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# CHANGING AMERICA'S AIR TRAFFIC CONTROL MODEL: LEARNING FROM CANADA

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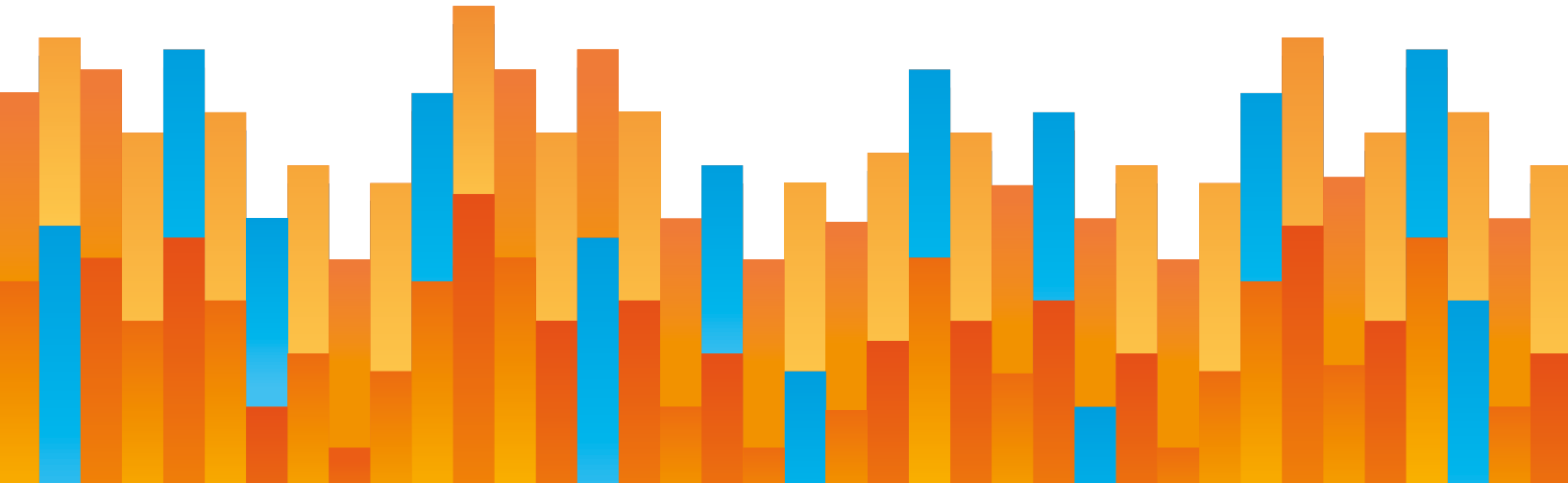


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PART 1

# INTRODUCTION

The Federal Aviation Administration (FAA) combines two vitally important functions. It is the nationwide aviation safety regulator. It is also the operator of the country's air traffic control (ATC) system. According to the International Civil Aviation Organization (ICAO), aviation safety regulation should be at arm's length from airports, airlines, private planes, and all other aspects of aviation, including ATC.[1] In its current form, FAA violates that widely followed principle. According to data from the Civil Air Navigation Services Organization (CANSO), 70 countries have separated their ATC provider from the government's transport ministry, and another 26 countries receive ATC service from multi-country air navigation service providers (ANSPs).[2]

Self-regulation is poor public policy, in addition to violating ICAO principles. Hence, the first step in fixing what is wrong with FAA is to organizationally separate the FAA's Air Traffic Organization (ATO) from the FAA itself. The ATO could become a separate modal agency as part of the U.S. Department of Transportation (DOT) or could become an ATC utility, funded by the same kinds of aviation user fees put in place worldwide by ANSPs. A change that large would require Congress to enact enabling legislation.

In its current form, embedded within FAA, the Air Traffic Organization is plagued by antiquated facilities, a chronic shortfall of fully qualified air traffic controllers, and aging

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

2 Marc Scribner, "Annual Aviation Infrastructure Report: 2026," Reason Foundation, May 2026, Table 5.

technology that is mostly far behind the state of the art. A principal reason for those major shortcomings is that FAA depends on Congress for its funding. The majority of this funding is generated by a tax on airline tickets, which yields far less annual revenue than needed to properly fund the ATO. The current ticket tax structure was enacted by Congress in 1970 and was not indexed to inflation. It was intended to be dedicated to airport and air traffic control capital investment, but Congress diverts most of that revenue to pay FAA's operating costs.

In short, the U.S. air traffic control system is embedded in a tax-funded bureaucracy that is unable to replace ancient facilities and obsolete technology. As noted previously, 96 other countries receive air traffic services from self-funded air navigation service providers (ANSPs) that are separate from government transport ministries and regulated for safety by a national government safety regulator. How could the United States draw from this worldwide experience?

PART 2

# NAV CANADA'S STRUCTURE, HISTORY, AND PERFORMANCE RECORD

The U.S.' northern neighbor reformed its ATC system in the 1990s. Prior to that reform, Canada's ATC system resembled the U.S.': it was part of the transport ministry, funded by a tax on airline tickets, and it operated with aging facilities and technology. A coalition of aviation organizations researched overseas models and proposed removing ATC from the transport ministry and converting it into a self-supported nonprofit ATC corporation, which was dubbed NAV CANADA. The new company began operations in 1996, initially funded by Transport Canada, until NAV CANADA developed and implemented ICAO-compliant aviation user fees, which went into effect in 1998.

NAV CANADA is a user-oriented entity similar to a customer cooperative. Nobody "owns" NAV CANADA as there are no shares. The NAV CANADA corporate structure rewards its aviation customers with lower rates if management does a good job. If management doesn't do a good job, it can be easily replaced. This summarizes as: "users pay, users say."

## 2.1 WHAT IS THE NAV CANADA MODEL?

NAV CANADA is a private, not-for-profit corporation (specifically a non-share capital corporation under the Canada Not-for-profit Corporations Act). It operates as Canada's air navigation services provider (ANSP) and is self-financing through user fees, with no government funding. Its corporate structure features a unique shared governance model established at its founding in 1996, balancing interests among key aviation stakeholders via membership and board representation. The NAV CANADA Board of Directors has 15 members, which reflects stakeholder balance. The defined membership of the Board is:

- 3 directors elected by the Government of Canada
- 4 directors elected by commercial air carriers (through NACC)
- 1 director elected by business and general aviation (through CBAA)
- 2 directors elected by employee unions (bargaining agents)
- 4 independent directors elected by the Board
- 1 director: the president and CEO (appointed by the Board)[3]

Notably, the NAV CANADA model leverages the natural monopoly that ATC represents to obtain an investment-grade credit rating providing very low financing costs. NAV CANADA's S&P bond rating is AA, most recently reaffirmed in September 2025.[4] Low financing costs encourage NAV CANADA to modernize its ATC system, saving users significant money. Because it can issue bonds to pay for large-scale modernization, NAV CANADA can equip all its facilities with an improved technology—such as electronic flight strips instead of paper ones, which were fully deployed at NAV CANADA's 42 control towers by 2009—within one or two years. By contrast, due to funding limits, FAA has to implement new technologies in its facilities over much longer time periods, such as 15 years.[5]

3 NAV CANADA, "Governance," https://www.navcanada.ca/en/corporate/governance.aspx (accessed April 2026); see also "NAV CANADA Annual Report 2025," NAV CANADA.

4 "NAV CANADA," S&P Global Ratings, 18 Sept. 2025, https://www.spglobal.com/ratings/en/regulatory/article/-/view/sourceId/101643157.

5 Kevin Walsh and Heather Krause, "Air Traffic Control: FAA Actions Are Urgently Needed to Modernize Aging Systems," Government Accountability Office, GAO-24-107001, Sept. 2024. https://www.gao.gov/assets/gao-24-107001.pdf.

## 2.2 HOW DID NAV CANADA COME ABOUT?

Prior to the creation of NAV CANADA, Canadian air traffic control was similar to the U.S. system. It was governmentally provided by Transport Canada. NAV CANADA became operational on November 1, 1996 under the Civil Air Navigation Services Commercialization Act of 1995. Under this act, NAV CANADA purchased the air traffic control infrastructure for CAD$1.5 billion and received established government ticket tax revenue streams for a period of two years, after which time it became completely self-supporting, deriving its revenue from newly implemented user fees charged to aviators operating in the system.[6]

A principal figure in the creation of NAV CANADA was John W. Crichton. He is widely recognized as the key architect and leader behind its creation as the world's first fully non-governmental ANSP. Prior to NAV CANADA's formation, while serving as president and CEO of the Air Transport Association of Canada (ATAC), Crichton played a major advocacy and facilitation role. He brought together diverse stakeholders—including the federal government, commercial airlines, unions, general aviation, and the investment community—to build consensus for shifting air navigation services from Transport Canada to a private, not-for-profit corporation.

## 2.3 HAS THE CREATION OF NAV CANADA BENEFITTED CANADIAN AVIATION?

Available evidence shows that NAV CANADA delivers ATC and related air navigation services more cost-efficiently overall, with lower real (inflation-adjusted) charges to users in the long term, greater stability, and better productivity. In the pre-1996 Transport Canada era, ATC was a government department function funded primarily through the Air Transportation Tax (a passenger ticket tax) and general tax revenue, much like the FAA. Under this paradigm, the system faced chronic underfunding, budget constraints, staff shortages, outdated infrastructure, delays, and rising costs that outpaced the tax revenue.[7] The FAA faces these same circumstances today. By the early 1990s, the ATC situation under Transport Canada was widely viewed as unsustainable.

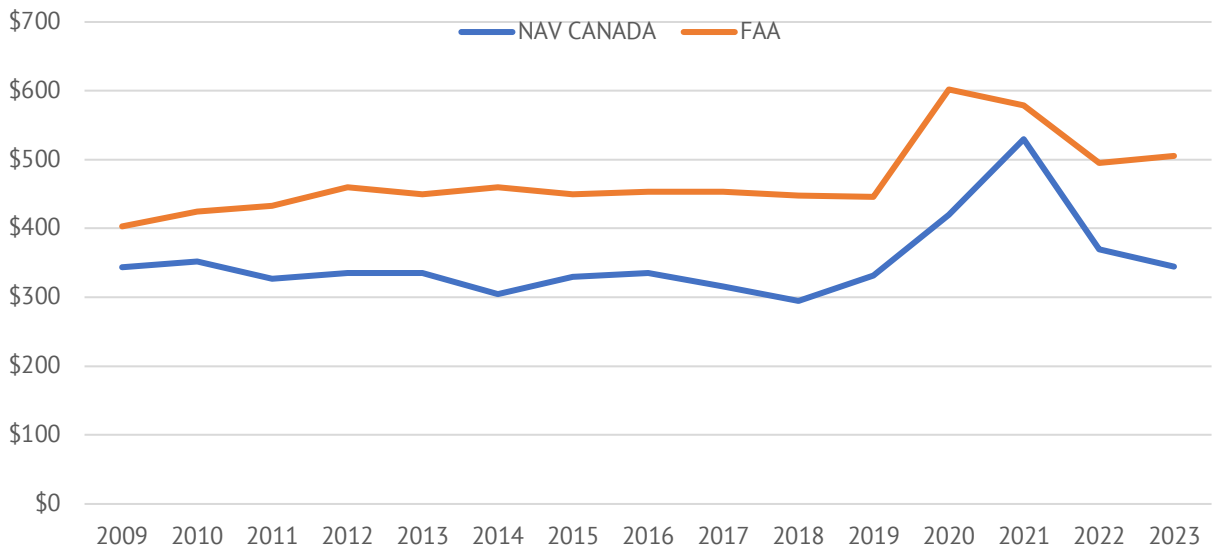
6 NAV CANADA, "The World's First Private Air Navigation Service Provider," https://www.navcanada.ca/en/the-worlds-first-private-ansp.pdf.

7 Patrick Floyd, "Canada's Experience with ATC Privatization," *The Air & Space Lawyer*, Vol. 30, No. 2, 2017.

> *Available evidence shows that NAV CANADA delivers ATC and related air navigation services more cost-efficiently overall, with lower real (inflation-adjusted) charges to users in the long term, greater stability, and better productivity.*

Under NAV CANADA benefits have been delivered in all key metrics. User costs have been reduced and, measured against the U.S., are consistently and substantially lower. Figure 1 compares FAA and NAV CANADA on cost per instrument flight hour (IFR) in continental airspace, a common air traffic control cost-efficiency metric, between 2009 and 2023, which is the most recent data release from CANSO.

**FIGURE 1: CONTINENTAL ATC COST PER IFR OF FAA AND NAV CANADA (2009-2023)**




**Source: Civil Air Navigation Services Organization, "Global Air Navigation Services Performance Report," various years.**

As Figure 1 shows, depending on the year, FAA costs to manage traffic in its continental airspace were 8% to 34% higher than NAV CANADA's, averaging 25% through the 15-year period. The smallest annual cost disparity (8%) occurred during the COVID-19 pandemic, when traffic cratered and the large fixed costs of air traffic control were spread over fewer

aircraft movements. Even though Canadian air traffic was slower to rebound than U.S. air traffic, NAV CANADA has already regained a sizable cost advantage over FAA, which in 2023 incurred costs per IFR hour that were 32% higher than NAV CANADA's.

*… the not-for-profit commercial model enables steady, user-funded investments without annual budget battles, allowing faster technology adoption and infrastructure renewal than the government model, e.g., the FAA.*

FAA's greater costs understate its inefficiency because these figures do not account for the fact that FAA's facilities and equipment have not been maintained to modern standards. This highlights a key benefit of the NAV CANADA model in its treatment of infrastructure. In this area, the not-for-profit commercial model enables steady, user-funded investments without annual budget battles, allowing faster technology adoption and infrastructure renewal than the government model, e.g., the FAA. Canada's ATC infrastructure is in a strong, actively-modernizing state as of early 2026—widely regarded as advanced, resilient, and forward-looking compared to many legacy government-run systems. Compare this to the FAA's infrastructure in which virtually every system is old and has either reached or is approaching obsolescence. According to U.S. Secretary of Transportation Sean Duffy, bringing FAA's air traffic control system up to modern standards requires an additional $19 billion to $20 billion on top of the $12.5 billion Congress awarded in 2025.[8]

Safety has benefitted from the transition with improvement in safety metrics. A 2008 study by Glen McDougall and Alasdair Roberts noted that "NAV CANADA commercialization resulted in a stronger safety culture, more reliable reporting, and the introduction of an internal Safety Management System (SMS)[.]"[9] As evidence of the impact of NAV CANADA's safety culture, NAV CANADA reports that it has reduced the five-year average rate of incidents involving a physical loss of separation between aircraft operating under IFR flight

[8] Zach Vasile, "Duffy: Up to $20 Billion More Needed to Complete ATC Overhaul," *Flying*, 25 Nov. 2025. https://www.flyingmag.com/duffy-up-to-20-billion-more-needed-to-complete-atc-overhaul/.

[9] Glen McDougall and Alasdair Roberts, "Commercializing Air Traffic Control: Have the Reforms Worked?" *Canadian Public Administration*, Vol. 51, No. 1, Aug. 2007.

plans from 1.0 per 100,000 aircraft movements as of September 2002 to 0.47 per 100,000 aircraft movements as of August 31, 2025.[10] FAA does not publish comprehensive annual or historical data on loss of separation incidents and was criticized in 2013 by the Department of Transportation Inspector General for failing to consistently collect, benchmark, and analyze these data.[11]

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Some U.S. critics have claimed that "per the most recent ICAO safety audit, Canadian air traffic control ranks below average."[12] This is a red herring. ICAO does conduct a Universal Safety Oversight Audit Program (USOAP) under which it evaluates various country's *aviation safety regulators*. It does not evaluate ANSPs. The USOAP evaluation in question addresses the performance of Transport Canada Civil Aviation (TCCA), Canada's aviation regulator. The evaluation has nothing to do with NAV CANADA. While some argue that ATC reform might result in lower safety in the current, highly safe U.S. system, Canada's experience verifies that such fears are unfounded.

10 "2025 Annual Information Form 51-102F2," NAV CANADA, 23 Oct. 2025. 11. https://www.navcanada.ca/en/aif-august-31-2025.pdf.

11 "FAA's Efforts To Track and Mitigate Air Traffic Losses of Separation Are Limited by Data Collection and Implementation Challenges," U.S. Department of Transportation, Office of Inspector General, Audit Report AV-2013-046, 27 Feb. 2013. https://www.oig.dot.gov/sites/default/files/LoSS%20Final%202-27-13_final_signed_rev.pdf.

12 International Civil Aviation Organization (ICAO), Universal Safety Oversight Audit Programme (USOAP) results for Canada (audit conducted May–June 2023; score published Dec. 2023), available via the ICAO Safety Audit Results interactive viewer at https://www.icao.int/usoap/safety-audit-results-usoap-interactive-viewer.

## 2.4 HAS THE NAV CANADA MODEL HAD CHALLENGES?

During the COVID-19 pandemic, due to a dramatic drop in flight activity (as in most other countries) NAV CANADA's revenue decreased significantly. While FAA continued to rely on conventional annual appropriations from Congress, the NAV CANADA model provides a structure to weather such events without exposing taxpayers to risk. NAV CANADA has a rate stabilization account to weather unexpected variance in user charge revenue. When user revenues are higher than expenses, the surplus is credited to the rate stabilization account with the excess balance credited to user charges in the future. When user charges fall short of expenses, the shortfall is debited to the rate stabilization account with charges eventually passed through to users as future rate increases or surcharges. NAV CANADA used the rate stabilization account with other measures to work through the COVID-19 event. Other measures included cost management through a hiring freeze, reduced capital spending, and debt issuance for liquidity. The NAV CANADA model allowed it to maintain safe, continuous operations while aligning long-term revenues with costs. While the U.S. system requires constant intervention by Congress, especially during upheavals like COVID, the Canadian system has built-in "rainy-day" reserves.

*"While FAA continued to rely on conventional annual appropriations from Congress, the NAV CANADA model provides a structure to weather such events without exposing taxpayers to risk."*

NAV CANADA has experienced controller shortages for the same reasons confronting FAA. These include post-COVID recovery challenges, high attrition and retirements, long and demanding training, unplanned absences, and localized pressures. It is estimated that in 2026, NAV CANADA is short an estimated 200 controllers against a total planned controller workforce of 2,050. This implies that NAV CANADA is approximately 9% short of its staffing target.[13] Estimates for FAA indicate a 25%-30% shortfall in fully certified controllers while

[13] Nick Murray, "NAV Canada says it's short about 200 air traffic controllers," *The Canadian Press*, 25 March 2026. https://globalnews.ca/news/11745258/air-traffic-controllers-canada/.

its total staff of controllers plus trainees is 9%–10% below target.[14] Both FAA and NAV CANADA have adopted an aggressive hiring posture, as have numerous ANSPs globally that were impacted by the pandemic. In addition to not being subject to civil service pay scales and labor rules, one large advantage that NAV CANADA has over FAA is the ability to leverage modern technology to enhance controller productivity.

## 2.5 HOW DID TRANSPORT CANADA SHIFT ATC TO NAV CANADA?

As mentioned previously, at its inception NAV CANADA was provided the revenues from government airline ticket taxes for two years, after which time it would transition to a user fee model. On November 1, 1996 NAV CANADA inherited between 6,300 and 6,400 Transport Canada employees.[15] Under NAV CANADA, this staffing base was significantly decreased through a reduction of administrative staff early in the transition process, consolidation of flight service stations, and the introduction of efficiency into the engineering staff.

At the beginning, NAV CANADA did not reduce controller or technician staff. Instead, it limited the growth in controller staffing in response to traffic growth through controller productivity gains allowed by system modernization. Some examples of productivity enhancing tools include:

- Early implementation of the Canadian Automated Air Traffic System (CAATS)—a parallel effort to the FAA's Advanced Automation System (AAS) at which the FAA failed;
- Organic evolution of this system to meet operational needs;

14 "Air Traffic Controller Workforce Plan 2025–2028" Federal Aviation Administration, August 2025. https://www.faa.gov/about/office_org/headquarters_offices/afn/offices/finance/offices/office-financial-labor-analysis/plans/controller-workforce.pdf. See also analyses based on the plan, such as AviatorDB reporting (March 2026), which calculated a shortfall of 3,544 fully certified (full performance level) controllers against a target of 14,633, equating to approximately 24% below target for certified controllers; broader FAA data and media reports from late 2025–early 2026 commonly describe the full-performance-level (FPL) certified controller shortage in the 25%–30% range at many facilities or system-wide when focusing on experienced controllers, while the combined total of controllers plus developmental trainees typically shows a smaller overall gap (around 9%–10% below combined staffing targets).

15 House of Commons of Canada, Standing Committee on Transport, Evidence, Meeting No. 2, 16 Apr. 1996. https://www.noscommunes.ca/Archives/Committee/352/port/evidence/02_96-04-16/port02_blk-e.html. The report states that approximately 6,400 federal employees supporting air navigation services would be offered employment with NAV CANADA. NAV CANADA's own later references sometimes cite the figure as approximately 6,300 employees.

- Modernized air traffic control towers;
- Oceanic real time surveillance-based aircraft separation enabled by space-based Automatic Dependent Surveillance–Broadcast (ADS-B);
- Controller-Pilot Data Link Communications (CPDLC); and
- Implementation of Digital Twin, an AI-based flow management tool.

## 2.6 HAVE ATTEMPTS AT COMMERCIALIZATION OF ATC FUNCTIONS BEEN MADE IN THE U.S.?

Attempts have been made for 50-plus years to commercialize ATC in the United States. The most prominent recent effort came in 2017 during President Trump's first term.[16] In this effort, House Transportation and Infrastructure Committee Chairman Bill Shuster sought a nonprofit, NAV CANADA-style corporation governed by a board nominated by airlines, general aviation, labor, airports, and others. Shuster's bill was supported by the FAA controllers' union, National Air Traffic Controllers Association (NATCA), all U.S. airlines with the exception of Delta (Delta's objections did diminish during the legislative process), and business organizations led by the Business Roundtable.[17] The bill faced strong opposition from business aviation (National Business Aviation Association, NBAA), general aviation (Aircraft Owners and Pilots Association, AOPA), and all federal employee unions except NATCA, which ultimately led to its defeat.[18]

16 Bart Elias, "Air Traffic Inc.: Considerations Regarding the Corporatization of Air Traffic Control," Congressional Research Service, R43844, 16 May 2017. https://crsreports.congress.gov/product/pdf/R/R43844. For the 2017 effort, see President Donald J. Trump's announcement and support for the plan on June 5, 2017, which endorsed legislation introduced by House Transportation and Infrastructure Committee Chairman Bill Shuster (H.R. 2997, the 21st Century AIRR Act), modeled on a nonprofit corporation similar to NAV CANADA.

17 Robert W. Neher, "ATC Privatization: A Solution in Search of a Problem," *Journal of Air Law and Commerce* Vol 83, No. 1 (2018): 85–86, https://scholar.smu.edu/cgi/viewcontent.cgi?article=4093&context=jalc. The article states that the 21st Century AIRR Act (H.R. 2997) was supported by most U.S. airlines, "with the notable exception of Delta Air Lines," as well as the National Air Traffic Controllers Association (NATCA). NATCA's official statement of support is available at: National Air Traffic Controllers Association, "June 22, 2017 // NATCA Supports 21st Century AIRR Act," 22 June 2017, https://natca.org/2017/06/22/june-22-2017-natca-supports-21st-century-airr-act-2/.

18 Aircraft Owners and Pilots Association (AOPA) et al., "General Aviation Groups United in Opposition to H.R. 2997," joint statement, 5 July 2017.

PART 3

# THE PRINCIPAL OBJECTIONS

## 3.1 WHAT WERE THE PRINCIPAL OBJECTIONS TO SHUSTER'S LEGISLATION?

There were five principal objections to Rep. Shuster's legislation voiced by the opposing stakeholders. These were:

- Potential airline dominance of the structure;
- Harm to general aviation and rural access;
- No specifically promised benefits to modernization from the plan;
- A give-away of government assets; and
- Lack of congressional oversight.

These can be examined individually:

### #1 AIRLINE DOMINANCE

Did air carrier dominance occur under the NAV CANADA model? NAV CANADA's official position—and that of many observers—is that its balanced stakeholder model composed of representatives from the government of Canada, commercial air carriers, general aviation, and NAV CANADA employees prevents any single group from dominating its governance.

While directors are nominated by various aviation stakeholder groups, they have a legal duty to act in the best interests of NAV CANADA as a corporation. As a result, NAV CANADA has avoided accusations of stakeholder dominance. Likewise, Shuster's 2017 bill called for a 13-member stakeholder board including four seats nominated by various types of airlines, and three seats nominated by business and general aviation groups, all of whom would have had a fiduciary duty to the air traffic control nonprofit corporation.

## #2 HARM TO GENERAL AVIATION AND RURAL ACCESS

In Canada, the two factors that would have reduced rural access for general and business aviation would have been a reduction in the number of approved instrument approaches and a reduction of surveillance coverage to enable real-time surveillance-based ATC. There is no evidence that instrument approach procedures were reduced in rural areas under NAV CANADA. In fact, through its Navigation Aid (NAVAID) Modernization Program, Global Navigation Satellite System (GNSS)-based instrument approach procedures were added or updated at numerous northern/remote sites to support instrument flight operations where traditional NAVAIDS were sparse. Under this program, recovery options (e.g., radio technologies (VOR/NDB) at key sites for GNSS-failure scenarios) were explicitly preserved.[19] In the real-time surveillance arena, under its Northern Radar Program, NAV CANADA added radar coverage for one million sq. km of northern airspace.[20] This program was followed by ADS-B implementation becoming operational in 2009, filling in 850,000 sq. km of coverage gaps in the Hudson Bay area.[21] Space-based ADS-B now provides real-time surveillance coverage over 100% of Canadian Class A and B airspace and previously unserved remote/terrain-blocked areas. On the basis of increased instrument approaches and increased real-time surveillance-based ATC it can be argued that rural access has been dramatically improved under the NAV CANADA model.

19 "NAVAID Modernization Program," NAV CANADA. https://www.navcanada.ca/en/air-traffic/navaid-modernization-program.aspx (14 May 2026); see also "NAVAIDs Modernization Program – FAQ," NAV CANADA, July 2019. https://www.navcanada.ca/en/navaidsmodernizationprogramfaq.pdf.

20 "A Legacy of Air Navigation Innovation," NAV CANADA, Jan. 2020. https://www.navcanada.ca/en/a-legacy-of-air-navigation-innovation.pdf.

21 Edward H. Phillips, "ADS-B in Operation Over Hudson Bay Region," *Aviation Week*, 9 March 2009.

The 2017 Shuster bill included strong protection for rural airports, continuation of the Contract Tower Program that primarily serves small airports, and a ban on any user fees for all categories of general aviation.[22]

## #3 NO BENEFIT TO MODERNIZATION

Under its model, NAV CANADA has been demonstrably and significantly better at modernization than the FAA. A few examples make the point.

- NAV CANADA established space-based ADS-B over the north Atlantic in 2019 delivering real-time surveillance-based separation standards over water, providing substantial operational benefit to oceanic flights. The U.S. has yet to introduce such service.[23]
- NAV CANADA developed a modern electronic tower cab system that consolidated displays and provided electronic flight strips. This system was fully deployed to all of NAV CANADA's 42 air traffic control towers by 2009.[24] The FAA completed its 17th installation of electronic flight progress strips at Chicago Midway Airport in April 2026.[25]
- The FAA's en route automation platform, En Route Automation Modernization (ERAM), is based on 2002 technology. Its terminal automation system, Standard Terminal Automation Replacement System (STARS), is based on 1996 technology. Yet under the Brand-New Air Traffic Control System (BNATCS) program, the FAA has pushed automation modernization out to begin two to three years from now. NAV CANADA is in the process of installing modern ATC automation in its Edmonton Area Control Center with phased nationwide rollout to complete by 2030.[26]
- The FAA's en route flow management system, the Traffic Flow Management System (TFMS), is decades old and in desperate need of functional and performance

22 Robert Poole, "Air Traffic Control as a Public Utility," Reason Foundation Policy Study, June 2023. https://reason.org/policy-study/air-traffic-control-as-a-public-utility.

23 "Space-Based ADS-B," NAV CANADA. https://www.navcanada.ca/en/air-traffic/space-based-ads-b.aspx (14 May 2026).

24 Rui Neiva, "Electronic Flight Strips: A Brief History in the U.S. and Canada," Eno Transportation Weekly, 13 July 2017. https://enotrans.org/article/electronic-flight-strips-brief-history-u-s-canada/.

25 Ben Bradley, "FAA goes digital at Midway Airport tower," WGN, 24 Apr. 2026. https://wgntv.com/news/wgn-investigates/faa-goes-digital-at-midway-airport-tower/ (14 May 2026).

26 News Release, "New Era of Air Traffic Control Launches in Edmonton – First Canadian Site Selected for iTEC SkyNex," NAV CANADA, 25 June 2025. https://www.navcanada.ca/en/news/news-releases/new-era-of-air-traffic-control-launches-in-edmonton-first-canadian-site-selected.aspx.

upgrades. The FAA has undertaken a procurement for a new system with a goal to achieve initial operational capability at four key sites by the end of 2028.[27] This date will very likely not be met. NAV CANADA has implemented its Digital Twin–Sector Performance Optimizer (DT-SPO) as an AI-based flow optimizer that is currently operational across all seven NAV CANADA Area Control Centers.[28]

## #4 A GIVEAWAY OF GOVERNMENT ASSETS

NAV CANADA paid a nominal sum to acquire Transport Canada's ATC facilities and equipment, most of which had to be replaced. In the United States, nearly all FAA ATC assets have been depreciated to zero value because of age.[29] With the same ability to issue long-term revenue bonds that NAV CANADA has, a new U.S. ANSP would be able to long-term finance replacement of ancient facilities and would be capable of a much faster rollout of new equipment to all its facilities. In this way, government assets aren't given away but leveraged to facilitate desperately needed system modernization.

## #5 LOSS OF LEGISLATIVE OVERSIGHT

NAV CANADA has thrived under arm's-length safety regulation by Transport Canada and no longer having directives given to it by legislative members. In the United States, Congress hamstrings FAA with inadequate funding and numerous mandates. The $12.5 billion provided to FAA in the One Big Beautiful Bill (OBBB) Act came earmarked for specific purposes, not allowing FAA flexibility to allocate the funding to the highest priority needs. It also earmarked funding for purposes that are not economically efficient. The poster child for this is the $120 million funding for the Don Young Alaska Aviation Safety Initiative and aviation weather facilities in Alaska with specific instructions to *ignore cost/benefit considerations*. Finally, in FAA reauthorization laws Congress imposes numerous

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27 Contract Opportunity, "Flow Management Data and Services (FMDS) – Challenge Based Acquisition," Federal Aviation Administration, 24 Sept. 2026. https://sam.gov/workspace/contract/opp/4fb89c5b23914f5992dd94b041662b7b/view.

28 NAV CANADA, "Modernizing Canadian Airspace: How NAV CANADA is Using Digital Twin Technology to Shape the Future of Aviation," 7 July 2025. https://www.navcanada.ca/en/news/blog/modernizing-canadian-airspace-how-nav-canada-is-using-digital-twin-technology-to-shape-the-future-of-aviation.aspx.

29 "2025 Agency Financial Report," Federal Aviation Administration, Jan. 2026. https://www.faa.gov/about/office_org/headquarters_offices/afn/offices/finance/offices/financial_management/ar/fy25-faa-agency-financial-report.pdf.

requirements on FAA that are resource-consuming and do not cost-effectively improve ATC functioning.

## 3.2 WHAT IS THE REAL OBJECTION OF GENERAL AND CORPORATE AVIATION AND DOES IT STAND UP?

Fear of unaffordable user fees is the primary concern of general and business aviation organizations AOPA and NBAA. Today, in the U.S. their only airspace user tax is a small tax on aviation fuel. In Canada general aviation and corporate aviation are charged directly for airspace use. What is the impact of this on general and corporate aviation in Canada? First, let's look at recreational general aviation. As an example, a Canadian-registered propeller aircraft having a maximum takeoff weight of three metric tons (6,613.87 pounds) or less that is used for recreational purposes is charged a flat fee of CAD$86.71 annually plus adjustments, which in recent years have been around CAD$95. These charges cover terminal and enroute services (excluding oceanic) for the entire year, regardless of how much flown. Recreational flyers are also subject to charges for the use of Canada's seven largest airports.[30] Excluding the seven largest airports, adding the flat fee and the adjustments implies an annual charge approximating CAD$200 ($144.36) for unlimited operation of a very nice airplane in Canadian airspace. This is hardly an exorbitant sum.

*Excluding the seven largest airports, adding the flat fee and the adjustments implies an annual charge approximating CAD$200 ($144.36) for unlimited operation of a very nice airplane in Canadian airspace. This is hardly an exorbitant sum.*

[30] NAV CANADA, "Customer Guide to Charges Effective January 1, 2025," 1 Jan. 2025. https://www.navcanada.ca/en/customer-guide-to-charges---effective-january-1-2025.pdf.

An earlier Reason Foundation study titled "Business Jets and ATC User Fees: Taking a Closer Look" examined the impact on business jets.[31] The study obtained detailed performance data on 15 then-current business jets, from Conklin & de Decker, including fixed parameters such as maximum takeoff weight and variables such as annual hours flown, average annual miles flown, and variable costs. For each of the 15, these data enabled calculation of average aviation fuel taxes paid, and those averages were compared with average ATC fees they would have paid if a weight-distance user fee based on NAV CANADA's fee structure were implemented in the United States. Comparing fuel tax and aviation fee for each of the 15, showed that the ATC user fee would average about 2.2 times as much as the average FAA fuel tax paid for each of the 15 aircraft types.

So, it's true that business jet owners/operators would pay a bit more than double to use the ATC system if this change were made. But that's not the end of the story. The study also compared the operating cost per flight hour of each aircraft model with the ATC fee per flight hour. The ATC fee ranged from a low of 2.8% to 4.3% of the hourly operating cost. For example, the Citation X averaged $5,647 per hour to operate, but the ATC charge would be $166 per hour—2.9%. That is hardly a threat to the viability of America's robust business jet industry.

[31] Robert W. Poole, Jr., "Business Jets and ATC User Fees: Taking a Closer Look," Reason Foundation Policy Study No. 347, Aug. 2006. https://reason.org/policy-study/business-jets-and-atc-user-fee/.

PART 4

# CONCLUSION

FAA is facing increasing scrutiny for its outdated facilities and equipment, management practices, and workforce challenges but remains dependent on uncertain and insufficient annual appropriations by Congress. Canada provides a working model of a successful transition from a tax-funded ATC system chronically short of adequate revenue and long-term financing to a sustainable, adaptable non-profit commercial structure capable of continuous modernization. A similar transition in the United States could leverage a proven model for a safe and cost-effective ATC system.

# ABOUT THE AUTHOR

**John Kefaliotis** is an aviation professional with more than 50 years of experience in air traffic control. He spent 13 years with the FAA beginning in 1970 serving as an air traffic controller, air traffic controller supervisor, and R&D program manager. In 1983 he left the FAA to enter private industry where he successfully participated in and grew businesses specializing in ATC system engineering, system development, and system deployment. Mr. Kefaliotis is currently the principal of IOV Consulting, LLC.

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