers, working with satellite provider Iridium, has invested in a global satellite-based ATC surveillance system (Aireon) that uses GPS to enable radar-like separation of planes over the 70% of earth's surface where there is no radar (oceans, polar regions, mountains). Service began in 2017, but as of early 2023, FAA has not subscribed, despite being responsible for ATC service in large amounts of oceanic airspace.

PART 3

PROBLEMS WITH U.S. AIR TRAFFIC CONTROL

Over several decades, analysts at the federal Government Accountability Office (GAO) and the DOT's Office of Inspector General have documented numerous ongoing problems with the FAA's air traffic system. These problems have also been documented in reports by federal commissions, such as the Baliles Commission³ and the Mineta Commission,⁴ as well as in reports from think tanks such as the Brookings Institution,⁵ Heritage Foundation,⁶ and Reason Foundation.⁷ Broadly speaking, these problems can be separated into three categories: funding, governance, and organizational culture. Each of these has several dimensions.

³ Gerald Baliles et al., *Final Report: National Commission to Ensure a Strong and Competitive Airline Industry*, Government Printing Office, 1993.

⁴ Norman Y. Mineta et al., *Avoiding Gridlock & Reducing the Accident Rate*, Office of the Secretary, U.S. Department of Transportation, 1997.

⁵ Dorothy Robyn, "Air Support: Creating a Safer and More Reliable Air Traffic Control System," The Brookings Institution, 2008.

⁶ Robert W. Poole, Jr., "The Urgent Need to Reform the FAA's Air Traffic Control System," The Heritage Foundation, 2007.

⁷ Robert W. Poole, Jr. and Viggo Butler, "How to Commercialize Air Traffic Control," Reason Foundation, 2001.

3.1

ATC FUNDING PROBLEMS

The funding problem has several dimensions. The first is reliance on a set of aviation excise taxes that bear no direct relationship to either the cost of ATC provision or individual aircraft use of such services. As economist Dorothy Robyn pointed out in a Brookings Institution policy paper,⁸ when (for example) airline passengers are taxed to provide the largest portion of the funds that support ATC, airlines themselves have less incentive to be concerned about high costs and low productivity of the ATC system. And the miniscule tax revenue generated by business jets bears very little relationship to their extensive use of ATC services. As Robyn pointed out in this study:

The current system of tax financing encourages commercial airlines to overuse scarce air traffic control capacity because they pay for that capacity indirectly through passenger taxes, rather than directly for each use. Moreover, because the taxes collected are linked to the number of passengers (and the price of their tickets), a small aircraft contributes significantly less than a large one, even though it costs the air traffic control system about the same amount to serve. . . . In short, because they impose a disproportionate burden on large aircraft, passenger taxes have the perverse effect of encouraging airlines to use smaller planes.

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The FAA budget is also subject to problems affecting the entire government, such as the 2013 federal budget sequester, whose automatic spending reductions forced FAA to furlough controllers and threatened to shut down most of the contract towers for the second half of the fiscal year.

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A second aspect of the funding problem is the FAA's reliance on uncertain annual appropriations from Congress. The revenues from aviation excise taxes (on passenger tickets, cargo waybills, fuel, and several other minor sources) are accounted for in the

⁸ Robyn, “Air Support.”

Airports and Airways Trust Fund. FAA makes an annual budget request to Congress, but that request needs to be cleared by the White House Office of Management & Budget (OMB), which generally focuses on limiting federal spending. So FAA may well have needs that it knows OMB will not approve; hence, Congress may start with an incorrect view of ATC needs.

The FAA budget is also subject to problems affecting the entire government, such as the 2013 federal budget sequester, whose automatic spending reductions forced FAA to furlough controllers and threatened to shut down most of the contract towers for the second half of the fiscal year. The aviation excise taxes have to be reauthorized every three, four, or five years (depending on the length of the previous reauthorization Congress enacted). Usually, the reauthorizations are delayed, sometimes for several years, and in one or two cases the authority to continue collecting the aviation taxes has lapsed altogether. This funding uncertainty plays havoc with long-term modernization planning.



... it makes sense for multi-billion-dollar technology and facility modernization to be financed, rather than having to be paid for out of (uncertain) annual appropriations.



A third aspect of the funding problem is FAA's inability to issue long-term bonds to finance large capital improvements (such as replacing 20 aging Centers with a small number of consolidated Centers). The U.S. Treasury is generally opposed to allowing federal entities to issue bonds, and FAA has only once sought to overcome this de-facto policy. Yet it makes sense for multi-billion-dollar technology and facility modernization to be financed, rather than having to be paid for out of (uncertain) annual appropriations. Other transportation infrastructure is often financed via revenue bonds—toll roads, railroads, pipelines, seaports, etc. This problem is not unique to FAA in the federal government; there is no overall federal capital budget, hence, many other agencies are also not allowed to finance major capital projects.

3.2

ATC GOVERNANCE

The second ATC problem is governance. Put simply, the FAA has far too many masters. The Air Traffic Organization itself reports directly to the FAA administrator, who is the aviation safety regulator. This means that while FAA regulates airlines, pilots, mechanics, aircraft and engine manufacturers, airports, repair stations, etc. at arm's length, when it comes to ATC the practice is self-regulation. This was officially judged to be a conflict of interest by the International Civil Aviation Organization (ICAO), which in 2001 called for functional and organizational separation between aviation safety regulation and the provision of services such as airports and air traffic control.⁹ ICAO is a United Nations affiliate that governments look to for guidance on international aviation policies.



For FAA's budget and programs to be approved by Congress, they must be reviewed, questioned, and modified by three separate kinds of committee in each house.



The FAA administrator reports to the secretary of transportation, and as noted previously, all budgets from all federal entities must be submitted in advance to OMB review before they can be transmitted to Congress as funding requests. FAA is also subject to outside audits and critiques by GAO and the DOT's own Inspector General. If these oversight bodies were not enough to keep senior FAA and DOT officials busy, there is also congressional oversight. For FAA's budget and programs to be approved by Congress, they must be reviewed, questioned, and modified by three separate kinds of committee in each house. First, an authorizing committee holds hearings and decides what amounts of funds it will approve for the coming year's (or years') budget. But actual spending for each fiscal year is decided by the appropriations committee in each house, which may well disagree with the authorizing committee's decisions. And if the proposed spending is more than will be generated by current aviation excise taxes, the relevant taxation committee (Ways & Means in the House) must also weigh in to adjust tax rates. When each house has completed this

⁹ International Civil Aviation Organization, *Safety Oversight Manual*, Doc. 9734, Part A, Paragraph 2.4.9, 2001.

process, the two resulting FAA bills almost always differ, so the differences must be worked out in a conference committee.

All of the above offers members of Congress opportunities to micro-manage the FAA and hence ATC, such as forbidding a proposed consolidation of facilities (jobs in members' districts), requiring the purchase of certain equipment not requested by FAA, and numerous other changes that may or may not reflect the judgment of aviation experts or ATC system customers.

3.3

ATC ORGANIZATIONAL CULTURE

The third problem is the ATO's organizational culture. As noted in Part 2, despite the FAA operating the world's largest ATC system by far, it lags well behind many other developed countries in applying new technology and management methods. In a policy study commissioned by the Hudson Institute's Initiative on Future Innovation, the author of this study concluded that the ATO has a risk-averse and status-quo-oriented culture.¹⁰ (Risk aversion is appropriate in safety regulation, but its proper role is in overseeing, at arm's-length, the various parts of aviation, such as airports, airlines, manufacturers, and air traffic control.) The report used case studies of seven technology and organizational innovations that ATC providers were implementing in other countries:

- Digital communications between pilots and controllers;
- Replacing ILS with GPS-based landing systems (GBAS);
- Using GPS technology for surveillance (ADS-B);
- Performance-based navigation (PBN);
- Real-time weather data;
- Remote towers; and,
- Large-scale facility consolidation.

While FAA has made some progress with some of these innovations, even in those it is years behind ATC providers in other developed countries. The study identified five factors that may have led to this status-quo orientation, as follows:

¹⁰ Robert W. Poole, Jr., "Organization and Innovation in Air Traffic Control," The Hudson Institute, 2014.

1. Self-identity as a safety agency, rather than as a technology-enabled service provider;
2. Loss of technical expertise, due to civil service constraints and other factors;
3. Loss of management expertise, for the same reasons;
4. Excessive oversight (as discussed earlier); and,
5. Lack of customer focus—i.e., focusing on pleasing Congress rather than those who use its ATC services.

A set of two dozen peer reviewers with extensive aviation experience examined the hypothesis that FAA's risk-averse culture likely stemmed from the above factors, and judged it valid.

PART 4

MODELS FROM OTHER COUNTRIES

In 1987 the reformist government of New Zealand separated its ATC system from its transport ministry and converted it to a government corporation, expected to support itself via charges for its services. At that time, nearly all national governments (except Canada and the United States) charged aircraft operators ATC fees generally based on aircraft gross weight and distance flown. Those charges are based on worldwide airport and ATC charging principles promulgated by ICAO.¹¹ By converting its ATC function to a utility, New Zealand made the ATC charges payable to the new Airways New Zealand corporation, rather than to the government.

New Zealand's reform created a more business-like approach to the provision of ATC services. Freed of government departmental constraints, Airways could manage its own personnel, procure new systems free of government procurement rules, and potentially issue revenue bonds backed by its stream of ATC fee revenue. In effect, New Zealand converted a government agency into a public utility company. The reform succeeded, and by 1993 four other governments (Austria, Germany, Netherlands, and South Africa) had followed suit, with a number of others, including Canada, planning to do likewise.

¹¹ International Civil Aviation Organization, "ICAO's Policies on Charges for Airports and Air Navigation Services, Doc. 9082, 2012.



In effect, New Zealand converted a government agency into a public utility company. The reform succeeded....



By 1996, with the number of corporatized ATC providers in the low double digits, Airways NZ and the other pioneers created an international organization to represent such companies, the Civil Air Navigation Services Organization (CANSO). By 2017, CANSO had a total of 88 full members (ATC providers) and 91 associate members (aerospace companies with an interest in ATC). Of the 88 full members, 62 are self-supporting utilities, with the balance being more traditional government agencies (like the FAA's ATO) that provide ATC in those jurisdictions.¹² The 62 utilities provide ATC services for 83 countries.

Air traffic control at a national scale is a de facto (or de jure) utility monopoly. In principle, there are three ways to protect airspace customers from monopoly pricing. These are the same three alternatives for dealing with any utility monopoly:

- Government ownership and operation, with a presumption that government would not exploit its utility customers;
- Investor-owned utility, with external rate regulation;
- Nonprofit user co-op, in which the governing body represents the customers of the utility's services, and therefore has an inherent interest in the lowest prices consistent with good service.

In air traffic control's three-decade history of conversion to utilities, all three models have appeared. By far the most common is a government corporation. There is one current example of the nonprofit user co-op: Nav Canada, which began operations in 1996. And there are two examples of for-profit, partially investor-owned ATC utilities: Italy's ENAV and Britain's NATS. In both of those cases, the government holds approximately one-half of the shares. Another form of investor ownership can be seen in U.S. and European examples of investor-owned contract firms operating control towers.

¹² Marc Scribner, "Annual Privatization Report: Aviation," Reason Foundation, May 2023.

It's also important to note the difference in meaning of the term "government corporation" in the United States and in other countries. There are many federal government corporations, including Amtrak, the Overseas Private Investment Corporation (OPIC), the Export-Import Bank, and the U.S. Postal Service.¹³ Most of these corporations receive some degree of federal funding, which means they are subject to micro-management by Congress as well as numerous regulatory requirements. They also generally have politically appointed boards. By contrast, government corporations in most of Europe, Australia, New Zealand, and elsewhere are entities that are incorporated under commercial corporation law, usually with government as the sole shareholder. In its shareholder role (usually filled by a transport or treasury minister), the government can protect the public interest as well as the well-being of the corporation's customers.

¹³ General Accounting Office, "Profiles of Existing Government Corporations," GAO/GGD-96-14, 1995.

PART 5

KEY FEATURES OF ATC UTILITIES

Five features are common to nearly all the ATC providers that have been converted to utility companies. They directly address the kinds of underlying problems afflicting the FAA's Air Traffic Organization, which were also present in most of these overseas ATC providers, prior to reform and restructuring.

5.1

SEPARATION OF SAFETY REGULATION FROM ATC OPERATIONS

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potentially treats that one segment of aviation (ATC) differently from all the others—airports, airlines, manufacturers, pilots, mechanics, etc.—which are regulated at arm’s-length.

One U.S. example is the difference in FAA’s response to pilot fatigue and controller fatigue. Former FAA Administrator Langhorne Bond¹⁴ pointed out that FAA treated pilot fatigue in two 2009 instances (a Colgan Air crash and a Northwest airliner overflying Minneapolis/St. Paul Airport) far more harshly and more decisively than it treated controller fatigue in the 2007 Comair crash at Lexington, Kentucky. Another example in the same article concerned controversies over issues such as ATC facility consolidation, in which opponents often raise safety concerns. In such cases, “because the ATO is embedded within it, [FAA] is not in a clear-cut position to act as the neutral safety arbitrator.”

In 2007, eight former senior FAA officials and former CAB Chairman Alfred Kahn issued a public statement that,

As the ATO moves forward to implement the dramatic changes in technology and procedures inherent in the NextGen concept . . . many decisions about increasing capacity by reducing aircraft spacing have important safety consequences and should be arrived at in a transparent manner. Arm’s length separation cannot be accomplished as long as ATO operations and aviation safety regulation remain in the same governmental unit.¹⁵

Clinton Oster, who served as research director of the Aviation Safety Commission in 1987-1988, elaborated on this point in a book co-authored with John S. Strong. They wrote:

Trade-offs between safety and capacity would remain and be just as technically difficult [after separation of regulation from ATC provision] but the regulatory tensions that are now internal to one organization would become external Decisions that are now made internally within FAA would become external in a manner similar to safety regulatory decisions in other aviation sectors. The debate about trade-offs between safety and capacity would be more public and open to outside scrutiny. . . . The regulatory organization would

¹⁴ Langhorne Bond and Robert W. Poole, Jr., “Time to Separate the ATO from FAA Safety Regulation,” *The Journal of Air Traffic Control*, Spring 2010.

¹⁵ Former DOT Officials, “The Need for Fundamental Reform of Air Traffic Control,” Reason Foundation. 2007.

have to consider, specify, and defend the criteria it used for selecting one standard over another, and for accepting or rejecting any proposed changes [by the ATC provider].¹⁶

As noted previously, since 2001 ICAO has urged governments to separate the provision of air safety regulation from the provision of air traffic control, and that all ATC corporations comply with this recommendation.

5.2 SELF-FUNDING FROM FEES AND CHARGES

As noted previously, nearly all governments charge fees for using their airspace, and nearly all follow ICAO charging principles, which call for enroute and overflight charges to be paid by aircraft operators based on the plane's gross weight and distance flown, and for terminal-area charges based only on gross weight. A 2005 review of ICAO data by this author found that, out of 180 countries listed in an ICAO document on ATC charging, only 21 didn't charge users for ATC.¹⁷ Apart from the United States, the non-chargers were all island mini-states (Bahamas, Comoros, Samoa) or very poor developing countries (Gambia, Namibia, Somalia).

Corporatization changes the recipient of the ATC user-fee revenues from the national government to the ATC corporation. This converts the ATC system into a customer-supported utility. The change to self-support has several important implications.

Corporatization changes the recipient of the ATC user-fee revenues from the national government to the ATC corporation. This converts the ATC system into a customer-supported utility.

¹⁶ Clinton V. Oster and John S. Strong, *Managing the Skies: Public Policy, Organization, and Financing of Air Traffic Management*, Ashgate Publishing, 2007.

¹⁷ Vaughn Cordle and Robert W. Poole, Jr., "Resolving the Crisis in Air Traffic Control Funding," Reason Foundation, 2005.

First, it creates a customer/provider relationship between the ATC corporation and those who use its services. When an ATC provider receives its revenue from the national government, management's focus invariably is on pleasing the government (which, in practice, may mean some combination of the transport ministry and the national legislative body). By contrast, when the revenues are paid directly to the ATC corporation, management is focused on satisfying those paying customers. Over time, this can be expected to generate increased attention to improving the productivity of ATC services via some combination of investing in better technology, gaining regulatory approval for changes in ATC flight procedures, and potentially reforming labor practices.

One example of the latter is AENA, the ATC provider in Spain. Prior to corporatization, it had the highest costs of any developed-country provider in Europe, due in significant part to labor practices that included among the lowest scheduled controller hours worked per year, massive overtime expenses, and among the highest rates of pay. Post-corporatization reforms included shifting smaller control towers to contract operators, increasing scheduled hours to reduce overtime hours, and moderating rates of pay. AENA is no longer the most costly ATC provider in Europe.¹⁸



A second benefit of self-support via user-fee revenues is the potential to use long-term financing for major capital projects (such as large technology programs and facility consolidation).



A second benefit of self-support via user-fee revenues is the potential to use long-term financing for major capital projects (such as large technology programs and facility consolidation). Like other utilities, ATC is well-suited to using revenue bonds to finance such investments. Aviation is a growing field, and for the foreseeable future ATC will remain a monopoly. Those factors make ATC revenue bonds attractive to bond-buyers. Larger ATC corporations (such as Nav Canada and UK provider NATS) have had no trouble obtaining investment-grade credit ratings on their financing.

¹⁸ Robert W. Poole, Jr., "Spain's Control Tower Outsourcing Is Under Way," *ATC Reform News*, January 2012.

One concern raised in debates over corporatization is the alleged high cost of collecting ATC user fees. The good news for a government considering corporatization is that global ATC billing and collection services are available to handle this function, providing economies of scale that keep collection costs low. In Europe, the agency called Eurocontrol offers such a service via its Central Route Charging Office (CRCO). Its administrative costs are typically 0.5% of the amounts collected, and its recovery rate for 1996–1999 was 99.48%.¹⁹ CANSO (in cooperation with SITA) in 2014 began offering a system known as FlightYield, originally developed by Airways New Zealand. In 2015 COMSOFT began offering its CAB billing system. Many developing countries use a billing system offered by IATA called Enhancement & Financing Services, which has been in operation since 1992.²⁰

5.3

ELIMINATION OF POLITICAL MICROMANAGEMENT

Micromanagement can arise from at least two different sources—the executive branch of government and the legislative branch. Corporatization generally eliminates the latter by essentially removing the ATC provider from the government’s budget, which is the primary means by which legislators try to intervene in what should be management decisions by the ATC provider. The former might still be a problem, to the extent that the transport or finance ministry in most cases will have some degree of oversight of the ATC corporation, especially its rates and charges. In the 30-plus years of corporatization experience, this has not emerged as a significant problem.

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In the United States, examples of political decisions that override ATO management decisions are numerous.

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In the United States, examples of political decisions that override ATO management decisions are numerous. One example is the case of “zombie towers.” An internal FAA study from 2010–2011 identified 102 control towers that had so few flights at night that—per long-standing criteria—they should shut down at night, but none had been. Bloomberg

¹⁹ Oster and Strong, *Managing the Skies*.

²⁰ Robert W. Poole, Jr., “Another ATC Billing System Enters the Market,” *ATC Reform News*, March 2015.

reporter Alan Levin found at least 26 cases where members of Congress “pressured [FAA] regarding controller staffing issues” at such towers.²¹ Since its de-facto customer is Congress, FAA chose not to rock the boat. There are many other examples, including a number of proposed consolidations of TRACONs and towers that have been blocked by congressional action or threats of action.

5.4

STREAMLINED PROCUREMENT OF NEW TECHNOLOGY

The FAA has a long track record, documented by GAO and Inspector General reports, of developing new systems that are delivered months or years late, with significant cost overruns, and sometimes with less than the promised capabilities. These problems stem directly from the agency’s nature as a government agency funded via annual appropriations, unable to do long-term financing, and constrained by civil service regulations and pay scales. In prior decades, Congress legislated reforms of both procurement and personnel at FAA, but the problems persist. By contrast, the record of large ATC providers that have been corporatized is considerably better.

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Despite the economies of scale inherent in ATC, the smaller Nav Canada is significantly more cost-effective. The cost per flight hour (domestic) in controlled airspace in 2016 was \$453 for FAA’s ATO but only \$335 for Nav Canada.

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Uncertain funding and inability to issue bonds are only part of the problem. More fundamental is the bureaucratic nature of FAA’s ATO and its need to satisfy the government rather than its aviation customers. The lack of a direct customer/provider relationship means there is very little focus on reducing unit costs or increasing productivity. The FAA’s cost per unit of ATC service increased by 66% between 1997 and 2016.²² During that same period, corporatized Nav Canada’s unit cost decreased. Despite the economies of scale

²¹ Robert W. Poole, Jr., “The Lessons of ‘Zombie Towers,’” *ATC Reform News*, November/December 2012

²² Dorothy Robyn, “The Need to Reform FAA and Air Traffic Control to Build a 21st Century Aviation System for America,” Testimony Before the House Committee on Transportation & Infrastructure, May 2017.

inherent in ATC, the smaller Nav Canada is significantly more cost-effective. The cost per flight hour (domestic) in controlled airspace in 2016 was \$453 for FAA's ATO but only \$335 for Nav Canada.²³

Civil service pay scales and bureaucratic constraints make it difficult for a provider like the ATO to attract and retain highly-skilled technical and managerial people. This leads, over time, to insufficient internal knowledge about new technology and how to define what the ATC system needs. In turn, that leads to aerospace contractors gaining a dominant role via contracts under which they “define” in detail what a new system should do, and are then in the best position to win the contract to produce it. On average, the ATO program managers tend to be less capable than is desirable to drive hard bargains and hold the contractors accountable for delivering systems on time and on-budget. The superior performance of advanced technology implementation in corporatized ATC providers demonstrates the advantages of this model.

5.5 ENTREPRENEURIAL ORGANIZATIONAL CULTURE

This author documented, via seven case studies, that a less-cautious, more-entrepreneurial corporate culture is developing in ATC providers that have been corporatized.²⁴ That report found that:

- Digital communications between controllers and pilots, as of 2015, was years ahead of ATO's efforts in providers such as NATS and Nav Canada.
- Providers such as Germany's DFS and Airservices Australia have implemented GPS-based landing systems, while the ATO has not, and has no plans to.
- A group of corporatized providers, led by Nav Canada, created a company with satellite operator Iridium that launched a 66-satellite system, including payloads that began providing global radar-like surveillance as of 2017. The ATO has not subscribed to this service, despite being responsible for ATC in large portions of oceanic airspace where there is no radar coverage.
- The ATO has lagged behind a number of other ATC providers in making effective use of very precise Required Navigation Performance (RNP) procedures.

²³ CANSO, *Global Air Navigation Services Performance Report 2016*, Figure 4, Civil Air Navigation Services Organization, December 2016.

²⁴ Poole, “Organization and Innovation in Air Traffic Control.”

- ATC utilities are pioneering less-costly remote/digital towers in Europe and New Zealand; Congress finally provided a token amount of funding in 2018 for the ATO to begin exploring this, but the FAA has not certified a single remote tower as of 2023.
- ATC utilities in Australia, Germany, and the UK have accomplished large-scale consolidation of Centers, whereas the ATO has done nothing comparable.

PART 6

WHAT OTHER RESEARCH ON ATC UTILITIES HAS FOUND

The most detailed, quantitative study on the impact of converting ATC providers to utility corporations was carried out in 2005 by MBS Ottawa, with assistance from the School of Public Policy at George Mason University, the Maxwell School at Syracuse University, and the Centre for Research on Air & Space Law at McGill University.²⁵ The study identified key performance indicators (KPIs) and applied them to 10 ATC utility providers along with the ATO for comparison. The time period for comparison was from 1997 to 2004. Here is a brief summary of the results.

- **Safety:** Serious safety incidents per instrument flight movement showed a downward trend for most of the providers (though no comparable data were available for Switzerland's Skyguide or FAA's ATO).
- **Capital Spending (larger providers only):** The corporatized providers exhibited a downward trend, despite significant modernization; only the ATO showed an increasing trend of capital spending.

²⁵ MBS Ottawa, *Air Traffic Control Commercialization Policy: Has It Been Effective?* January 2006.

- **Unit Rate Charged to Aircraft Operators:** The general pattern was downward in inflation-adjusted terms, but with an uptrend for the ATO, NATS, and Nav Canada in the first years following the 2001 terrorist attacks.
- **Productivity:** As measured by cost per instrument flight movement, six of the commercialized providers showed a downward trend (between 5% and 15% over the time period), while three experienced an uptrend. The largest increase in unit cost, 23%, was reported by FAA's ATO.
- **Controller Pay, Including Overtime:** The ATO's payroll cost increased by 40% over this time period, compared with 20% for four providers and a flat trend for the others.
- **Reduced Overhead:** As measured by the ratio of all staff to controller staff, Airservices Australia and Nav Canada achieved significant reductions, decreasing that ratio by 30% and 20% respectively. One showed a slight increase, while the others—including the ATO—showed around a 5% decrease.
- **ATC-Related Delays (Minutes/Flight):** Figures from four providers in Europe showed modest decreases, but the ATO showed a significant increase; data were not available for the others.

There is a great deal more discussion and lessons learned in this important (though now somewhat dated) empirical study. One paragraph from the executive summary provides a useful overview of the findings:

The major finding is that commercialization models that provide the right balance of incentives have resulted in significant cost reductions, dramatic improvements in modernization, and major improvements in service quality, while improving safety. Commercialized [ATC providers] exhibit three main strengths—sensitivity to customer needs, agility in reaching a decision, and ability to carry it through. These characteristics have led to continuous improvements in efficiency, business discipline that delivers projects on schedule and on budget, and rapid deployment of modern technology to enhance service quality.”

Two book-length studies provide considerably more detail on the evolution of ATC corporations and deal with various policy questions. The longer of the two is the previously mentioned volume by Oster and Strong, *Managing the Skies*.²⁶ The second volume, by policy

²⁶ Oster & Strong, note 16.

analyst Rui Neiva, is more recent.²⁷ It is narrower and somewhat more technical than the other book, focusing more on regulatory impacts and the extent of efficiency improvements. It finds that rate-of-return regulation of [many] ATC providers in Europe has had the perverse effect of permitting rising costs to be passed along to customers, an outcome not seen in Canada, Australia, or New Zealand. Despite that caveat, Neiva concludes overall as follows:

Canada, Germany, and New Zealand, among others, have shown how commercialized systems are able to depart from the old ways. From government agencies used to serving their political overlords, they became independent entities that serve the interests of their customers, the airspace users, first. They are now also able to be self-sufficient financially, not requiring any taxpayer subsidies: a must in fiscally constrained times. Commercialization has created leaner, more-focused organizations that are able to adapt more swiftly to rapidly changing operational and technological environments.

²⁷ Rui Neiva, *Institutional Reform of Air Navigation Service Providers*, Edward Elgar Publishing, 2015.

PART 7

U.S. ATC REFORM EFFORTS

The history of efforts to corporatize the U.S. ATC system dates back to at least 1975. In that year, Glen A. Gilbert, popularly known as the “father of U.S. air traffic control” due to having been the first controller hired by the Bureau of Air Commerce in 1936, released a two-volume report, proposing to shift ATC from the FAA to a “Comsat-type corporation” funded half by ATC user fees and half by federal taxes.²⁸ That same year, the U.S. Special Air Services Advisory Group issued a report recommending that a study be conducted “to determine whether the air traffic system would be operated more efficiently with advanced technology as an independent public company.”²⁹

7.1

REAGAN ADMINISTRATION

In the immediate aftermath of the Reagan administration’s firing of all the controllers who refused to return to work after their 1981 strike, the White House invited this author to give a briefing to DOT Secretary Drew Lewis and FAA Administrator Lynn Helms on the potential of an ATC corporation to rebuild and modernize the system. Although Helms rejected that

²⁸ Glen A. Gilbert, *The United States Air Traffic Services Corporation*, Glen A. Gilbert Associates (2 volumes), 1975.

²⁹ US Air Safety Advisory Group, “Report to the Federal Aviation Administration,” Federal Aviation Administration, 1975.

approach, it led to the author presenting a paper on this subject at the 1982 annual meeting of the Transportation Research Board. The paper was subsequently published in TRB's journal, *Transportation Research Record*.³⁰ In 1985, the Air Transport Association released a paper calling for ATC to be removed from FAA and set up as a user-funded government corporation, the National Aviation Authority.³¹ TRB returned to the issue in 1990, creating a special committee to study policy changes to help the aviation system cope better with airline deregulation. Its report compared a separated ATC corporation and an FAA corporation, and judged the latter to be preferable, ignoring the conflict-of-interest problem.³²



In 1985, the Air Transport Association released a paper calling for ATC to be removed from FAA and set up as a user-funded government corporation, the National Aviation Authority.



7.2

CLINTON ADMINISTRATION

ATC reform moved to the front burner in the mid-1990s. In 1993, the Clinton administration's special committee on ensuring a competitive airline industry, headed by former Virginia Gov. Gerald Baliles, recommended corporatization of the ATC system.³³ At the same time, Vice President Gore's National Performance Review team had identified Airways New Zealand as its model for a self-supporting government ATC corporation. Its report led to a detailed study by the Office of the Secretary of Transportation. The resulting two-volume study laid out a detailed proposal to move the ATC function out of FAA and set it up as a self-supporting, nonprofit U.S. Air Traffic Services (USATS) corporation.³⁴ The

³⁰ Robert W. Poole, Jr., "Privatizing Air Traffic Control," *Transportation Research Record* No. 912, 1983. 1983

³¹ Air Transport Association, "Federal Corporation Approach to the Management and Funding of the Air Traffic Control System," September 1985.

³² Transportation Research Board, *Winds of Change: Domestic Air Transport Since Deregulation*, Special Report 230, 1991.

³³ Baliles et al., *Final Report*.

³⁴ Frank E. Kruesi et al., *Air Traffic Corporation Study*, Report of the Executive Oversight Committee to the Secretary of Transportation, U.S. Department of Transportation, May 1994.

Clinton administration's USATS would have been a government corporation, governed by a board of directors representing users of ATC services and USATS employees, with ATC fees paid only by commercial aviation. DOT Secretary Federico Peña and FAA Administrator David Hinson strongly supported enactment of legislation to set up the corporation, but there was not a critical mass of aviation stakeholder support, so the legislation never made it out of the House Aviation Subcommittee.

The Clinton administration made another reform attempt in 1997 by appointing the National Civil Aviation Review Commission, chaired by former Congressman Norm Mineta. Its report called for setting up a "performance-based organization" within FAA that would combine all FAA's ATC-related activities into a single unit, would charge ATC fees to commercial aviation only, and would be able to issue revenue bonds based on its user-fee revenue.³⁵ In the FAA reauthorization bill passed in April 2000, Congress authorized the creation of a chief operating officer for ATC, as called for in the Mineta Commission report, but ignored all the other ATC recommendations. So in December, President Clinton issued an executive order going further, directing FAA to create a performance-based organization for ATC within FAA (the ATO). But the order could not include any of the funding and financing changes urged by the Mineta Commission, which would have required legislation.

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In the FAA reauthorization bill passed in April 2000, Congress authorized the creation of a chief operating officer for ATC, as called for in the Mineta Commission report, but ignored all the other ATC recommendations.

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7.3

GEORGE W. BUSH ADMINISTRATION

During this Administration, the FAA began experiencing funding problems, due partly to reduced flight activity in the several years following the 2001 terrorist attacks, but also due

³⁵ Norman Y. Mineta et al., *Avoiding Gridlock and Reducing the Accident Rate*, Office of the Secretary, U.S. Department of Transportation, 1997.

to decreasing air fares, which meant lower ticket-tax revenues than had been projected. The Air Transport Association began talking about shifting from aviation excise taxes to ATC user fees, like the rest of the world. FAA Administrator Marion Blakey was interested, and in the years leading up to the 2007 reauthorization, the agency commissioned studies of the possible impact of ATC fees on various categories of aircraft users. The ATO itself did studies using data from the greatly improved FAA accounting system to identify possible cost savings. FAA also held a Trust Fund Forum in April 2005, getting pro and con inputs from various interest groups (pro from the airlines, but anti from general aviation groups AOPA and NBAA).

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The ATO itself did studies using data from the greatly improved FAA accounting system to identify possible cost savings.

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Instead of arguing for ICAO-type weight-distance fees, which give a break to smaller planes by including weight in the formula, the Air Transport Association seized on the user-fee idea as a way to level the playing field between airlines and business jets, which ATA saw as siphoning off a growing share of its first-class customers. Using the mantra of “a blip is a blip,” it argued for charging all jet aircraft the same user fee. It also paid for a large-scale media campaign, characterizing business jets as free riders. This led NBAA in particular to raise large sums to lobby Congress against any move toward user fees. The FAA stuck to its guns, issuing a detailed ICAO-type ATC user fee proposal in February 2007 (but exempting business jets altogether). The proposal also included the ability to issue revenue bonds, backed by the user-fee revenue stream. But the FAA proposal was dead on arrival in Congress. After all those efforts, Congress passed a business-as-usual reauthorization.

7.4

OBAMA ADMINISTRATION

Things picked up again in 2011, when the CEO of the Business Roundtable (BRT), former Michigan Governor John Engler, decided that a poorly run ATC system was a drag on business growth and created a working group of experts to develop a business plan for an ATC corporation. This author was a member of this group, which included former U.S. DOT and FAA officials and several aviation consultants. It held regular working sessions in 2011

and 2012, drawing on knowledge of both the Clinton administration’s USATS proposal and the (by-then) 16-year-old Nav Canada. In spring 2012 the BRT group made an initial proposal to the leadership staff of Airlines for America (A4A, the new name of the former ATA), but received only a lukewarm initial response.

A catalytic event for ATC reform was the March 2013 federal budget sequester, which went into effect automatically under the Budget Control Act because Congress had failed to agree on other spending limits. It required cuts in all non-entitlement spending, and since the sequester took place nearly half-way into the government’s fiscal year (which runs from October 1st to September 30th), the reduced spending all had to occur in the remaining six months of the fiscal year. FAA’s way of coping was to require employees, including controllers, to take one day off without pay every two weeks, and to shut down up to 100 contract towers. This generated intense concerns within controllers’ union NATCA, and its briefing by the BRT working group got a positive response. A4A and AOPA leadership were also very concerned and became more favorable to reform.



After some discussion of the pros and cons, the consensus of that meeting was that the nonprofit, private model was likely to work better in the U.S. context.



At a meeting in the BRT boardroom on May 22, 2013, the leaders of A4A, private plane group AOPA (which had also had a BRT briefing), and NATCA reviewed the then-current BRT “term sheet” for an ATC corporation.³⁶ It presented two options, either a USATS-type government corporation or a Nav Canada-type nonprofit private corporation—both with a board representing a cross-section of aviation stakeholders. After some discussion of the pros and cons, the consensus of that meeting was that the nonprofit, private model was likely to work better in the U.S. context. By the end of the year, BRT had found a congressional champion in Rep. Bill Shuster (R, PA), who chaired the House Transportation and Infrastructure (T & I) Committee.

³⁶ Robert W. Poole, Jr., *A Think Tank for Liberty*, Jameson Books, Chapter 13, 359, 2018,

In summer 2013 another working group on ATC reform was convened by the Eno Center for Transportation, a D.C.-based think tank with a bipartisan focus on transportation. Its plan (unrelated to the BRT effort, which was not yet public knowledge), was to convene all the relevant ATC stakeholders in a series of monthly meetings to work out how best to reform the ATC system. After the first few meetings, the focus shifted to corporatization, and the group's monthly meetings continued through the end of 2014, concluding with a day-long visit to Nav Canada's headquarters in Ottawa. The group's final report, reflecting division among the stakeholders, suggested that Congress consider either the USATS or the Nav Canada model.³⁷ By that point in time, it appeared that most aviation stakeholders were on board with corporatization, except for business jet group NBAA.



... the FAA's outgoing Management Advisory Council issued its final report, calling for sweeping reform, including ATC corporatization.



Sessions on ATC corporatization took place at the TRB annual meeting in 2014 and at the U.S. Chamber of Commerce's annual aviation summit. In addition, that January the FAA's outgoing Management Advisory Council issued its final report, calling for sweeping reform, including ATC corporatization.³⁸ The House T&I Committee held its first briefing session on ATC reform in November 2014, with BRT's John Engler among the witnesses. BRT commissioned quantitative studies by GRA, Inc.—the same firm that had analyzed both USATS and the previous decade's FAA user fee studies. Those results were presented at briefings to which all major aviation stakeholders were invited in fall 2014 and early 2015.

In early 2015, the House T & I Committee held two more events: a private briefing for Ranking Member Peter DeFazio (D, OR) and a roundtable discussion session for Committee members. In March, the Committee held a formal hearing on corporatization, with testimony from stakeholders including American Airlines CEO Doug Parker, NATCA president Paul Rinaldi, and this author. In May, the Senate Commerce Committee held its first hearing on ATC reform, with NATCA's Rinaldi again testifying in favor. TRB convened

³⁷ Eno Center for Transportation, *NextGen Working Group Final Report*, January 2016.

³⁸ Stephen D. Van Beek et al., "FAA and Aviation Policy Reform: Now Is the Time," FAA Management Advisory Council, January 2014.

an all-day session on ATC corporatization in July 2015, keynoted by former senior DOT policy chief Jeff Shane (who had also been a member of the BRT group). However, by fall 2015, there were warning signs. Former AOPA CEO Craig Fuller was no longer supporting an ATC corporation. As a member of the new FAA Management Advisory Council, he circulated a concept paper calling for converting the entire FAA into a government corporation. And Rep. DeFazio made some comments along the same lines.

When Shuster's corporatization bill was finally introduced in February 2016, DeFazio was no longer interested in reform; he attacked the bill across the board as far worse than the status quo. In this he was joined by the leadership of the two main general aviation groups, AOPA and NBAA. After only a few weeks, the House bill was passed by the T&I Committee on a party-line vote—but went no further.



AAAA's rhetoric aimed especially at rural America, arguing that the "big-airline-dominated board" would redirect ATC resources away from small airports and toward major hubs. The campaign succeeded in creating fear, uncertainty, and doubt among small-town mayors, directors of small airports, and elected officials in rural states.



Attacks by AOPA and NBAA went public, aided by an NBAA-funded group called the Alliance for Aviation Across America (AAAA). These groups characterized Shuster's bill as handing control of U.S. airspace and the ATC system to a "private board dominated by the big airlines." That was their rendition of a 13-member stakeholder board, to which airlines would nominate four seats and general aviation groups three seats, with others nominated by pilot and controller unions as well as members appointed by the DOT secretary to represent the flying public. AAAA's rhetoric aimed especially at rural America, arguing that the "big-airline-dominated board" would redirect ATC resources away from small airports and toward major hubs. The campaign succeeded in creating fear, uncertainty, and doubt among small-town mayors, directors of small airports, and elected officials in rural states. One result was that the draft bill to reauthorize FAA in the Senate Commerce Committee did not address ATC at all.

Advocates of an ATC utility corporation pointed out flaws in Shuster's bill that played into the hands of opponents. The stakeholder board did not include airports, or regional airlines (which serve the smaller airports and account for about 50% of all daily airline take-offs). It also included no provisions aimed at safeguarding small airports from possible reductions in ATC services, though it did include a statutory ban on charging ATC user fees to both small private planes and business jets—except for commercial air taxi service using similarly small planes.

7.5**TRUMP ADMINISTRATION**

The overall FAA reauthorization bill failed to gain floor time in either chamber of Congress during the remainder of 2016, and since a new Congress had been elected that November, legislation had to be reintroduced in 2017. The co-chairman of the House General Aviation Caucus, Rep. Sam Graves (R, MO), worked with Shuster on a revised bill that would correct the flaws of the 2016 version. Graves was pleased that the new bill revamped the stakeholder board, with only one seat nominated by the major airlines, another by regional airlines, and a third by cargo airlines. General aviation groups would nominate two seats, and airports would also nominate a board member. This was a better cross-section of aviation than in the 2016 bill. The 2017 bill also included a whole new section of protections for smaller airports, as well as a guarantee that the contract tower program would be continued. The bill banned ATC user fees for any category of general aviation (GA)—even commercial air taxi companies (a key AOPA demand). Graves believed that these changes would win over at least AOPA, if not NBAA.

However, the day the new bill was introduced, AOPA and NBAA made a joint declaration of war. Attempting to justify its new stance despite being given everything it had asked for (via Graves' changes), AOPA issued a statement saying, "We have concluded that any structural and governance reforms that require protections for an important set of users is fundamentally flawed."³⁹ The T&I Committee passed the bill anyway, with a larger majority than in 2016.

Also complicating the politics of ATC reform in 2017 was the new presidency of Donald Trump. He appointed pro-reform leadership at U.S. DOT and a White House infrastructure advisor (D.J. Gribbin) who was also favorable to ATC reform. The White House held a splashy ATC reform event in June 2017, including provisions that did not quite jibe with the

³⁹ Robert W. Poole, Jr., "AOPA's Surprising Opposition," *ATC Reform News*, July/August 2017.

carefully worked-out 2017 House bill. Speakers included a number of past and current DOT leaders—but only Republican ones. The net effect was probably negative, in that it served to politicize what should have been a bipartisan reform effort, given the Clinton administration’s pioneering efforts two decades before. And despite the support of the controllers’ union and several pilots’ and flight attendants’ unions, a coalition of all the principal federal government employee unions opposed the bill, seeing it as a slippery slope that might open the door to more government functions moving into the private (albeit nonprofit) sector.



Speakers included a number of past and current DOT leaders—but only Republican ones. The net effect was probably negative, in that it served to politicize what should have been a bipartisan reform effort....



A crowded legislative calendar in 2017, and uncertainty by the House GOP leadership about whether there were enough votes to pass Shuster’s FAA bill, led to the bill not making it to the House floor in 2017. Early in 2018 the House vote count still looked uncertain, but at a House GOP leadership retreat early that year, which President Trump attended, he agreed to lobby wavering House Republicans to embrace the bill. With that news in hand, Shuster’s people passed the word to supporters that the vote would be held in mid-March. But on February 27th, Shuster announced—without explanation—that he would be withdrawing the whole ATC section from the bill when it was brought to the floor. Nobody could figure out why, but a few weeks later *Politico* reported that Trump had reneged on his promise to make calls and twist arms.⁴⁰ The House subsequently passed the bill, minus the ATC corporation section. The Senate followed suit, with a no-reform bill, and the two versions were reconciled by a conference committee. Both chambers passed the no-reform bill.

⁴⁰ Lauren Gardner, “How ATC Got Grounded,” *Politico*, 2 April 2018.

PART 8

SUMMARY AND CONCLUSIONS

The 2018 defeat appeared to foreclose further attempts at creating a U.S. ATC utility for the duration of the five-year reauthorization period. With so many topics on its agenda, and very limited floor time, any stand-alone ATC bill apart from the next FAA reauthorization would have been highly unlikely.

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The 2013–2018 ATC reform effort garnered much greater support than any previous effort.

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The 2013–2018 ATC reform effort garnered much greater support than any previous effort. Openly supporting the bill were all the major passenger and cargo airlines, controllers’ union NATCA, unions representing pilots and flight attendants, six former DOT secretaries, all three former chief operating officers of the Air Traffic Organization, 13 former senior Clinton administration officials, transportation experts from a long list of noted think tanks, taxpayer and consumer groups, and the editorial boards of many leading newspapers,

including the *Chicago Tribune*, *Miami Herald*, *Orlando Sentinel*, *The Wall Street Journal*, *Washington Post*, and *USA Today*.

Unfortunately, there was never a real, substantive debate on the case for an ATC utility corporation. Instead, a propaganda war largely bankrolled by business jet organization NBAA made untrue allegations and stepped up its opposition efforts after the bill had been revised to reflect legitimate concerns of general aviation, small airports, and rural America. Thus, while the United States retains the world's largest ATC system, it also remains an outlier as:

- The only developed country that is not charging airspace users for ATC services;
- One of the few that still has not separated safety regulation from ATC service provision; and,
- A major nation whose ATC provider still has difficulty developing and implementing new technology and procedures in a timely and cost-effective manner.

Nevertheless, the debate has moved significantly in the direction of corporatization. In the 1970s and 1980s, it was widely assumed that the provision of air traffic control services was inherently governmental, since this service was provided by national governments in nearly all countries during those decades. The idea of separating aviation safety regulation from the provision of ATC services was unheard of. Today, the inherent conflict of interest in having the same agency do both is recognized by ICAO and has become non-standard in practice world wide.



The move toward self-supporting ATC utilities has created a worthwhile customer/provider relationship that replaces the ATC provider's dependence on politically determined funding.



Second, the importance of a self-supporting utility model for air traffic control is now widely understood and in operation in more than 60 countries. Prior to the emergence of ATC utilities beginning in 1987, most governments already charged ATC fees, mostly in accord with ICAO charging principles, but the revenues went into the national

government's coffers, to be allocated to whatever purposes the national legislative body decided upon. The move toward self-supporting ATC utilities has created a worthwhile customer/provider relationship that replaces the ATC provider's dependence on politically determined funding. The self-supporting model also permits the issuance of revenue bonds to finance long-lived capital modernization efforts, which was not possible prior to self-support, since the ATC user fee revenues belonged to the national government, not the ATC provider.

Third, we have seen empirical evidence of a changed organizational culture in many of the ATC corporations. They are generally able to hire and retain experienced managers, engineers, and software experts, thereby regaining control of technology development from aerospace companies on whom they were formerly overly dependent. This is leading to reductions in overhead costs, more cost-effective technology improvements, and increases in productivity.

Governance is still a work in progress, with many of the government corporations being dependent on one or two government shareholders. By contrast, the stakeholder board concept has proved workable and effective for more than two decades at Nav Canada, the world's second-largest ATC provider and widely considered one of the best. A governing board representing all the principal aviation stakeholders gives the ATC provider a governance model much like the user cooperative model well-known in the rural utilities sector in the United States. It is a model that may offer governance improvements to many ATC providers currently organized as government corporations.

To sum up, the world of air traffic control has changed markedly in the decades since the corporatization of Airways New Zealand in 1987. The United States is the last major country that stands apart from this reform. It is conceivable that the growing track record of self-supporting ATC corporations will lead to some version of this model being adopted in the United States within the next decade.

GLOSSARY

A4A: Airlines for America, formerly known as ATA.

AAAA: Alliance for Aviation Across America, a grass-roots group of rural and small-city officials funded largely by NBAA.

ADS-B: Automatic Dependent Surveillance-Broadcast, a way to keep track of aircraft movements based on GPS signals.

AOPA: Aircraft Owners and Pilots Association, an organization representing pilots of small private planes.

ARINC: Aeronautical Radio Inc., formerly a nonprofit corporation but today part of a large aerospace company.

ATA: Air Transport Association, former name of A4A.

ATC: air traffic control, the system used to keep planes safely separated while in flight.

ATO: Air Traffic Organization, the part of the FAA that is responsible for air traffic control.

BRT: Business Round Table, a group representing large companies.

CAB: Civil Aeronautics Board, a now-defunct federal agency that was the economic regulator of commercial airlines.

CANSO: Civil Air Navigation Services Organization, the trade association for ATC providers worldwide.

DOT: U.S. Department of Transportation.

FAA: Federal Aviation Administration, the agency that regulates aviation safety and operates the ATC system.

FSS: Flight Service Stations, FAA facilities that provide services to private pilots.

GAO: Government Accountability Office, formerly known as the General Accounting Office.

GBAS: Ground-Based Augmentation System, a system that augments GPS signals to guide planes to a safe landing.

GPS: Global Positioning System, a global satellite constellation that provides location and timing information to people and vehicles on the ground and in the air.

ICAO: International Civil Aviation Organization, the UN agency for coordinating international aviation.

ILS: Instrument Landing System, a 1940s technology that guides planes to landings at airports.

KPI: key performance indicators.

NATCA: National Air Traffic Controllers Association, the union representing FAA air traffic controllers.

NBAA: National Business Aviation Association, the organization representing operators of primarily jet and turboprop aircraft used for business.

OMB: Office of Management and Budget, the White House budget office.

PBN: Performance-Based Navigation, a system based on self-monitored performance of precision navigation equipment on board the aircraft.

TCAS: Threat Collision Avoidance System, a system designed to anticipate mid-air collisions and have the plane take evasive action.

TRACON: Terminal Radar Approach Control, an ATC facility that assists planes in transitioning between airspace around an airport and high-altitude airspace.

TRB: Transportation Research Board, part of the National Academy of Sciences.

USATS: U.S. Air Traffic Services Corporation, a Clinton administration proposal for a self-supporting ATC corporation.

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ABOUT THE AUTHOR

Robert Poole is director of transportation policy and the Searle Freedom Trust Transportation Fellow at Reason Foundation, a public policy think tank based in Los Angeles and Washington, D.C.

He was among the first to propose the commercialization of the U.S. air traffic control system, and his work in this field helped shape proposals for a U.S. ATC corporation. A version of his nonprofit corporation concept was implemented in Canada in 1996. He has advised the Office of the Secretary of Transportation, the White House Office of Policy Development, the National Performance Review, the National Economic Council, and the National Civil Aviation Review Commission on ATC commercialization. He is a member of the Air Traffic Control Association and of the GAO's National Aviation Studies Advisory Panel. In 2012–2013 he was a member of the Business Roundtable task force on ATC reform, and in 2014–2015 he was part of the Eno Center for Transportation working group on ATC reform. In 2018 he received the Eno Center's Thought Leader Award for his work on ATC corporatization.

Poole's Reason studies helped launch a national debate on airport privatization in the United States. He advised both the FAA and local officials during the 1989–1990 controversy over the proposed privatization of Albany (NY) Airport. His policy research on this issue helped inspire the privatization of Indianapolis airport management under Mayor Steve Goldsmith and Congress' 1996 enactment of the Airport Privatization Pilot Program.

In aviation security, Poole advised the White House and House Republican leaders on what became the Aviation & Transportation Security Act of 2001, which was enacted in response to the 9/11 attacks. He has authored a number of Reason policy studies on aviation security and is the author of a paper on risk-based aviation security for the OECD's International Transport Forum.

Poole has testified on airports, aviation security, and air traffic control on a number of occasions before House and Senate aviation and homeland security subcommittees, and has spoken on these subjects before numerous conferences. He has also consulted on several airport privatization feasibility studies. Poole also edits a monthly Reason Foundation e-newsletter on aviation policy issues. He received his B.S. and M.S. in mechanical engineering at MIT and did graduate work in operations research at NYU.

