



Committee on Transportation and Infrastructure
U.S. House of Representatives
Washington DC 20515

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SUMMARY OF SUBJECT MATTER

TO: Members, Committee on Transportation and Infrastructure
FROM: Staff, Committee on Transportation and Infrastructure
RE: Committee Hearing on “The Need to Reform FAA and Air Traffic Control to Build a 21st Century Aviation System for America”

PURPOSE

The Committee on Transportation and Infrastructure will meet on Wednesday, May 17, 2017, at 10:00 a.m. in 2167 Rayburn House Office Building to hold a hearing on the need for fundamental reform of the air traffic control (ATC) system. The Committee will receive testimony from the Inspector General of the Department of Transportation (DOT IG), the President of the National Air Traffic Controllers Association, a former Clinton and Obama Administration Official, the Director of Transportation Policy of the Reason Foundation, and the President of Hartzell Propeller.

BACKGROUND

The aviation system is comprised of a diverse community, including commercial aviation, general aviation, unmanned aircraft, airports, commercial space transportation, and others. Commercial and general aviation help transport millions of passengers and move billions in revenue ton-miles of freight safely and securely all across the country. Impacts are also seen state-by-state, where airports and air operators help connect large and small communities and create jobs and increase economic output.¹

ATC services includes safely guiding aircraft between airports, supplying aeronautical information, and operating navigation and communications equipment. In the United States, ATC began as a private sector enterprise in the mid-1930s.² The federal government took over ATC in subsequent years and the process culminated in the creation of the Federal Aviation Administration (FAA) in 1958. Today, the FAA provides ATC services within the United States

¹ http://www.faa.gov/airports/planning_capacity/ga_study/

² Federal Aviation Administration. “A Brief History of the FAA.” https://www.faa.gov/about/history/brief_history/

and certain international airspace.³ Within that airspace, air traffic controllers handle approximately 50,000 operations daily.⁴

FAA's 35-Year Legacy of Failed ATC Modernization Management

The FAA's day-to-day operation of the ATC system is safe and, generally speaking, reliable. However, the ATC system is still predominantly based on antiquated technologies and procedures that are inadequate to support a modern aviation industry. The long-term growth and success of American aviation requires, among other things, an ATC system capable of meeting the dynamic needs of diverse airspace users and the timely and cost-effective deployment of innovative technologies that improve the safety and efficiency of the system. The FAA's stewardship of ATC system modernization has been one of waste, inefficiency, and mismanagement. There are decades of DOT IG audits, Government Accountability Office (GAO) reports, and independent third party reviews documenting the extraordinary waste of tax dollars and poor management of a continuous string of FAA "modernization" programs dating back to the early 1980s.

One of the FAA's early attempts at modernization was the Advanced Automation System (AAS). The FAA proposed AAS in 1983 with an estimated cost of \$2.5 billion and a completion date of 1996.⁵ By 1986, the GAO expressed doubts whether the benefits of AAS would exceed its costs and questioned the savings the FAA used to justify the investment.⁶ By 1992, cost estimates rose to \$5.1 billion and the completion date slipped to 2002.⁷ In 1994, the FAA restructured the program because of "severe cost, schedule, and technical problems."⁸ As a result, cost estimates rose to \$7.6 billion and completion slipped to 2003. Of the \$2.6 billion the FAA spent on AAS by 1994, computer hardware and software costing \$1.5 billion was determined to have been "wasted."⁹ In 1998, the DOT IG reported that AAS failed, "because of overambitious plans" and "poor FAA oversight of contractor performance. . ."¹⁰ One participant in the AAS project was later quoted as saying, "[i]t may have been the greatest failure in the history of organized work."¹¹ The FAA Associate Administrator for Acquisitions stated that, "[w]e royally screwed up AAS, no doubt about it, in any way that a project could be screwed

⁴ Speech of FAA Administrator Michael Huerta before the Aero Club of Washington, "All for One, and One for All," Oct. 16, 2014, Washington, D.C., *available at* http://www.faa.gov/news/speeches/news_story.cfm?newsId=17554&omniRss=speechesAoc&cid=104_Speeches.

⁵ U.S. Government General Accounting Office, "Air Traffic Control: Advanced Automation System Still Vulnerable to Cost and Schedule Problems", Report No. GAO/RCED 92-264 at 1. (Sept. 1992)

⁶ U.S. Government General Accounting Office, Testimony of Dr. Carl Palmer before the Subcommittee on Transportation and Related Agencies, Committee on Appropriations: "Federal Aviation Administration's Acquisition of the Advanced Automation System", No. GAO/T-IMTEC-87-4, pgs. 6-7, (Apr. 21, 1987)

⁷ *Supra* at footnote 5, Report No. GAO/RCED 92-264 at 1

⁸ U.S. General Accounting Office, Testimony of Gerald L. Dillingham, "Air Traffic Control: Evolution and Status of FAA's Automation Program", No. GAO/T-RCED/AIMD-98-85, pg. 1. (Mar. 5, 1998)

⁹ *Id.* at 3.

¹⁰ U.S. Department of Transportation- Office of Inspector General, "Audit Report: Advance Automation System", Report No. AV-1998-113, at 2. (Apr. 15, 1998)

¹¹ Edward Cone., "The Ugly History of Tool Development at the FAA", *Baseline*, (Apr. 9, 2002):

<http://www.baselinemag.com/c/a/Projects-Processes/The-Ugly-History-of-Tool-Development-at-the-FAA>

up.”¹² Throughout the program, FAA repeatedly assured Congress about AAS’ progress; a Congressional staffer reported that, “[t]hey would say there were a few problems, but they were being worked out. Everything seems to be going well-- until it collapses.”¹³

Today, the FAA is approximately 14 years into the development of its latest modernization initiative known as the Next Generation Air Transportation System (NextGen).¹⁴ FAA initially described NextGen as fundamentally transforming how air traffic would be managed. In 2015, however, the National Research Council found that “NextGen, as currently executed, is not... broadly transformational” and that it “is a set of programs to implement a suite of incremental changes to the NAS [National Airspace System].”¹⁵

A key example of an oversold program is the Automatic Dependent Surveillance Broadcast (ADS-B) program. ADS-B provides air traffic controllers with the GPS locations of aircraft, which is more precise and timely than radar data. ADS-B was initially touted as a way to help free up congested airspace and enable more capacity. In 2010, the FAA issued regulations mandating most aircraft operators install ADS-B equipment by 2020.¹⁶ However, far from providing congestion relief or reduced separation, in a 2014 report the DOT IG found that ADS-B will offer only limited benefits by 2020 and costs of the ADS-B program will outweigh benefits by as much as \$588 million.¹⁷ As it has become unclear what meaningful and cost-effective benefits ADS-B expenditures will result in, aircraft operators, already skeptical of the FAA’s promises, are postponing installation of ADS-B equipment until the last minute.¹⁸

The FAA’s management of ADS-B raises broader questions regarding how the FAA manages NextGen programs. For instance, the DOT IG has concerns with the FAA’s practice of “divid[ing] its programs into multiple segments, and fund[ing] each segment for a set timeframe or number of milestones...”¹⁹ The DOT IG points out that while this may minimize risk, it “...masks how much a program will ultimately cost by breaking program costs up by individual segments...”²⁰ In the intervening years between AAS and ADS-B, there are several other examples of the FAA failing to deliver on its capital-intensive technology promises.²¹

¹² *Id.*

¹³ *Id.*

¹⁴ <https://www.faa.gov/nextgen/>

¹⁵ National Research Council, David E. Liddle and Lynette I. Millett, Ed. “A Review of the Next Generation Air Transportation System: Implications and Importance of System Architecture”, p. 1 (2015)

¹⁶ 14 C.F.R. §§ 91.225 & 91.227.

¹⁷ U.S. Department of Transportation- Office of Inspector General, “Audit Report: ADS-B Benefits are Limited Due to a Lack of Advanced Capabilities and Delays in User Equipage.” Report No. AV-2014-105 at pp. 3, 9 (Sept. 11, 2014).

¹⁸ John Croft, “General Aviation May Not Meet FAA ADS-B Mandate For 2020”, *Aviation Week*, (Dec. 23, 2016): <http://aviationweek.com/aerospace-2017/general-aviation-may-not-meet-faa-ads-b-mandate-2020>

¹⁹ U.S. Department of Transportation Office of the Inspector General, “Total Costs, Schedules, and Benefits of FAA’s NextGen Transformational Programs Remain Uncertain”, pp 6, AV-2017-009 (November 10, 2016); see also, Department of Transportation Office of the Inspector General, “FAA Reforms Have Not Achieved Expected Cost, Efficiency, and Modernization Outcomes”, Report No. AV-2016-015, pp. 11-12 (January 15, 2016).

²⁰ *Id.* at pp. 6.

²¹ Edward A. Lester & R. John Hansman, Report No. ICAT-2007-2, “Benefits and Incentives for ADS-B Equipage in the National Airspace System”, § 2.7.1 (Aug. 2007).

The Decline of American Leadership In ATC

Until the mid-1980's, governments around the world grappled with the same issues currently facing the United States. They had government-operated ATC services that were adequately functional and safe on a day-to-day basis, but were plagued with conflicts-of-interest, wastefulness, inefficiency, and long-term financing difficulties. In 1987, New Zealand took what was then a truly revolutionary step and created an independent ATC service provider separate from the safety regulator.²² Countries around the world followed suit. Today, over 60 countries have successfully separated their ATC service provider from their government safety regulator. The United States is one of a handful of industrialized countries that has yet to do so.

The results of separating ATC have been quite positive according to multiple audits and studies over the years. In 2005, the GAO studied the experience of independent air navigation service providers in Australia, Canada, Germany, New Zealand, and the United Kingdom and found that safety “remained the same or improved.”²³ (emphasis added) The GAO also found that all five countries, “invested in and benefited from new technologies and equipment, which . . . lowered their costs by increasing controllers’ productivity, and produced operating efficiencies, such as fewer or shorter delays.”²⁴ These findings were affirmed in a 2008 study published in *Canadian Public Administration*.²⁵ The researchers found the separation of ATC improved service quality, reduced costs, and maintained financial stability with a neutral or positive impact on safety.²⁶ In 2014, the MITRE Corporation released a FAA-requested study about the effects of separating ATC on the safety regulatory agencies left behind.²⁷ The study found that separating ATC has been successful in each of the six countries studied: the United Kingdom, Canada, New Zealand, Australia, France, and Germany; and further found that there was unanimity among the safety regulators that separating out the ATC enterprise was “worth it”.²⁸ The International Civil Aviation Organization has also recognized the potential for efficiency and performance gains by separating ATC from government in its guidance.²⁹

While the United States used to be the unquestioned leader in aviation, FAA’s inability to modernize ATC has put this leadership into doubt. ATC providers around the world are increasingly looking to Canada’s independent ATC service provider, NavCanada, for its expertise in supplying and deploying the latest ATC systems.³⁰ NavCanada is also leading the effort to commercialize an American-invented technology to monitor air traffic from space

²² <https://www.airways.co.nz/>

²³ U.S. Government Accountability Office, “Air Traffic Control: Characteristics and Performance of Selected International Air Navigation Service Providers and Lessons Learned from Their Commercialization,” Rpt. No. GAO-05-769, p. 4, (Jul. 2005).

²⁴ *Id.*

²⁵ Glen McDougall and Alasdair Roberts, “Commercializing Air Traffic Control: Have the reforms worked?,” *Canadian Public Administration*, Vol. 51, No. 1, pp. 45-69, (Mar. 2008)

²⁶ *Id.* at 68.

²⁷ Dan Brown, Tom Berry, Steve Welman, and E.J. Spear, “CAA International Structures”, MITRE Product, MP140527 (Oct. 2014)

²⁸ *Id.* at 9.

²⁹ *ICAO’s Policies on Charges or Airports and Air Navigation Services*, Doc 9082, at I-1, Ninth ed. (2012).

³⁰ <http://www.navcanatm.ca/en/portfolio.aspx> & Alan Levin, “Paper-Pushing Flight Controllers See Future in Canada’s System”, (Apr. 12, 2016) <https://www.bloomberg.com/news/articles/2016-04-12/paper-pushing-flight-controllers-see-future-in-canada-s-system>.

around the globe. In the meantime, the FAA remains unable to acquire and deploy that same technology.³¹ Canada is not alone. The United Kingdom’s NATS service provider also actively markets its expertise around the world.³² The FAA, on the other hand, continues to focus its resources on its own customized systems, such as Standard Terminal Automation Replacement System (STARS) and its offshoots, which it began implementing in 1996.³³ The FAA is also working on its En Route Automation Modernization (ERAM) system. Sadly, FAA still requires manual handoffs by telephone of aircraft crossing the Northern border whereas Canadian controllers already have automated digital handoff tools.³⁴ Unless the United States changes course, it is plausible, or more likely inevitable, that American ATC will become a follower rather than the standard-setter in new ATC technologies.

FAA Personnel, Procurement, and Organizational Reforms Have Not Worked

While many opponents of separating ATC from the FAA call for “targeted” reforms of the FAA to address widely recognized problems, most of the reforms called for have already been tried and failed. Congress has attempted various legislative fixes starting in 1995, with reforms to FAA’s acquisitions and personnel systems.³⁵ The results have not been encouraging. Between 1996 and 2012, the FAA’s budget increased by 95 percent while productivity “decreased substantially.”³⁶ FAA was freed from federal procurement and personnel laws, but developed processes very similar to and with the same bureaucratic red tape, as the laws they were freed from. With limited exceptions, the FAA’s performance in procuring and managing the development and implementation of capital projects has not improved. In 1996, Congress required the FAA to develop a cost accounting system so it could measure its financial performance.³⁷ The FAA spent approximately \$66 million on the systems, but does “not regularly analyze the operational and cost data generated to determine if it could reduce costs or improve productivity.”³⁸

CONCLUSION

Bottlenecks, failures, and inefficiencies in the ATC system cascade throughout the rest of the aviation system and broader economy. The cost is growing larger and more apparent each year. The mismatch between bureaucratic decision-making of a government agency and the business decision-making required to ensure the long-term success of ATC in the United States

³¹ <https://aireon.com/news/>

³² “NATS and JANS strengthen relationship with formal agreement”, Mar. 8, 2017, <http://www.nats.aero/news/nats-jans-strengthen-relationship-formal-agreement/> & “Redesigning airspace in the UAE.” (undated): <http://www.nats.aero/news/projects/redesigning-airspace-in-the-uae/>

³³ *Supra*, footnote 19, Report No. AV-2016-015, at p. 11.

³⁴ Aaron Karp, “NATCA president: FAA falling behind on ATC technology”, *Air Transport World*, Aug. 24, 2016.

³⁵ *Department of Transportation and Related Agencies Appropriations Act, 1996*, Pub. L. 104-50, 109 Stat. 460, § 347(a) (Nov. 15, 1995); *Federal Aviation Reauthorization Act of 1996*, Pub. L. 104-264, §§ 253 & 276, (Oct. 9, 1996); *Wendell H. Ford Aviation Investment and Reform Act for the 21st Century*, Pub. L. 106-181, § 303, (Apr. 5, 2000); *FAA Modernization and Reform Act of 2012*, Pub. L. 112-95, § 204, (Feb. 14, 2012).

³⁶ *Supra* footnote 19, Report No. AV-2016-015 at pp. 2, 5.

³⁷ *Federal Aviation Reauthorization Act of 1996*, Pub. L. 104-264, § 276, (Oct. 9, 1996).

³⁸ U.S. Department of Transportation Office of the Inspector General, “Assessment of Cost Accounting System and Practices- Federal Aviation Administration”, Report No. FI-2008-045, p. 1 (Mar. 21, 2008); *Supra* footnote 19, Report No. AV-2016-015 at p. 10.

cannot be reconciled through further legislative reforms of the FAA. The proven and demonstrably successful approach of separation from government is the only approach to ensuring America's long-term leadership in aviation.

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