OPTIONS FOR FEDERAL AVIATION ADMINISTRATION AIR TRAFFIC CONTROL REFORM

(114–11)

HEARING

BEFORE THE

SUBCOMMITTEE ON
AVIATION

OF THE

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TRANSPORTATION AND
INFRASTRUCTURE
HOUSE OF REPRESENTATIVES

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March 20, 2015

SUMMARY OF SUBJECT MATTER

TO: Members, Subcommittee on Aviation
FROM: Staff, Subcommittee on Aviation
RE: Subcommittee Hearing on "Options for FAA Air Traffic Control Reform"

PURPOSE

The Subcommittee on Aviation will meet on Tuesday, March 24, 2015, at 10:00 a.m. in 2167 Rayburn House Office Building to hold a hearing on options for reforming air traffic control (ATC) operations at the Federal Aviation Administration (FAA). The Subcommittee will receive testimony from the Office of the Inspector General of the Department of Transportation (DOT IG), a former chief operating officer of the FAA's Air Traffic Organization (ATO), the Vice Chairman of the FAA Management Advisory Council, a former White House National Economic Council, Department of Defense and Public Buildings Service official, and representatives of Airlines for America (A4A), the National Air Traffic Controllers Association (NATCA), and the Reason Foundation.

BACKGROUND

The United States aviation system is an economic driver, contributing roughly five percent to the Nation's gross domestic product and supporting 11.8 million American jobs.[1] This vital economic sector depends upon a safe, efficient and modern air traffic control system. The United States air transportation system transports millions of passengers and moves billions in revenue ton-miles of freight using a network of airways, interconnected by a ground-based network which provides necessary air traffic control.[2]

The FAA's Air Traffic Organization (ATO) provides air traffic control (ATC) services within U.S. and certain international airspace. U.S. airspace is the most expansive in the world,

[1] Fed. Aviation Admin., *The Economic Impact of Civil Aviation on the U.S. Economy* 9, 12 (June 2014), *available at* http://www.faa.gov/air_traffic/publications/media/2014-economic-impact-report.pdf.
[2] "Economic Impact of Civil Aviation on the US economy", FAA Air Traffic Organization, August 2011.

covering roughly 30.2 million square miles that make up more than more than 17 percent of the world's airspace.[3] Within that airspace, FAA air traffic controllers handle roughly 50,000 operations daily.[4] As the demands on the air traffic system have changed over time, Congress and several presidential administrations have sought reforms to improve safety and efficiency and to accelerate modernization projects.

HISTORY OF FAA AND AIR TRAFFIC CONTROL

Modern aviation in the United States first began in the dawn of the twentieth century. In recognition of the need for federal oversight and promotion of the aviation industry, Congress passed into law the *Air Commerce Act of 1926* which created the Aeronautics Branch (renamed the Bureau of Air Commerce in 1934) within the Department of Commerce. This Act tasked the federal government with fostering air commerce, as well as directing the promulgation of regulations in the issuance and enforcement of air traffic rules, certification of pilots and aircraft, and operation and maintenance of air navigation aids.[5] By the mid-1930s the growth of air transportation demanded the beginning of air traffic control, with some airports providing basic visual signals for pilots.[6]

In 1934, a group of airlines created the first air traffic control centers.[7] Throughout the following decades, the responsibility for aviation safety and air traffic control transitioned to the federal government and through a variety of different federal agencies. Many of these transitions were prompted by high profile accidents, which caused Congress to reassess the role of the federal government in ensuring the safe operation of the national airspace system. In 1956, a midair collision between two commercial aircraft over the Grand Canyon resulted in the deaths of 128 passengers. In 1958, two separate midair collisions further spurred the need to reexamine the federal government's role in overseeing aviation safety.[8] In response, the Federal Aviation Agency was created as an independent agency with the responsibility of aviation safety, air traffic control and modernization.[9] In 1966, Congress moved the Federal Aviation Agency into the newly created Department of Transportation and renamed the agency the Federal Aviation Administration (FAA).[10]

Since the initial creation of a rudimentary air traffic control system in the 1930s, air traffic control has evolved to try to keep pace with the demands of air transportation. The ATO today operates several types of air traffic control facilities, largely within delineations created in 1958, with radar as the primary means of tracking aircraft in flight. Airport traffic control towers

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[3] Federal Aviation Administration. "Air Traffic Organization." https://www.faa.gov/about/office_org/headquarters_offices/ato/

[4] Speech of FAA Administrator Michael Huerta before the Aeroclub 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] "FAA's History Chronological 1926-1996." May 20, 1926. https://www.faa.gov/about/media/b-chron.pdf

[6] Federal Aviation Administration. "A Brief History of the FAA." https://www.faa.gov/about/history/brief_history/

[7] Id.

[8] "FAA's History Chronological 1926-1996." June 10, 1956 and April 21, 1958. https://www.faa.gov/about/media/b-chron.pdf

[9] "FAA's History Chronological 1926-1996."April 21, 1958. https://www.faa.gov/about/media/b-chron.pdf

[10] *Department of Transportation Act.* (P.L. 89-670). (1966)

control aircraft movements on the ground and within the vicinity of airports; terminal radar approach control (TRACON) facilities provide ATC services to aircraft up to about 40 nautical miles from airports and at varying altitudes; and air route traffic control centers (ARTCC) provide ATC services to aircraft at high altitudes and other airspace outside terminal areas.[11] While technology modifications have been made over the decades, these facilities are still dependent upon controlling their airspace using radar technology from the 1950s.

AIR TRAFFIC CONTROL MODERNIZATION

In 1981, the FAA began an effort to modernize the air traffic control system by updating facilities and equipment to meet the anticipated demands of a growing volume of post-Deregulation air traffic.[12] At the time, the modernization was estimated to cost roughly $12 billion[13] and take more than 10 years to complete.[14] However, in the ensuing years the effort encountered cost overruns, schedule delays, and performance shortfalls, which resulted in calls to reform the FAA. Throughout the 1990s the Clinton Administration developed several different proposals to reform the FAA's organization.

In addition to these organizational reforms, ongoing attempts to modernize the air traffic control system were initiated by the FAA. In 1988, the FAA awarded a contract to IBM Corp. to develop the Advanced Automation System (AAS), which was intended to replace computer hardware and software in ATC facilities.[15] The AAS contract was valued at $3.5 billion initially; however, due to cost overruns and program delays, the contract was restructured in 1994 with an estimated $7 billion cost.[16] Eventually, parts of the AAS project were terminated, with the en-route and tower segments of the original contract moving forward after being renamed and redefined. The segment of the contract for AAS in terminal facilities was spun off into a new contract known as the Standard Terminal Automation Replacement System (STARS). In a 1998 report on the topic, the then-DOT IG stated that the project "did not suffer from lack of funding" but that the AAS "failed because of overambitious plans" and "poor FAA oversight of contractor performance." The AAS program resulted in roughly one billion dollars that "was wasted."[17] In light of the problems facing the FAA's modernization efforts in the mid-1990's, a new series of

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[11] FAA. "Roles and Responsibilities of Air Traffic Control Facilities." **http://www.faa.gov/jobs/career_fields/aviation_careers/atc_roles/**

[12] This included plans to replace the computers at air route traffic control centers with new software, consoles and displays, facility consolidation, new secondary radars, upgraded weather services and a new landing system. Government Accountability Office. "FAA's Plan To Improve the Air Traffic Control System," AFMD-83-34: 1983. http://www.gao.gov/assets/140/139683.pdf

[13] Government Accountability Office. " Transportation: Examination of the Federal Aviation Administration's Plan for the National Airspace System--Interim Report." AFMD-82-66: 1982. Pg. 2- This report claims initial estimates to be roughly $10 billion, however a later GAO report states the $12 billion figure.

[14] Dillingham, Gerald L. Government Accountability Office. Testimony before the Subcommittee on Aviation, Committee on Transportation and Infrastructure, House of Representatives. "FAA's Modernization Efforts- Past, Present and Future." October 30, 2003. Pg. 1

[15] Department of Transportation Inspector General. "Advance Automation System: Federal Aviation Administration" Report Number: AV-1998-113 April 15, 1998. Pg. 5

[16] Department of Transportation Inspector General. "Advance Automation System: Federal Aviation Administration" Report Number: AV-1998-113 April 15, 1998. Pg. 5.

[17] Id. Pg. 2 and 3.

reforms were enacted to address possible causes of delays in modernization. In a 1995 Appropriations bill (P.L. 104-50), the FAA was directed to implement new acquisitions and personnel systems.[18] The acquisitions system was to be implemented in conjunction with guidance from non-governmental experts, to address the "unique needs" of the FAA.[19] The following year, Congress passed the *FAA Reauthorization Act of 1996 (FAA Act of 1996)* (P.L. 104-264). Recognizing that the "[FAA] must become a more efficient, effective and different organization to meet future challenges," the *FAA Act of 1996* also established a Management Advisory Council (MAC) to "submit comments, recommended modifications, and dissenting views" to the Administrator on issues such as "management, policy, spending, funding or regulatory matters affecting the aviation industry."[20] The MAC was comprised of 15 members; two members were designees of the Secretary of Transportation and Secretary of Defense. The remaining 13 members were presidential appointees who were experts in "disciplines relevant to the aviation community and who [were] collectively able to represent a balanced view of the issues before the FAA." [21] The *FAA Act of 1996* also included reforms regarding the new personnel management system and required the FAA to terminate any acquisition program that was fifty percent over cost, or failed to achieve half of the performance goals or was more than fifty percent behind schedule. [22] (See Appendix A for a table summarizing major FAA reform legislation since 1995.)

As part of the continuing effort to reform the FAA, Congress passed the *Wendell H. Ford Aviation Investment and Reform Act for the 21st Century (AIR 21)* (P.L. 106-181). *AIR 21* tasked the MAC, through the Air Traffic Services Subcommittee, to oversee air traffic control modernization. In addition, *AIR 21* created the Chief Operating Officer for the air traffic system.[23] The Chief Operating Officer (COO) was answerable to the FAA Administrator, and was to have "demonstrated ability in management and knowledge of or experience in aviation."[24]

Shortly after enactment of *AIR 21*, President Bill Clinton issued an executive order on December 7, 2000, establishing the Air Traffic Organization (ATO) within the FAA to run the ATC system under the direction of the Chief Operating Officer. The order created the ATO as

> "...a performance-based, results-oriented, organization. The ATO will be better able to make use of the unique procurement and personnel authorities that the FAA currently has and to better use the additional management reforms enacted by the Congress this year . . . ."[25]

Despite the FAA having put in place the required reforms, in the beginning of the 2000's concern again arose regarding the FAA's ability to modernize the airspace system. In response

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[18] *Department of Transportation and Related Agencies Appropriations Act, 1996*. P.L. 104-50. §347 and §348. (1995).
[19] *Id.*
[20] *FAA Reauthorization Act of 1996 (FAA Act of 1996)*(P.L. 104-264)§230 (1996).
[21] Id.
[22] *FAA Reauthorization Act of 1996 (FAA Act of 1996)*(P.L. 104-264) §225,§252, §253(1996).
[23] It was not until 2003 that the FAA hired a Chief Operating Officer.
http://www.faa.gov/news/press_releases/news_story.cfm?newsId=5649
[24] *Wendell H. Ford Aviation Investment and Reform Act for the 21st Century.* (P.L. 104-264) §303 (2003)
[25] *Air Traffic Performance-Based Organization.* Executive Order 13180 (Dec. 7, 2000).

the Bush administration and Congress moved forward with additional reforms. In 2003, the Government Accountability Office (GAO) testified before the Subcommittee on Aviation that, since 1981, the FAA's modernization project "consistently experienced cost, schedule and performance problems," and that while initial cost of the effort was estimated at $12 billion in 10 years, by 2003 the program was two decades old and $35 billion dollars had been spent with an additional $16 billion needed to complete "key projects."[26] In 2003, in *Vision 100—Century of Aviation Reauthorization Act (Vision 100)*, Congress clarified that the Chief Operating Officer would be responsible for overseeing "the day-to-day operational functions of the Administration for air traffic control";[27] and made changes to the size and membership of the MAC and the Air Traffic Services Subcommittee. *Vision 100* contained additional personnel reforms and established the Joint Planning and Development Office (JPDO).[28] The JPDO was responsible for creating an integrated plan for the Next Generation Air Transportation System (NextGen), overseeing research and development of the system, creating a transition plan, coordinating aviation and aerospace research within the Federal government with U.S. aviation and aerospace firms, and facilitating technology transfer from research programs in other agencies.[29] The goal of the JPDO was not only to develop an integrated plan for NextGen, but to improve the "level of safety, security, efficiency, quality, and affordability of the National Airspace System and aviation services."[30] However, roughly a decade later, the *Consolidated Appropriations Act, 2014* eliminated the JPDO's funding because "FAA [had] failed to establish a clearly defined role for the JPDO and set expectations for how it will leverage research conducted by other Federal agencies."[31]

Next Generation Air Transportation System (NextGen)

In 2003, *Vision 100* was the first legislation which addressed the FAA's air traffic modernization efforts under its new name "NextGen". NextGen is a $40 billion program that was initially slated to be completed by 2025 to transition the nation's airspace from a 1950's radar based system to advanced technology air-traffic management.[32] In 2003, NextGen was envisioned as a fundamental reengineering of our nation's airspace to reduce congestion and delays, increase capacity, while further improving safety and reducing aviation's environmental impact. NextGen is currently comprised of several different technologies; these include En-Route Automation Modernization (ERAM), Data Communications (DataCom), Automatic Dependent Surveillance Broadcast (ADS-B), and Terminal Automation Modernization and Replacement (TAMR).[33]

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[26] Government Accountability Office, *"FAA's Modernization Efforts—Past, Present, and Future,* Rpt. No. GAO-04-227T (2003).
[27] *Vision 100—Century of Aviation Reauthorization Act*, P.L. 108-176, § 203 (2003).
[28] *Id.* § 709.
[29] *Id.*
[30] *Id.* §709(c).
[31] *The Consolidated Appropriations Act, 2014.* P.L. 113-76 (2013).
[32] Statement of Matthew E. Hampton, U.S. Department of Transportation Inspector General before the Committee on Commerce, Science, and Transportation, Subcommittee on Aviation Operations, Safety, and Security United States. "Progress and Challenges in Meeting Expectations for NextGen." June 25, 2014. Pg. 3
[33] Federal Aviation Administration. "NextGen Implementation Plan," August 2014.

One foundational program needed for NextGen, ADS-B, is anticipated to utilize technologies (both new and old) to provide information to pilots and air traffic controllers throughout flights. ADS-B requires a network of both ground-based radio stations and aircraft with avionics that are ADS-B rule compliant. This technology would provide controllers with more accurate aircraft tracking, and enable aircraft to "see" other aircraft.[34] The *Federal Aviation Administration Modernization and Reform Act of 2012* (P.L. 112-95) mandated a rulemaking on ADS-B In equipage and required equipage with ADS-B In by 2020 for all aircraft operating in capacity-constrained airspace and airports. So far the federal government has invested roughly $1.5 billion dollars in ADS-B. However, a recent DOT IG report found that in the FAA's initial cost- benefit case for ADS-B the costs outweigh the benefits by roughly $588 million.[35]

The FAA's efforts to modernize air traffic control have been informed by and benefitted from the observations and recommendations of governmental bodies such as the Government Accountability Office, the DOT OIG, and also Federal advisory committees such as the Radio Technical Commission for Aeronautics (RTCA). RTCA, which was founded in 1935 and functions primarily as a technical standards-setting body, convened a task force that provided the FAA with recommendations on its implementation of NextGen in 2009.[36] Those recommendations led to the creation of what is known as the NextGen Advisory Committee (NAC) which is comprised of 28 members representing government and private sector organizations. The NAC was created to foster collaboration between industry and the federal government and also provide guidance to the FAA regarding NextGen implementation. The NAC has been, to date, chaired by individuals with airline chief executive experience. [37]

As in previous decades, in 2012, Congress again attempted to address issues facing FAA's NextGen programs. One of the main reforms established in the *FAA Modernization and Reform Act of 2012* was the creation of Chief NextGen Officer (CNO). The law directed that the CNO, who would be responsible for coordinating the implementation of NextGen, would "review and provide advice on the Administration's modernization programs, budget and cost accounting system" for NextGen.[38] This reform established an Officer within the FAA who is accountable for the progress and implementation of NextGen.

As with previous air traffic control modernization efforts, concerns have been raised regarding FAA's implementation of NextGen technology and procedures.[39] In 2013, the DOT IG found that "longstanding programmatic and organization challenges.... further undermine NextGen's progress." In addition, the DOT IG stated that the FAA's NextGen plans were "overly ambitious" and that the FAA has "yet to develop an executable implementation plan that

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[34] Inspector General of the Department of Transportation. "FAA Faces Significant Risks in Implementing the Automatic Dependent Surveillance–Broadcast Program and Realizing Benefits." AV-2011-002, October 12, 2010.
[35] Inspector General of the Department of Transportation. "ADS-B Benefits Are Limited Due to a Lack of Advanced Capabilities and Delays in User Equipage" AV-2014-105 Date Issued: September 11, 2014.
[36] RTCA. "About Us." http://www.rtca.org/content.asp?pl=49&contentid=49
[37] RTCA. "NextGen Advisory Committee." http://www.rtca.org/content.asp?pl=61&contentid=61
[38] *FAA Modernization and Reform Act of 2012.* P.L. 112-95 (2012) § 204.
[39] Department of Transportation Inspector General. "Addressing Underlying Causes for NextGen Delays Will Require Sustained FAA Leadership and Action" AV-2014-031. February 25, 2014. Pg. 1

addresses costs and technology development and integration."[40] To address concerns regarding implementation of NextGen, the FAA has reorganized three times in the past ten years. However it is unclear whether the reorganizations have had the desired impact.[41] Throughout the past three decades, both the GAO and the DOT IG have frequently raised the same concerns with FAA's modernization programs. These concerns include, but are not limited to, FAA's committing to acquisitions before requirements are fully understood; poor contract oversight; programs that are over budget and behind schedule; and lack of executable plans that address cost and technology development.[42] In the most recent modernization program, NextGen, the FAA has raised concerns with the funding levels it has received.[43] While the DOT IG has stated that funding of NextGen programs have not been a cause of delay,[44] the FAA and industry did experience a five year period in which there were 23 short-term extensions for the FAA.[45] Recent progress has been made through the "NextGen Priorities" in which the FAA and industry took priorities established by the NAC, and collaborated to develop an implementation plan with milestones, timelines and cost estimates to deliver long awaited, near-term benefits, to the aviation system.

It has been roughly eighty years since air traffic control was first utilized in the United States. Since the first efforts to control air traffic through visual signals by airports, the United States air traffic control system has evolved into a complex, interconnected system of airways that safely handles roughly 60 million aircraft annually.[46] While aircraft, aircraft engines, avionics and other aviation technology has modernized and evolved over the years, since 1981 the effort to modernize our air traffic control system has been riddled, with numerous delays and revisions. Given the importance of the aviation sector to the Nation's economy, and the role it plays in safely transporting millions of passengers and tons of cargo annually, not to mention supporting general aviation activities, it is crucial that the air traffic control system be efficiently and effectively modernized to keep up with the future needs of the country.

OVERVIEW OF FOREIGN AIR TRAFFIC CONTROL REFORM EFFORTS

Since 1987, over 50 nations have shifted the responsibility for providing ATC services from the national government to independent, self-financed ATC service providers.[47] While the vast majority of these service providers are government corporations, the ATC service providers

[40] Inspector General of the Department of Transportation. "Addressing Underlying Causes for NextGen Delays Will Require Sustained FAA Leadership and Action" AV-2014-031. February 25, 2014. Pg. 2.
[41] Id.
[42] Inspector General of the Department of Transportation. "Addressing Underlying Causes for NextGen Delays Will Require Sustained FAA Leadership and Action" AV-2014-031. February 25, 2014 and Government Accountability Office. "Selected Stakeholders' Perspectives on Operations, Modernization, and Structure" GAO-14-770: Published: Sep 12, 2014. Publicly Released: Sep 12, 2014.
[43] Committee on Transportation and Infrastructure. Subcommittee on Aviation hearing on "Causes of Delays to the FAA's NextGen Program." July 17, 2013. 2167 Rayburn House Office Building, Washington D.C.
[44] Id.
[45] Federal Aviation Administrator Michael Huerta. Speech before the Aeroclub of Washington "All for One, and One for All". October 16, 2014. Washington DC.
[46] FAA. "Roles and Responsibilities of Air Traffic Control Facilities." **http://www.faa.gov/jobs/career_fields/aviation_careers/atc_roles/**
[47] Robert W. Poole, Jr., "The Urgent Need to Reform the FAA's Air Traffic Control System," Reason Foundation. March 2007. Pg. 11.

of Canada and the U.K. are wholly or partially private and have arm's-length regulatory systems, meaning that their respective governments regulate them but do not run their day-to-day operations.[48]None of these countries have airspace systems as large or complex as the United States.

Last year, in response to a request by the Committee on Transportation and Infrastructure Majority, the DOT IG began a study on the performance of the air navigation service providers (ANSPs) of Canada, France, Germany, and the U.K. According to the DOT IG, since these countries commercialized their respective ANSPs (with the exception of France's ANSP, which is a government agency), there has been no evidence of any degradation in aviation safety levels. Similarly, a 2005 GAO report that studied independent, self-financed ATC service operators in Australia, Canada, Germany, New Zealand and the United Kingdom, found:

- the safety of air traffic control services "remained the same or improved" compared with when air traffic control services that were provided by government agencies;
- the five ANSPs lowered their costs and "improved efficiency" through investments in new technologies and equipment, eliminating some administrative positions or by consolidating ATC facilities; and
- all five ANSPs also invested in new technologies and equipment, which the ANSPs said lowered their costs by increasing controllers' productivity and produced operating efficiencies, such as fewer or shorter delays.[49]

GAO found that the reasons the five countries reformed their ANSPs were similar. Prior to commercialization, the government agencies responsible for ATC operations were underfunded, as evidenced by freezes on air traffic controller wages and insufficient funds to replace aging technologies.[50] Technology replacement programs often cost more, took longer, and delivered less than promised, and stakeholders complained about performance and customer service.[51]

In January 2006, MBS Ottawa, a consulting firm, prepared a comprehensive analysis of several commercialized ANSPs, including Australia, Canada, France, Germany, Ireland, Netherlands, New Zealand, South Africa, Switzerland, and the U.K.[52] Overall, the MBS study concluded that the governance and financing reforms implemented in these countries have been successes based on the following performance measures:

- safety was neutral or enhanced;
- modernization was greatly improved;

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[48] *Id.* Pg. 12.
[49] 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, July 2005. Pg. 4.
[50] *Id.* Pg. 5.
[51] *Id.* Pg. 19.
[52] MBS Ottawa, "Air Traffic Control Commercialization Policy: Has It Been Effective?" January 2006.

- service quality was improved;
- costs were generally reduced, significantly in some countries;
- financial stability was maintained; and
- public interest was neutral or positive in most areas.[53]

In October 2014, the MITRE Corporation prepared a report, at the request of the FAA, on six international civil aviation authorities (CAAs).[54] The six countries, the United Kingdom, Canada, New Zealand, Australia, France and Germany shared the experience of separating the ANSP from the government CAA. The CAAs were selected because their level of technological sophistication is similar to the FAA's and because their countries share many common economic and political characteristics with the United States, although none approximate the scale or complexity of the U.S. system.[55] In all cases, MITRE found that the separation of the ANSP from the CAA was reasonably successful.[56] While there were difficulties in the shift to an independent regulator of a corporatized ANSP, adjustments were made in response to the difficulties encountered.[57] The CAAs interviewed by MITRE were unanimous in stating that the separation of the ATC from the CAA was worth it.[58] Among the benefits they expressed were an increased focus on safety by the regulator and the ANSP, improved efficiency of the ANSP, reduction in total cost to users, and improved participation by aviation stakeholders.[59]

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[53] *Id.* Pg. 24.
[54] Dan Brown, Tom Berry, Steve Welman and E.J. Spear, The MITRE Corporation, "CAA International Structures," October 2014.
[55] *Id.* Pg. 1.
[56] *Id.* Pg. 9.
[57] *Id.*
[58] *Id.*
[59] *Id.* Pg. 9 and 10.

WITNESSES

Mr. Matt Hampton
Assistant Inspector General for Aviation Audits
Office of the Inspector General
U.S. Department of Transportation

Mr. Douglas Parker
Chairman and CEO, American Airlines Group, Inc.,
on behalf of Airlines for America

Mr. Robert Poole
Director of Transportation Policy
Reason Foundation

Mr. Paul Rinaldi
President
National Air Traffic Controllers Association

Mr. David Grizzle

Ms. Dorothy Robyn

Mr. Craig Fuller
Vice Chairman
FAA Management Advisory Council (MAC)

Appendix A.

Major FAA reforms since 1995

Reform	**Mandated by . . .**	**Implemented in response to . . .**[60]
FAA required to implement personnel management system	Congress (1995 appropriations law)	FAA's stated need for greater flexibility in hiring, training, and locating employees
FAA required to implement acquisition management system	Congress (1995 appropriations law)	Cost overruns and schedule slippages in modernization programs of the 1980s and 1990s, particularly the Advanced Automation System
FAA's "dual mandate" of safety regulation and industry promotion eliminated	Congress (1996 FAA reauthorization)	Deficiencies in FAA's oversight of air carriers, revealed following ValuJet flight 592 accident in 1996
Overcost, overdue acquisition programs terminated	Congress (1996 reauthorization)	Cost overruns and schedule slippages in modernization programs of the 1980s and 1990s
FAA required to appoint Chief Operating Officer responsible for running ATC system	Congress (2000 reauthorization)	Management challenges associated with ATC system modernization
FAA directed to create Air Traffic Organization to run ATC system with accountability and performance management	President Bill Clinton (2000 executive order)	Congress's direction in 2000 reauthorization for appointment of a Chief Operating Officer
FAA required to appoint Chief NextGen Officer to manage intra-agency NextGen work	Congress (2012 reauthorization)	Continued delays in NextGen implementation

[60] For specific information on the basis for these reforms, *see* notes 18 through 45, *infra*, and associated text.

OPTIONS FOR FEDERAL AVIATION ADMINISTRATION AIR TRAFFIC CONTROL REFORM

TUESDAY, MARCH 24, 2015

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON AVIATION,
COMMITTEE ON TRANSPORTATION AND INFRASTRUCTURE,
Washington, DC.

The subcommittee met, pursuant to notice, at 10:01 a.m., in room 2167, Rayburn House Office Building, Hon. Frank A. LoBiondo (Chairman of the subcommittee) presiding.

Mr. LOBIONDO. Good morning. Thank you for coming. The committee will come to order.

Before we get started on the business of the committee this morning, I want to express from myself, Mr. Larsen, Mr. Shuster, and Mr. DeFazio our deepest condolences to the victims and families of those who lost their lives in the crash of Germanwings flight 9525 in southern France.

We do not have a lot of details. We know it was a terrible tragedy. We will be closely monitoring the investigation. Aviation safety has and will always continue to be a top priority of this subcommittee.

Over the last year, the subcommittee has held a series of roundtables and hearings on the state of our Nation's air traffic control system and identifying the challenges the FAA has faced in modernization and NextGen implementation. While we are currently enjoying the safest air traffic control system in the world, we should be striving to also be the most efficient that we can be. Historically, the United States has been the leader in aviation. However, the record is mixed on where we stand today.

For decades, policymakers and stakeholders have almost unanimously recognized the need to modernize our radar-based, World War II-era ATC system. The FAA has been attempting to modernize the system since 1981. The DOT Office of Inspector General, the Government Accountability Office, and numerous bipartisan Federal airline commissions found that FAA's progress with delivering planned NextGen capabilities has encountered a number of delays, cost increases, and failure to provide promised benefits to the traveling public and industry stakeholders.

In testimony before this subcommittee last year, DOT Inspector General Scovel warned that NextGen implementation costs for Government and industry, initially estimated at $20 billion for each, could double or even triple, and that NextGen implementation may take an additional decade, something I do not believe any of us believe is acceptable.

While stakeholders unanimously support NextGen, they have been unable to agree on how to address these well-documented implementation obstacles. As Chairman Shuster has stated, the committee has an historic opportunity to drive the institutional change needed to ensure that we have the very best ATC system in the world.

Three years of Federal budget disputes have included the FAA's decision in April 2013 to furlough 10 percent of its air traffic controller workforce and nearly close 149 contract towers to meet sequester-driven budgetary cuts, the partial shutdown of the FAA in August 2011, and schedule delays and cost overruns that continue to plague FAA's modernization and NextGen implementation efforts.

These are distressing realities, but may be just the impetus needed to drive change—specifically, whether it is time to transform and/or transfer the air traffic control function of the FAA, currently managed by the Air Traffic Organization.

The United States is the only developed country whose ATC system can become a political football, frequently held hostage to Federal budget disputes like the sequester, which threatens not only the ongoing operations of the ATC system, but also the successful implementation of NextGen. I believe, and I know Chairman Shuster believes, that unless we reform our ATC system's governance and funding structures, we risk failure in implementing NextGen and its full benefits to the country.

While there may not be consensus among stakeholders yet on the type of model that the U.S. should pursue, there is a growing consensus that comprehensive financing and governance reforms are needed. Furthermore, there is an acknowledgment that we are not fully using FAA assets and expertise readily available, including the FAA flagship Technical Center in my district, to their fullest to solve these vexing issues. We can and must do better.

I look forward to hearing from our witnesses their thoughts on different opinions and options for reform of our Nation's air traffic control system. Let me emphasize that ensuring we continue to have the safest aviation system in the world will drive the ATC reform debate in the months ahead.

As the subcommittee seeks to address these longstanding obstacles to ATC modernization and NextGen implementation in the next FAA reauthorization bill, there are questions that we need to address at today's hearing. Does the United States have the best governance and funding structure in place to deliver the most efficient, most modern ATC system while ensuring the safest system in the world? Have the ATC models used by other countries enhanced safety and efficiency, and if so, can the best attributes of these models be adopted by the United States without adversely impacting safety?

And before I recognize Mr. Larsen for his comments, I ask unanimous consent that all Members have 5 legislative days to revise and extend their remarks and include extraneous material for the record of this hearing. Without objection, so ordered.

Now I would like to recognize Mr. Larsen for any opening remarks.

Mr. LARSEN. Thank you, Mr. Chairman. Turn your phones off, please. Thanks. Thanks for calling this hearing to explore alternatives to FAA air traffic management. I appreciate the continued bipartisan cooperation as we move towards a timely FAA bill.

Today we are going to hear from witnesses with a variety of ideas about how to improve efficiency and certainty in the management of our Nation's airspace. I welcome any discussion of what we need to do to keep our airspace the most efficient and safest in the world.

But before we address that, we do have to ask that basic question: What is the problem we are seeking to fix? The GAO reported last year that 71 of 76 aviation stakeholders said the air traffic control system is very to extremely safe.

Today no one would argue the airline industry as well is the healthiest it has ever been due largely to the efforts of the industry and the FAA to improve efficiencies over the last decade. The International Air Transport Association projects airlines worldwide, in fact, are expected to make a collective $25 billion profit in 2015.

IATA also suggests that U.S. carriers would continue to set the standard for financial performance, with the highest profit margins worldwide. That is good news since a healthy airline industry is critically important for international competitiveness.

We are also living in the safest period in aviation history in the U.S. Every day, U.S. airlines safely transport about 2 million passengers around the country. And with the important safety improvements that Congress mandated following the tragic Colgan Air crash in 2009, the aviation system is getting even safer.

At the same time, NextGen implementation has faced hurdles. And I want to be clear: FAA is making progress. In fact, GAO reported last year that only 5 of 76 aviation stakeholders said they had little to no confidence in the FAA's ability to implement NextGen.

At this time last year, we were uncertain when we would see a plan for implementing DataComm. Now, in response to a tasking by Chairman LoBiondo, the FAA has a plan, with industry support, to implement DataComm. At this time last year we were uncertain about the path forward for performance based navigation, or PBN procedures. Now, again in response to our tasking, the FAA has a plan, with industry support, to accelerate PBN procedure implementation. And the list goes on.

Airlines are making money. The system is safe. And the FAA, with close congressional oversight, is making progress on NextGen. So the question has to be asked, what is the problem we are trying to tackle when we talk about reforming our air traffic control system?

Well, when I talk to 10 stakeholders, I hear about 20 different problems. When I talk to even just 1 stockholder about proposed solutions, such as a private corporation model, I immediately think of at least 14 issues, including: What bargaining protections would apply to employees in the new entity? Would employees maintain Federal benefits?

How would the new organization work seamlessly with the FAA to move NextGen forward? What kind of liability insurance would the new entity have? How would the new entity coordinate with

the Department of Defense in time of crisis? And would small communities be guaranteed service as the new entity gains efficiencies by closing towers?

Mr. Chairman, with your permission I would like to enter, with unanimous consent, another 57 questions I have, for a total of 63 questions, into the record.

Mr. LOBIONDO. I thought the limit was 60.

Mr. LARSEN. Make it 60. You pick the three you do not want.

Mr. LOBIONDO. Without objection, so ordered.

[The information follows:]

Unanswered Questions Regarding
Possible Reform of the Nation's Air Traffic Control System
Submitted by Aviation Subcommittee Ranking Member Rick Larsen

1. What requirements and authorities are necessary to ensure that the residual FAA, as aviation safety regulator, conducts robust oversight and surveillance of the operations of the air navigation service provider ("the new organization")?

2. How will the residual FAA attract and retain a workforce with the skills and expertise in air traffic control necessary to conduct robust oversight and surveillance of the safety of the new organization's operations?

3. What collective-bargaining rights will apply to the employees of the new organization?

4. What requirements will apply to selection by the new organization's various employee groups of a collective-bargaining representative?

5. What terms, conditions, and protections will apply to employment with the new organization, particularly as regards the terms, conditions, and protections that apply to Federal or FAA employees under title 5, U.S. Code, or the FAA's personnel management system?

6. What pension arrangements will apply to the employees of the new organization who are FAA employees and transition, with no break in service, from the FAA to the new organization?

7. What pension arrangements will apply to the employees of the new organization who are hired after the date the new organization assumes responsibility for air navigation services?

8. If the new organization is a governmental entity, under what legal authority will the new organization collect user fees in excess of its operating costs?

9. Will the new organization be a governmental entity for purposes of the organization's authority to levy user fees, set uniform safety standards, and condition access to the National Airspace System upon payment of fees or charges? If so, what existing or proposed laws would define the legal limits of the new organization's authority?

10. What protections, particularly regarding immunity from disciplinary action, will be extended to employees of the new organization who make voluntary disclosures of safety information?

11. What requirements are necessary to ensure the new organization implements voluntary safety reporting programs?

12. If the new organization is not a governmental entity, what requirements are necessary to ensure the new organization is owned and controlled by U.S. citizens?

13. What requirements are necessary to ensure that the residual FAA, as safety regulator, has complete access to any and all safety-related data, documents, materials, and information in the custody or control of the new organization?

14. What requirements are necessary to ensure that the National Transportation Safety Board has complete access to any and all safety-related data, documents, materials, and information in the custody or control of the new organization, which the NTSB may seek in discharging its responsibilities?

15. What requirements, if any, are necessary to protect information provided to a government agency by the new organization from public disclosure under the Freedom of Information Act, 5 U.S.C. § 552, if a compelling public interest requires the confidentiality of such information?

16. What requirements are necessary to ensure the new organization provides continuous services and support to the Department of Defense?

17. What requirements are necessary to ensure the new organization does not levy any charge, fee, or other monetary assessment to the Department of Defense?

18. What provisions are necessary to ensure the new organization remains solvent, provides continuous operations, and maintains a constant level of safety despite any downturn in aircraft movements in the United States?

19. What provisions are necessary to ensure that the new organization will collect revenue sufficient to permit continuous operations and to maintain a constant level of safety?

20. If trade associations select directors to serve on the board of the new organization, what criteria will those associations use in making their selections?

21. What statutory immunities or limits on liability should apply to the new organization with respect to claims for damages arising from aircraft accidents or incidents?

22. What evidence exists to support the conclusion that the new organization will, in fact, be able to obtain sufficient liability insurance from the private market?

23. What evidence exists to establish that the U.S. government will not need to indemnify or provide other financial support to the new organization to cover losses associated with legal liabilities?

24. What specific authorities or provisions will permit the new organization to consolidate air traffic control facilities in a cost-effective manner despite potential congressional objections?

25. What specific decisions would users, including airlines, make on the board of directors of the new organization that would accelerate NextGen implementation and that would not require follow-up safety action by the residual FAA?

26. What specific evidence exists to support the conclusion that delays in NextGen implementation are attributable to the FAA Air Traffic Organization, rather than to the Office of Aviation Safety?

27. What funding configuration would be necessary to ensure the residual FAA and the Office of the Secretary (OST) retain sufficient resources to operate aviation programs, including robust aviation safety surveillance and oversight, grants-in-aid for airports, payments to air carriers, and other economic regulatory activities?

28. What would be the General Fund contribution to funding for aviation programs?

29. If user-fee revenue is to be allocated to funding for any aviation programs under the responsibility of the residual FAA or OST, under what legal authority, if any, would the new organization transfer such revenue?

30. Which agreements between the United States and other countries with adjacent flight information regions would need to be modified for the new organization to assume responsibility for air traffic control?

31. Approximately how much annual funding would be available for airport development grants?

32. What would be the source of annual funding for airport development grants?

33. If the passenger facility charge cap is lifted in conjunction with establishment of the new organization, approximately how much revenue for each category of affected airports would such an increase generate?

34. To what extent could downturns in passenger traffic affect the availability of funding for airport improvement projects?

35. How specifically would the new organization access a level of capital sufficient to make investments in air traffic control modernization projects?

36. What limitations would apply with respect to the new organization's debt load?

37. Would the new organization assume ownership of the air traffic control facilities and equipment currently owned by the Federal government?

38. Specifically how, and with what funds, would the new organization acquire the facilities and equipment referenced in question 37?

39. What legal authorities would govern any transaction or transfer involving the facilities and equipment referenced in question 37?

40. What provisions would ensure that the board of directors will adopt a schedule of user charges that does not adversely affect the system access and interests of any group of users?

41. What provisions would ensure that the new organization's schedule of user charges will provide for a level of service that meets demand?

42. What provisions are necessary to ensure that the new organization does not reduce the level of service in a manner that reduces system capacity (without a concomitant reduction in demand) or that adversely affects safety?

43. Will employees of the new organization receive whistleblower protections?

44. What authorities and requirements are necessary to permit the new organization to issue debt?

45. What is the approximate fair value of the facilities and equipment that the new organization would need to acquire to provide air navigation services and to undertake modernization efforts?

46. What contracts between the FAA and non-Federal service providers and suppliers must be modified or renegotiated for the new organization to perform its duties?

47. What risks and costs are associated with modification or renegotiation of existing contracts referenced in question 46?

48. What are the Congressional Budget Office scoring implications of any transfers of government property to the new organization?

49. Would the new organization have authority to decommission existing facilities and equipment, such as radio navigation aids?

50. If the new organization has authority referenced in question 49, would the process for decommissioning such equipment be subject to public notice and comment?

51. What legal authorities would affect the new organization's ability to enter into contracts that impose liabilities greater than the organization's projected revenues in any given year?

52. What legal authorities would affect the new organization's ability to apply user fees in excess of its operating costs toward the payment of debt?

53. What process would apply for the new organization to assume assignments of radio spectrum currently allocated to the FAA for aeronautical purposes?

54. What requirements must Congress place on the new organization to ensure that airspace modernization projects remain on track and produce benefits?

55. What administrative costs would the new organization incur in assessing user fees or other charges?

56. What requirements are necessary to ensure the new organization adopts a robust safety culture?

57. What are the Congressional Budget Office scoring implications of any proposal that involves ending excise taxes and establishing a user fee regime for operation of the air traffic control system?

58. What are the Congressional Budget Office scoring implications of any proposal that involves ending excise taxes and funding the residual FAA's operations and capital accounts from the General Fund?

59. What role and authorities would the Department of Defense have in ensuring that the new organization's decisions and operations do not undermine national security or military operations?

60. Would the new organization require rulemaking authority to mandate equipage and take other necessary regulatory actions?

61. Would the new organization be a governmental entity or a private entity?

62. If the new organization is a private entity, would it be constitutional under the non-delegation doctrine for Congress to delegate regulatory authority to the organization?

63. What protections would ensure that the board of directors of the new organization does not take action that deprives any person or stakeholder group of due process?

64. What would be the effect of the proposed reform for contracting opportunities for disadvantaged business enterprises in airport improvement projects?

65. What requirements and standards will apply with respect to the new organization's recruitment and retention of a diverse workforce?

Mr. LARSEN. Thanks. So I want to make sure that we are all clear on whether we should address many problems with one solution or whether we should be addressing these problems individually. We must make sure the FAA authorization is not a science experiment because with 2 million passengers in the skies on any given day, we must remember what is at stake if we make changes to our safe air traffic control system.

If we resolve to go big in this bill with significant air traffic reforms, we have to do it methodically, with a clear statement of the problem that we are trying to solve and a clear understanding of how to solve it without compromising safety in any way.

Finally, I want to note something that is not a surprise to anyone here. We have 6 months to pass an FAA bill. There are many issues to address with ATO reform. I do not think any of our witnesses will tell us today that the diverse interests in this industry are coalescing around a single proposal.

Without that happening, I find it difficult to foresee an on-time FAA authorization bill if we tackle this topic. If stockholders want to push for a proposal, they need to put something on the table or risk heading us down the chaotic path of multiple short-term FAA bills, as we have had before the most recent authorization. That will only contribute to reform proponents' claims about the damaging impacts of unstable and unpredictable funding.

And I am hopeful we can make progress on these issues today. And before that, I would as well like unanimous consent to enter in the record DOD Policy Board on Federal Aviation in response to discussion regarding privatization of U.S. air traffic control services, essentially, a DOD statement of issues they would like to address should we move forward on any planned privatization, commercialization, or whatever other term we want to give it.

Mr. LOBIONDO. Without objection, so ordered.

[The information follows:]

BULLET BACKGROUND PAPER

ON

DOD POLICY BOARD ON FEDRAL AVIATION (PBFA) RESPONSE TO DISCUSSION REGARDING PRIVATIZATION OF US AIR TRAFFIC CONTROL SERVICES

PURPOSE
To provide DoD PBFA coordinated response to US House Aviation Subcommittee regarding the topic of Commercialization/Privatization of U.S. Air Traffic Control (ATC) services.

BACKGROUND
Various Government Accounting Office (GAO) Reports to Congressional Requesters have been developed discussing both the commercialization of ATC services in the US:

- In 2005, the DoD was among 76 industry stakeholders interviewed regarding perspective on potential modification of how US ATC operations are funded; however, no specific proposals or formulas presented for collection of user fees discovered which could serve as a basis to develop a formal position.

DISCUSSION
The DoD Policy Board on Federal Aviation Executive Director offers the following salient points which outline DoD equities in the provision of US ATC services in the National Airspace System (NAS):

- DoD is also an Air Navigation Service Provider (ANSP), with more than 9,000 uniformed, civilian and contractor personnel operating air traffic control and landing systems and staffing more than 150 ATC facilities, providing 15-20% of US ATC Services alongside FAA.

- DoD provides flight inspection services in the NAS, as well as assistance in responding to actual or suspected hijackings, unidentified aircraft tracking and aviation search and rescue services.

- DOD is mandated to provide info sharing and info security advice and assistance to the FAA and NextGen program, requiring trusted agents with inherently governmental responsibilities.

- The NAS is a "Federal" system, not a product of a "Civil" Aviation Agency as in most other countries; the Act of 1958 established a unified National ATC System with DoD as a partner ATC service provider.

- Recognition of DoD's role in national security is reflected in the Act of 1958 which authorized the President to transfer control of the FAA and NAS to the Secretary of Defense; Executive Order 11161 provides for the President to execute the transfer in times of major conflict or war, placing the FAA under the direct control of the National Command Authority.

CONCLUSION
A condition precedent for any planned privatization would be resolving questions of how charges/costs would be apportioned among users, and how DoD would interact with any privatized entity for Defense and Security of the Nation and in time of crisis, where DoD controls and directs airspace actions. Costs may be a challenging issue given that the U.S. has long represented in the international context (DoD/State) that state aircraft are exempt from air navigation and related user fees, while also asserting (FAA) to other states that maintain privatized systems that all "users" should be charged equally. OSD entities, including the DoD Foreign Clearance Office and NORAD/USNORTHCOM, must engage along with Defense committees to ensure DoD equities are accurately represented as this topic develops.

Mr. LARSEN. With that, I yield back. Thank you.

Mr. LOBIONDO. I would now like to recognize Chairman Shuster.

Mr. SHUSTER. Thank you, Chairman LoBiondo, for holding the hearing today. And let me start off with what Mr. Larsen has pointed out. We have got 6 months to act, and to everybody that knows Washington, pressure is a great thing for us to have here. It energizes us and gets us going to work. So that pressure is there, and we need to make sure we take advantage of it.

Over the past 2 years we have held numerous meetings, listening sessions, roundtables, and hearings on the FAA's efforts to modernize our safe yet increasingly obsolete ATC system. We have also seen reams of GAO reports and inspector general's reports on the FAA's most recent ATC modernization initiative on NextGen.

The bottom line is that after three decades of various modernization attempts, billions of dollars have been spent and we are nowhere near where we need to be. While the FAA has spent approximately $6 billion to date on NextGen, passengers, shippers, and aircraft operators have seen few benefits. In fact, ATC delays are up at 13 of the 20 largest airports, and domestic flights take longer now than they did in 1977.

As our system approaches 1 billion passengers per year, under these circumstances two things will happen. One, every day at the airport will seem like the day before Thanksgiving. And two, we will lose our lead in aviation. Neither outcome is acceptable.

Let me emphasize that it is not an indictment of the FAA's leadership team, or the air traffic controllers, who are the best in the world. It is an indictment of a governance and financing structure that is broken beyond repair.

The underlying problem is that air traffic control is a high-tech service. The customers are companies and individuals who pay good money for the services they are provided. It is not a business. It is a vast Government bureaucracy.

As a Government agency, the FAA is simply not set up to determine risks, pursue the most cost-efficient investments, manage people to produce the best results, reward excellence, or punish incompetence like a normal business. In the same amount of time that we have pursued NextGen at the FAA in the last 10 years, Verizon has upgraded its wireless system not once, not twice, not three times, but four times in the last 10 years.

During this discussion, some have raised the questions of, "What problem are we trying to solve?" and "Why should we try to do this now?" Those are fair questions.

To answer what we are trying to solve, I would say that we are not just trying to solve a procurement problem or a human resources challenge. Past Congresses have tried to address narrow problems, but have little to show for it. The FAA has not really changed or gotten better.

What I want is for the United States to have the safest—and let me emphasize safest—most cost-effective, most technologically advanced ATC system in the world, bar none. We are not there and we will never get there on the current path. We have to step up to the broader challenges of getting it right and keeping America the leader.

And to answer "Why now?", air traffic control levels have declined by 15 percent since 2007, but the FAA and its budget have gotten larger. This is the right time to act. We have the breathing room and the imperative to get ourselves on course.

The only answer is transformational reform that will ensure that the ATC service provider operates like a business, with no degradation in safety levels. It has been done before. In the past 20 years, 50 countries have successfully separated the ATC service from the aviation safety regulator.

They have taken different approaches, but with similar results—ATC systems have been modernized, safety levels have been either maintained or improved, service quality has been improved in most cases, and costs have generally been reduced.

I believe the United States, with all of our talent, energy, and resources, can do just that or better. Given the size and complexity of our national airspace, we need to look at lessons learned and the best attributes of other countries and apply them to the United States.

The idea of reforming our system is not new. Bipartisan Federal aviation commissions during the Reagan and the Clinton administrations who have looked at it tried to tackle these issues. And no matter what course we take on air traffic control reform, we need to ensure that safety will not be compromised.

I look forward to hearing from our panel, and our panel today is very distinguished, many, many years of service to the industry, many years of looking at this problem. In fact, Mr. Poole said to me when I saw him back there, he said, "I hope I am prepared today." He has been preparing for 30 years for this hearing.

[Laughter.]

Mr. SHUSTER. As well, everybody on the panel has multiple years of experience here. And so for those of you new to the committee, you should really look at the backgrounds on these folks. These are truly the experts. They know the problems. They have the solutions. And we need to work with them to try to make sure that we do what is good for this country, do what is good for aviation in America and the world.

Thank you, and I yield back.

Mr. LOBIONDO. Thank you.

Mr. DeFazio?

Mr. DEFAZIO. Thank you, Mr. Chairman. I think it is clear we all have a common objective here. We want to maintain and improve upon the safest air traffic control system in the world. But we want to make it more nimble in terms of adopting new technology procurement moving forward.

But what is the major problem we are trying to solve? Well, I would say the 2-week partial shutdown of the FAA in the summer of 2011, when Congress and this committee failed to reauthorize the FAA; budget sequestration that caused furloughs, a hiring freeze, flight delays—that was a mess; the shutdown of the entire Government.

So the number one priority is to protect the FAA and Air Traffic Organization from Congress. Now, that is a tough task, but here we are. Let's see how we could tackle that. How can we protect it from the United States Congress?

Well, probably you could say, let's keep it the way it is, but let's give it mandatory spending authority. Move it off-budget. Right now we are only 9 percent short of self-funding. We can probably figure out where to get that 9 percent or save that 9 percent. And then, like five pages in this book of agencies and authorities that are exempt from sequestration, let's exempt it from sequestration. OK. That is one way to do it.

But that does not necessarily solve the bureaucracy problems. Past reorganizations dictated that the FAA would have its own procurement system. They essentially adopted the rules of the Federal procurement system. It would be substantially out from sequential levels of review at the Secretary's office and OMB and everywhere else. Those things came to naught, for a number of reasons.

So that past attempt at reform failed. We have bureaucratic problems that are apparent that are not easily dealt with. We have facilities that need to be consolidated or moved, and Congress often gets directly involved in that. So that could be solved with a BRAC process. You could look at trying to enforce those personnel reforms, but probably will not get there.

So then we could look at an independent Government agency, truly independent, with a board of directors or advisors and an Administrator. We could look at a Government corporation; one of the witnesses here today has that in his testimony, and he is not officially representing the MAC, but that seems to be perhaps where they are headed.

And people say, well, look. What is your example? The Postal Service? Well, not exactly. But then again, you forget that the reason the Postal Service is losing money today is because the United States Congress told them they have to prepay healthcare for 75 years. If we told an airline they had to prepay their employees' healthcare for 75 years, they would say, "You are nuts. We cannot do that. Nobody can do that." Well, we are making the Postal Service do it. So they are actually making money.

They are not the best example. We need a 21st-century Government corporation model, and there is not one to point to. We would have to create it. That is a lot of work. And then we have advocates of a private not-for-profit, looking at Nav Canada, which has many enviable attributes.

But there are a number of questions that arise if we move outside the Government sphere, independent agency, or Government corporation. One is, how do you value the assets and how are they going to pay for them? We have both physical assets and then spectrum, which the FAA does not have. It is not their asset. It is actually an FCC asset, which through the NTIA is annually licensed to the FAA. If you were to put that up for auction, it would be worth many, many billions of dollars. So you have got an asset issue.

What about safety? Some advocates say, "Well, we will leave safety with the Government. We will leave certification with the Government." Wait a minute. I thought certification was a big problem. Well, that means we are going to have to fix that. And then how is certification going to oversee the new air traffic system if they are separated? They say it works elsewhere. Yes, maybe it can work here, but I have concerns about that.

What about airport funding? We have massive needs. There is tremendous resistance to any increase in a PFC. But under this model, AIP would go away, so I do not know exactly how commercial airports would exist. I guess they would go to the European model, which is massive increase in landing fees, which I think would receive some resistance from some parts of the aviation community.

Pension arrangements were already raised by my colleague here. One member of the panel told me upfront, "No, they are going to go to defined benefit." Well, I do not think that would go over with the air traffic controllers. So we have some disagreement there.

And then there is something that we stumbled over last Friday, and I will be asking very exacting questions about this. Because of a recent court ruling by the DC Circuit reinforcing a court ruling from 1936 that the Government cannot delegate regulatory authority, and actually one of the briefs actually mentions air traffic control, there is a question of constitutionality here. And I would not want to spend a lot of time on something that ends up not being constitutional, create it and then have to see a future Congress very messily reintegrate it.

So a lot of questions to be answered, and I think we have a common goal, as I said at the outset. We want to reinforce the safest system in the world. We want to make it more nimble in procurement, less bureaucratic, provide better service to all of its aviation customers and stakeholders, and what is the best way to do that? And I look forward to hearing from the panel. Thank you, Mr. Chairman.

Mr. LOBIONDO. Thank you, Mr. DeFazio. Thank our witnesses for being here today.

Our first witness today is Mr. Matt Hampton, assistant inspector general for aviation at the United States Department of Transportation. Thank you for being here. We are looking forward to your comments.

TESTIMONY OF MATTHEW E. HAMPTON, ASSISTANT INSPECTOR GENERAL FOR AVIATION, OFFICE OF INSPECTOR GENERAL, U.S. DEPARTMENT OF TRANSPORTATION; DOUGLAS PARKER, CHAIRMAN AND CHIEF EXECUTIVE OFFICER, AMERICAN AIRLINES GROUP, INC., ON BEHALF OF AIRLINES FOR AMERICA; CRAIG L. FULLER, VICE CHAIRMAN, FEDERAL AVIATION ADMINISTRATION MANAGEMENT ADVISORY COUNCIL; PAUL M. RINALDI, PRESIDENT, NATIONAL AIR TRAFFIC CONTROLLERS ASSOCIATION, AFL–CIO; ROBERT W. POOLE, JR., DIRECTOR OF TRANSPORTATION POLICY, REASON FOUNDATION; DAVID GRIZZLE, CHIEF EXECUTIVE OFFICER, DAZZLE PARTNERS, LLC, FORMERLY CHIEF OPERATING OFFICER, AIR TRAFFIC ORGANIZATION, FEDERAL AVIATION ADMINISTRATION; AND DOROTHY ROBYN, AIRLINES/AVIATION CONSULTANT, FORMERLY PRINCIPAL, THE BRATTLE GROUP

Mr. HAMPTON. Chairman Shuster, Chairman LoBiondo, Ranking Member DeFazio, Ranking Member Larsen, and members of the subcommittee, thank you for inviting me to testify today. At the request of this subcommittee and the full committee, we are exam-

ining how FAA's organizational and financing structure compares with other countries.

My testimony today will focus on the four countries we examined: Canada, the United Kingdom, Germany, and France. I will briefly describe how they organize and finance their air transportation systems as well as how they develop and implement new technologies.

The four countries we examined have adopted a range of organizational structures, but they share some common characteristics. The four countries have commercialized their air navigation services to improve operations, cost-effectiveness, and the execution of capital projects.

Each of the four countries we examined have separated air traffic management from the safety regulator. They have organized their air navigation systems into independent air navigation service providers, commonly referred to as ANSPs. In addition, each service provider is self-sufficient, financed primarily through cost-based user fees. They also have the ability to finance their modernization efforts by issuing long-term bonds and other debt instruments. All four share a common commitment to cost control and to reducing cost to airspace users. Some have been more successful than others.

Now I would like to turn to how the service providers modernize and implement new technologies. We found that none of the four countries embark on large-scale modernization projects such as the NextGen transformational programs that FAA is pursuing today. Instead, they develop technology incrementally and rely on commercial off-the-shelf systems. This is a function of their size, complexity of the traffic they manage, and the number of facilities they operate.

Foreign air traffic service providers such as Canada and the U.K. have experienced some success incorporating new technologies to reduce controller workload and enhance productivity through data link communications and the implementation of electronic flight strips.

In addition, Canada, the U.K., and to some extent Germany also sell technologies including controller automation systems to other countries. It is worth noting that Nav Canada relies heavily on in-house capability. They also rely on joint ventures, and they follow a very disciplined cost-benefit approach to acquisitions, with a focus on near-term return on investments.

Now I would like to touch on some matters that should be considered going forward.

As Congress explores options to change FAA's structure, there are several differences between the U.S. aviation system and other countries, including size and complexities. As was recently noted, airports are financed very differently outside the U.S. There is no comparable $3.5 billion Airport Improvement Program outside the U.S.

In addition, none of the foreign service providers we examined conduct the level of research and development that FAA does on air traffic management systems or have access to NASA or DOD research. This has important implications for NextGen going forward.

Without question, how FAA is organized and financed is a policy call for Congress. There are several important lessons that deserve attention from other nations' experiences to date.

First and foremost is safety oversight. While studies show that safety has not been impacted, a robust safety workforce with sufficient expertise is needed to provide oversight of the air traffic entity. Given the size and complexity of the U.S. system, careful thought must be given to the development of the safety paradigm for the U.S. system.

Second, other nations faced several challenges transitioning to the new system, particularly related to transferring Government workforces to the new air traffic service provider. These issues took time to resolve and included resolving different labor issues.

Finally, financial considerations are important, including determining which assets should be transferred to the new entity as well as assigning their appropriate value.

Mr. Chairman, this concludes my statement. I would be happy to answer any questions you or other members of the subcommittee may have.

Mr. LOBIONDO. Thank you, Mr. Hampton.

Our next witness today is Mr. Doug Parker, chairman and CEO of American Airlines Group, on behalf of Airlines for America. Thank you for being here.

Mr. PARKER. Thank you, Mr. Chairman. I am Doug Parker, chairman and CEO of American Airlines, but also vice chairman of Airlines for America. I am here today in that capacity. We certainly appreciate the opportunity to participate in the committee's examination of potential air traffic control reform solutions.

As we broaden the FAA reauthorization discussion, there has never been a better time for reform. At last, through the leadership of this committee and support on both sides of the aisle, we have both the intent and the political will to transform the U.S. air traffic control system.

For years we have said we cannot continue to run the same ATC system the same way as it has been since the 1950s and expect different results. A string of reports from Presidential aviation commissions, DOT inspector general, the GAO, and independent private sector experts all show FAA's ATC modernization efforts have been plagued by significant cost overruns and delays, calling into question the FAA's ability to deliver under the existing funding and governance structure.

Now, this is not a criticism of the FAA's current leadership. They are a great group that is working very hard and has delivered recent pockets of progress. We commend Administrator Huerta, Deputy Administrator Whitaker, and Assistant Administrator Bolton for their leadership. We believe the problems lie not with their leadership but with the constraints and the built-in impediments of the current governance and funding structures.

We believe fundamental reform presents significant opportunities for improving our system. And like many of you, we recognize there are risks associated with major reform. Indeed, there are those who suggest change is hard and there is insufficient will, both politically and within the industry, to tackle something of this magnitude. We disagree with the skeptics.

Other countries have successfully taken it on, and we have the benefit of learning from their combined experience. The risks can be mitigated. Of far greater concern is the much larger risk of doing nothing. It is in all of our best interests to determine the most effective, fact-based solutions that will work for stakeholders and provide the "step change" improvements needed for our ATC system long term.

To make an informed comparison to our own system, A4A undertook research to benchmark and assess the governance, financial, and operational performance of the U.S., Canadian, and European ATC models. To gain an understanding of best practices outside the United States, our evaluation reviewed the safety, efficiency, customer service, and NextGen implementation performance of those organizations. Our conclusion is that to bring our ATC system to where it should be today and must be for the future, transformation, not renovation, is required.

We are fortunate to have the safest ATC system in the world. We also should be striving to be the most efficient. Our airspace is inefficiently managed, and airline passengers pay the price.

Our benchmarking and fact-based assessment of the governance, financial, and operational performance suggest some basic principles for ATC organization success: first, independent, multistakeholder board governance; second, effective management incentivized to pursue efficiencies without unnecessary constraints hampering their decisionmaking; third, a fair self-funding model based on the cost of ATC service; and fourth, the ability to manage capital to allow speedier technological modernization.

With these principles in place, ATC can operate like a business, with long-term funding and governance certainty. Clear organizational accountability to stakeholders and users of the system drives effective and efficient operations and decisionmaking. A self-funded, cost-based financing model frees the system from the annual appropriations process and ensures stable and predictable funding that allows for access to capital markets. And funding not consistently held up by sequestration will also enable long-term planning.

Our work to date shows a commercialized, nonprofit type of governance structure would deliver the greatest benefits for a reformed ATC entity because the commercial structure would continue to put safety first while driving value for all stakeholders. And to be clear, under any and all scenarios, first and foremost, the FAA must retain the role as safety regulator.

We believe various models already in place in key international airspace provide valuable insight to help us transform best global practices into a U.S. system that acknowledges our complexity and operating environment. We believe we should be focused on holistic changes in governance, structure, funding, and accountability that will facilitate the development of a world-class ATC organization.

We should do it by using the best technology and best practices to deliver the safest and most efficient air traffic infrastructure in the world. We have the technology and the opportunity. We are doing a disservice to our customers and the flying public by not acting.

We need to stop the endless circular discussion of need, and act by seizing this opportunity to create an ATC system our pas-

sengers, our economy, and businesses across America expect and deserve. Thank you very much.

Mr. LOBIONDO. Thank you, Mr. Parker.

Our next witness today is Mr. Craig Fuller, vice chairman of the Federal Aviation Administration's Management Advisory Council.

Thank you for being here.

Mr. FULLER. Mr. Chairman, Ranking Member Larsen, members of the committee, I am Craig Fuller. I am actually a general aviation pilot of over 40 years of active flying, but I am not here to represent any segment of the aviation community. I really come here as a member of the FAA's Management Advisory Council.

This council was formed in 1996 by the Congress to give the Administrator advice and counsel on management concerns. And this Administrator, Administrator Huerta, when we convened for the first time as a group last January 2014, asked us to dive rather deeply into the question of what were the impediments to going forward, and specifically in the context of reauthorization.

I have submitted a statement for the record. I would like to give you just a very brief background and respond to some of the good questions that were asked in the opening statements.

We do not, on the Management Advisory Council, have a recommendation to make or a consensus that we have arrived at yet. I will talk about a concept that the working group and the members of the MAC have looked at carefully.

Our first step last year was actually to talk to about 30 different stakeholders to understand, going forward, what impediments they saw, and then to talk to the leadership inside the FAA. As a working group, the MAC members participated in this activity, and the full MAC was briefed during our meetings on what we found.

What we found has been actually shared here today in many ways. First and foremost, the question was asked, is the best funding structure in place today? I think our answer is clearly no, that in fact, the funding structure does not provide the continuity of funds, does not provide the flexibility of funds, does not provide the ability to do capital investments that are necessary to go forward. So the funding structure is a serious concern.

The other concern that we heard and was touched upon is the whole certification and regulatory area. As a matter of fact, this was the area that probably more groups talked about indepth than anything else. Whether it is a third-class medical concern, the ability to have designees doing examinations; the manufacturers are concerned about the speed with which part 23 rewrites get done—across the board, this was a concern.

Now, safety has been delivered to us through certification and regulation very successfully for many years. But neither inside the FAA nor in the community is there a sense of satisfaction about the way this is operating, and that is a fundamental issue that I think has to be dealt with over the course of this discussion.

I believe all MAC members, I can say safely, are not satisfied with the status quo. I believe all MAC members think there is a better path forward, and I know all of us appreciate the leadership of this committee, Chairman Shuster, calling for bold action and ideas. And I think all of us on this panel come with ideas because we want to improve the status quo.

In the course of our deliberations, we talked with some of the groups here today. We talked to people who were looking at taking the Air Traffic Organization outside of the FAA. We looked at Nav Canada. I have been to Canada. We looked at some of the other countries that have done this.

The distinct difference between us and those countries is size. Somebody from the National Business Aviation the other day said, "In New Zealand there are 17 business aircraft." In Canada there is about 10 percent of the air traffic we have. As you heard, the amount of research, the work that is developed in the United States and shared throughout the world just makes us different.

So while there are many merits—you are going to hear more about them—to a businesslike operation of ATO, the working group has come to focus on a concept where the entire FAA would be put into a Federal corporation. This gets to the question of what is bold and doable.

If the entire FAA goes into a Federal corporation, the employees stay in the Federal Government. The revenue streams continue to flow in there through a transition period. A separate board of Governors, as was described for ATO, a group of stakeholders, would be the governing body for this and would deliver the businesslike methodology for operating not just the ATO but the safety and the certification areas as well.

There would need to be a chief safety officer. These people, some of them, would need to be appointed by the President, confirmed by the Senate. The Congress would continue to have to have interaction, but not at the level that exists today, in order to deliver an FAA process that is simply more efficient and operates with the continued safety we have enjoyed.

This is a concept that we look forward to spending time with the community discussing. It is a concept we would like to have further dialogue with the committee and the committee staff about. Again, I thank you for the opportunity to share the work that is in progress at the Management Advisory Council at the FAA. I look forward to your questions.

Mr. LOBIONDO. Thank you, Mr. Fuller.

Our next witness today is Mr. Paul Rinaldi, president of the National Air Traffic Controllers Association.

Welcome.

Mr. RINALDI. Thank you, Mr. Chairman. Thank you for the opportunity to testify today at this important hearing as we lead into a new FAA reauthorization bill.

The FAA and the National Airspace System are experiencing a transition period. We all have a stake in the National Airspace System of this country. It is an economic engine which contributes $1.5 trillion annually to our gross domestic product and provides over 12 million American jobs.

Currently we run the largest, safest, most efficient, most complex, most diverse airspace system in the world. Our system is incomparable, unequaled, and unrivaled by any other country. The United States airspace system and the FAA is considered the gold standard in the world aviation industry. And yet the reality is in order to keep this honor, we need a change.

Currently we face many challenges in responding to the given problems of unstable budgets, including but not limited to the inability to finance long-term projects, the inability to grow the National Airspace System for new users, the inability to modernize our aging infrastructure.

And currently we are struggling in maintaining proper resources and staffing at our busiest air traffic control facilities. The FAA lacks a central staffing distribution system that has led to some of our busiest facilities in the country approaching critical staffing. This is a giant concern for us.

The air traffic controllers are the backbone of the National Airspace System, maintaining the safe and orderly flow of aircraft across the United States. In addition, we are contributing our expertise to modernize our system through NextGen projects. And we provide all the on-the-job training for all new hires.

This requires our facilities to be appropriately staffed. An understaffed facility can barely keep its positions open for the day-to-day operation, never mind train our controllers on new technologies and procedures for NextGen or train our new hires that walk through the door.

Understaffing our facility will ultimately delay modernization projects. Simply put, this is bad business, to understaff our business facilities in the country, and yet the FAA continues to do it every day. This will eventually cause major delays within our system.

The upcoming FAA reauthorization bill must address a lack of predictable, stable funding stream for our continuous, hypercritical aviation operation. We understand that addressing the stop-and-go funding problems that we have all experienced may lead to the examination of a potential structural change for the FAA. We believe it is time to look at a structural change for the FAA.

But such structural change or reform must be carefully examined to prevent the unintended consequences from negatively affecting the safety and the efficiency of the National Airspace System. Every stakeholder in the National Airspace System should all work together to ensure the United States continues to be the leader in the global aviation community.

Any reform must be mission-driven, with safety and efficiency first and foremost; must have a process to provide a stable, predictable funding stream to adequately support the air traffic control services, staffing, hiring, training, long-term modernization projects, along with preventive maintenance and ongoing modernization to our physical infrastructure, which is aging.

Any change must allow for continued growth in our system and must be a dynamic system that continues to provide service to all segments of our aviation community. We do not want to take a step backwards. In essence, any change we make needs to be precision-like so that we do not interrupt the day-to-day operation of this National Airspace System.

Mr. Chairman, our National Airspace System is an American treasure. We cannot continue to shortchange it. Aviation is uniquely an American tradition. We need to make appropriate changes to secure the funding of our system and a proper change for the governance structure of this system so that we will continue to grow

aviation in this country, allow the integration of new users like UAVs and commercial space programs, and give us the competitive edge to continue to be the leader in the global aviation community.

Mr. Chairman, I thank you for your time, and I look forward to answering any questions you may have.

Mr. LOBIONDO. Thank you, Mr. Rinaldi.

Our next witness today is Mr. Bob Poole, director of transportation policy for the Reason Foundation.

Thank you for being here.

Mr. POOLE. Mr. Chairman, thank you very much for having me today. I have been studying the air traffic control system for more than three decades, and I have published widely on the subject. Today I am a member of two working groups developing proposals for air traffic restructuring, the Business Roundtable Group and the Eno Center Group.

I agree with many other observers about the fundamental problems with the Air Traffic Organization the way it is governed and funded. I would put it this way: we have basically three problems. Number one, unstable, uncertain funding—everybody agrees on that; number two, a governance model with so many different overseers that it diverts significant ATO management time away from its customers and onto the overseers; and third, an organizational culture that is very status quo-oriented that hampers innovation.

My focus today is going to be on the organizational culture, based on this study that was commissioned by the Hudson Institute—about innovation in aviation, in air traffic specifically.

I looked at seven disruptive innovations and how the ATO handled them: digital communications; GPS-based landing system; GPS-based surveillance, in other words ADS–B; performance-based navigation; real-time weather data; remote towers; and facility consolidation. In each of these seven, the ATO is far more cautious than corporatized ANSPs overseas.

My findings about the status quo culture went through extensive peer review by many people with extensive knowledge inside and outside of the FAA. They agreed with my five proposed causal factors.

Number one, the self-identity of the ATO as a safety agency rather than as a technology user. That is because the ATO is embedded within the FAA, whose mission is safety, obviously. The companies that produce innovations are regulated at arm's length by the FAA, and so they are the ones that are free to think outside the box, come up with things knowing that they are regulated by the FAA. That is the way ANSPs operate in other countries today.

Number two, loss of technical expertise. Under civil service and with a status quo culture, it is very hard for the ATO to keep top-notch engineering and software talent. The best go to the private sector. So requirements for new systems end up being defined by contractors, not internally by the organization.

Number three is loss of management expertise. For some of the same reasons, ATO has trouble attracting and keeping top-notch program managers that you need to drive big technology implementations on time and on budget.

Number four is excessive oversight. Because it is spending taxpayers' money, the ATO must be held accountable to numerous

Governmental overseers, including all 535 Members of Congress. That consumes, believe me, huge amounts of management time.

And number five, lack of customer focus. Because the ATO gets its funding from Congress, it really acts as if Congress is its main customer rather than the aviation community that it is intended to serve. Corporatized ANSPs overseas are freed from those problems.

So to change the status quo culture, we need to do three things.

First, we need to organizationally separate the ATO from the safety regulator so that it is at arm's length, just like the technology firms that are out there.

Second, change the funding system; instead of having the users of the system pay taxes to the Government, getting all the money into the Government budget process, they need to pay fees and charges directly to the provider, the new ATO. That would refocus ATO's attention on its customers.

Third, a governance model that is driven by the people who are paying the bills: the customers and other stakeholders. They should be doing the oversight rather than all the different ones in Government today.

There is a lot of evidence the overseas ANSPs are getting better performance and higher productivity. The largest two independent studies are these that I refer to in my organizational testimony. One is an academic book-length study. The other was a peer-reviewed study done with three universities.

A major finding from this study is that: "The commercialization models have resulted in significant cost reductions, dramatic improvements in modernization, and major improvements in service quality while improving safety. Commercialized ANSPs exhibit three main strengths: sensitivity to customer needs, agility in reaching a decision, and ability to carry it through."

Finally, which organizational form is best? I and a number of researchers have concluded that a nonprofit corporation approach really is best. The way we could do that in this country is with a federally chartered not-for-profit corporation comparable in structure to the U.S. Red Cross, the U.S. Olympic Committee. It would also have the characteristics, essentially, of a user co-op, which we have a number of in aviation and elsewhere.

That is my best conclusion after many decades of studying this as a path forward. It is also the organizational form that is being recommended by the Business Roundtable Group. Thank you very much.

Mr. LOBIONDO. Thank you, Mr. Poole.

Our next witness today is Mr. David Grizzle.

Thank you for being here today. Mr. Grizzle, you are recognized for your statement.

Mr. GRIZZLE. Good morning. My passion to see Congress embrace transformational change in air traffic control is the result of my long career in aviation—22 years at Continental Airlines in various senior executive positions, and 4½ years at the FAA, mostly as the chief operating officer of the Air Traffic Organization with very able coworkers.

I firmly believe that taking air traffic control completely out of Government and creating an independent not-for-profit that values safety, efficiency, and access is the only means to assure a more

stable future for controllers, a more efficient and larger system for the users, and a more reliable system for consumers.

Multiple times over the last 20 years, Congress has expressed its frustration with the performance of the FAA and its inability to modernize its equipment. In the Air Traffic Management System Performance Act of 1996, Congress gave the Administrator sweeping new powers to govern the agency with less external interference, almost in a nongovernmental way. Specifically, the Administrator was to be the final authority in personnel matters through previously granted powers to design a personnel management system outside of the restrictions of title V.

The Administrator was given equally broad powers with respect to acquisitions, again with previously authorized authority that was to have improved the agency's timeliness and cost-effectiveness in acquisitions by removing the FAA from the application of the Federal Acquisition Regulations.

To put an even finer point on its intentions, Congress provided that the Administrator was not required to submit for approval or even seek the advice of the Secretary or any other person at DOT on those matters where the Administrator had final authority.

Still not satisfied with air traffic control performance, 7 years later Congress created the Air Traffic Services Committee, a Presidential-appointed, Senate-confirmed board to oversee the system. The committee was to approve ATC's strategic and modernization plans and all acquisitions over $100 million. The committee was also supposed to approve the hiring of the COO and make budget recommendations.

As chief operating officer, I saw vividly what came of Congress' best intentions to create a governance structure still within the Federal Government that respected the peculiar needs of the unforgiving, critical operation of air traffic control. The results have not been favorable.

In human resource management, every significant personnel matter is submitted to the Department of Transportation for review, notwithstanding the provisions of the 1996 Act. Whether a change in compensation, the appointment of senior management, the extension of a controller contract, or the restoration of pay for employees following the furloughs of 2011 and 2013, the Department and often other entities reviewed our decisions, and they were always delayed, frequently modified, and sometimes reversed.

The FAA has continued to undervalue human capital, resulting in our once again having a prospective shortage of controllers, technicians who lack certifications, and many new supervisors who have been on their jobs for over a year with absolutely no management training. And the FAA's personnel management system in both design and effect is almost indistinguishable from title V, from which it was to have been separated.

Procurements continue to be grindingly slow, specifications were and continue to be inexpertly determined, and major programs which at the time of their conception were too massive and vastly exceeded the technological visibility of their planners continue to be behind schedule and over budget. And this does not occur because our contractors are rapacious or our program managers unskilled.

It occurs because the system was never designed to support a high-performance operation like air traffic control.

Finally, you might ask, what happened to the Air Traffic Services Committee that was supposed to bring oversight from highly knowledgeable and diversely experienced individuals? Its vacancies have not been filled in a decade. It has not convened in years, and therefore certainly has not reviewed any air traffic modernization plans, approved any major acquisitions, or made any budget recommendations, as provided in its enabling statute, which is the law to this day.

The last 20 years, most of which were times of budgetary plenty, teach us that political governance cannot provide the oversight, guidance, and even continuity of attention necessary to support a critical and technology-intensive operation like air traffic control.

Based on my experience and the failed half measures of the past, I believe that our only solution is one that entrusts air traffic governance and stewardship to individuals who understand and value the needs of the users, employees, and passengers of the system, who have a continuing interest in and appreciation for this critical operation, and who are outside of even the political appointment process.

Thank you for the opportunity to testify today. I am happy to respond to your questions and provide further detail on my statement.

Mr. LOBIONDO. Thank you, Mr. Grizzle.

Our next witness today is Ms. Dorothy Robyn.

Thank you for being here today.

Ms. ROBYN. Good morning. Thank you for the opportunity to testify.

Secretary Foxx several weeks ago gave a speech at the Aero Club, and he referred to "the graveyard of administrations that have tried to make game-changing moves to reform air traffic control." If you are wondering why I am here this morning, it is because my name, along with others, is on one of the headstones, the one marking the Clinton administration's failed effort to corporatize air traffic control.

[Laughter.]

Ms. ROBYN. I brought with me the vacuum tube, the very vacuum tube, that Vice President Gore used to hold up whenever he spoke about the need to reinvent air traffic control, which he did often. The FAA was then the largest purchaser of vacuum tubes in the U.S. They acquired them from Bulgaria and the Czech Republic because they were no longer produced here.

I developed such strong views on this issue, such a passion for it, that I continued to speak and write about it after I left the Clinton administration. I wrote a Brookings report in 2008. I was in the Obama administration for 5 years, away from this issue, but I have reengaged in the debate as an independent member of the Eno Foundation's NextGen Working Group.

Let me make three points this morning, and in doing so, try to respond to a couple of the things that I have heard this morning. First of all, air traffic control, the operation of the air traffic control system, is not an inherently governmental activity. Now, although that is not the controversial statement that it was 20 years ago

when we proposed corporatization of air traffic control, I want to be clear about what I mean by that.

Air traffic control is a complex, safety-critical endeavor, but it is operational in nature. It does not require the kind of policy judgments or tradeoffs that only a Government entity can make.

By contrast, the regulatory side of the FAA is inherently governmental. As with the Federal Railroad Administration, NHTSA, the Food and Drug Administration, FAA regulation requires policy judgments and tradeoffs that are at the heart of what it means to be a Government agency.

Now, historically, the air traffic control operator and the safety regulator were seen as so inextricably linked that the operation was assumed to be inherently governmental. We know that is not the case, and we know that in part from the 50 countries that have separated them.

In fact, safety experts worldwide are now unanimous in saying that the regulator should be separate from the operation it regulates so as to avoid a conflict of interest on the part of the regulator. The United States is one of the only advanced industrial countries in which air traffic control is still both operated and regulated by the same agency. So in sum, operation and regulation should be separate. And second, FAA safety should remain in a traditional Government agency.

My second point: Precisely because air traffic control is not inherently governmental, our current approach to managing it is highly problematic. And I think this is the answer to the question that Congressman Larsen and Congressman DeFazio raised—what is the problem?

Simply stated, and I have been saying this for 20 years, the problem is air traffic control is a 24/7, capital-intensive, high-tech service business trapped in a regulatory agency that is constrained by Federal budget and procurement measures, burdened by a flawed financing system, and micromanaged by Congress and the Office of Management and Budget.

On the governance side, as a traditional Federal agency, the FAA simply cannot manage what amounts to a business. To paraphrase James Carville, "It's the incentives, stupid." As one example, FAA management views you all, views Congress, as the customer, not the users of the system, because you hold the purse.

On the financing side, the incentives are every bit as flawed. Excise taxes create perverse incentives for the users of the system, who do not pay directly for what they consume. It also creates flawed incentives for the FAA, and it denies the FAA the sort of user feedback that a normal business gets from its customers.

And because the Federal Government lacks a capital budget, agencies must fully fund capital investments upfront out of the annual appropriation process, which is completely at odds with what it takes to maintain a capital-intensive system like air traffic control.

So this clash of cultures, the fundamental mismatch between governance and financing in the system that we have, is in my view the problem and to blame for the issue.

Third, to address the governance problem, Congress needs to move the ATO outside of the traditional Government bureaucracy

so that it can operate like a business. You have heard about the three different models this morning—a Government corporation, a user-owned cooperative or stakeholder cooperative, and a for-profit entity that is regulated, rate-of-return regulation.

I have a strong preference for the user cooperative model because it achieves a very elegant alignment of economic incentives. The stakeholders manage the system with heavy, heavy involvement by the users. Therefore, they have a natural incentive to keep costs low and to invest in capital at the optimal level. And I think Nav Canada's record is superb because it has that alignment of incentives right. That is absolutely critical.

The NATS model for profit, rate-of-return regulation, is problematic. You have to set up a regulatory apparatus. There is an incentive for the regulatee to over-invest in capital. The nonprofit corporation, it works well in other countries. My great concern is that it would be impossible to pull off in this country because the context is different, that it would be impossible to have a politically insulated Government corporation in this country. Do I have time left? Yes? Let me address the issue of spectrum because I think I have raised that issue and maybe created a monster.

Mr. SHUSTER. Actually, you have gone over.

Ms. ROBYN. Have I gone over? Oh, I am sorry.

Mr. SHUSTER. You have gone over 2 minutes. You do not have 2 minutes left.

Ms. ROBYN. Sorry. I will stop there.

Mr. SHUSTER. Excuse me, Mr. Chairman, for interjecting.

Mr. LOBIONDO. No. Thank you. We will maybe get to some more of this.

I would like to recognize Mr. Shuster.

Mr. SHUSTER. I am anxious to get to my question, so I am sorry I did that.

[Laughter.]

Mr. SHUSTER. But let me just say, talking about hitting the nail on the head, you are spot on. And first I want to just clarify, what you said to address Mr. DeFazio's direct question, which Mr. DeFazio always has good questions and always tough questions, but we are not considering delegating the safety and regulatory oversight to a Government corporation or to another entity. We are discussing the delegation of a service function.

And we have had many examples of that in the Federal Government. I might add many of them are poor examples, but you learn from mistakes as you do from success. So as we move forward, let's look at those poor examples and make sure we do not make the same mistakes.

We have seen the DOT reports, the IG reports, the GAO reports, talking about the governance and financing reforms that other countries have done throughout the world. This is a yes or no question because as I look at this panel, I tried to do the math. There is probably close to 200 years' experience on this panel dealing with the ATC question.

So the yes or no question is: Due to the size of our airspace—and that is the big question; everybody says we are too big, we cannot do things the way other countries do, which we cannot; there are a lot of hurdles and challenges—but yes or no, can we scale

this, the various reforms that have taken place around the world, to the airspace that is our size?

Just go down the list. Yes or no? I know there are a lot of things in there, but it is basically at the core of the question. Can we achieve this?

Mr. HAMPTON. Yes.

Mr. PARKER. Yes.

Mr. FULLER. I hesitate because——

Mr. SHUSTER. You have been in Government too long, Mr. Fuller.

Mr. FULLER. I have been out a long time, though. It is the point that was made—the size makes the transition period much more difficult.

Mr. SHUSTER. I do not doubt that. But is it possible? Do you believe, done well, is it possible?

Mr. FULLER. I think you have more problems separating it by itself than keeping it together.

Mr. SHUSTER. Mr. Rinaldi?

Mr. RINALDI. It is challenging, and I am not——

Mr. SHUSTER. I get all that. It is a yes or no. So far, two of you have failed the test.

Mr. RINALDI. I think yes, we can. Anything we set our minds to do, we do.

Mr. POOLE. Yes.

Mr. GRIZZLE. Unquestionably yes.

Mr. SHUSTER. I think you have already answered the question. OK. That being said, I believe we can also. I believe we can, too.

And now the question directly to Mr. Parker: You have spent a career in the airline industry. You have merged a couple of airlines. Doing this, can you take your experience from—you have 90,000 employees. You have dealt with safety concerns. You have dealt with technology. You have dealt with financing. You have dealt with human resources concerns. Can you talk about your experience in doing something like this? Again, it is difficult, but can you address that directly?

Mr. PARKER. Sure. Absolutely. Thank you. We have indeed gone through a number of complex projects over time, and this would be another one. What I know is when it comes time to get large projects done, you need the team to focus on the vision, not the obstacles.

Making sure the obstacles are addressed is certainly important. You need people to make sure that all the details are ironed out and the obstacles are not ignored. But you cannot focus on the obstacles. The way you get things done is focusing on the vision, And that is what this committee is trying to do. We applaud that. That is how we get through things.

Now, there are certainly problems that will come about. But our job is to make sure that we look to the future and not live in the past and make sure we are doing the right things. That is what we have certainly been able to accomplish through mergers. Obviously, they are difficult.

But at the end of the day, you fight through the difficulties to make sure that you are moving forward, that is what needs to happen here. We are still living with a system that is much worse than we can do. We need to move forward.

And what we have seen, as we have worked through projects, to your question, is that once you do that and you work through, you end up with something much, much better. I could go on for a long time about how our companies are much better off because of the challenges we have worked through, and no telling where they would be had we not done that.

So this is certainly manageable, and indeed, I would argue in some cases, easier to manage because we are not talking about integration of two separate ATC systems. It exists. We are just talking about changing the governance and the funding to make sure that it can actually operate efficiently because it certainly cannot operate efficiently under the current structure.

So I have no doubt that with the right attitude and philosophy, that the obstacles could be overcome, and that we will be much better off shortly thereafter. And the challenges are worth taking on.

Mr. SHUSTER. I think a very important point that we should take note of is that you made the point that you were merging two different entities, which is extremely different cultures. We are taking a culture, we are taking an organization, and setting it aside, and it is basically intact. We are trying to make it better.

Mr. PARKER. Absolutely.

Mr. SHUSTER. So I think that is one of the things we all should take away from this. This is challenging, but it is no more challenging than what you have done in your career.

I yield back.

Mr. LOBIONDO. Mr. DeFazio?

Mr. DEFAZIO. Thank you, Mr. Chairman.

Mr. Fuller, you said that safety certification loomed large in your interviews. So under the model I am hearing here, safety certifications stay with the Government. Who would pay for it? The Government, I assume? If we can get an answer quickly.

Mr. FULLER. Yes.

Mr. DEFAZIO. Yes, the Government would pay for it. OK. Is that going to solve the certification issue problems?

Mr. FULLER. Actually, I think if you change the culture, you will go a long way to solving the certification problems, and the $15 billion the FAA spends, most of which comes from people using the system, would be the revenue from which you would pay for both ATO and——

Mr. DEFAZIO. Yes. But your model is, you move it over. But their model is, it stays with the Government.

Mr. FULLER. As I understand, yes. That is correct.

Mr. DEFAZIO. So anyone who disagrees, who is advocating the private corporation, the Government is going to pay for safety and certification. Quickly, Mr. Poole?

Mr. POOLE. Yes. And this would——

Mr. DEFAZIO. Yes. We got it. We are good.

Mr. POOLE. Yes.

Mr. DEFAZIO. So that is left over here without a funding source. So that is subject to all the vicissitudes, to all the problems we talked about, sequestration and all that. And certification has been identified as a huge issue, so we would still have to reform that, and we would have to figure out how to fund it.

Let's go on to the Airport Improvement Program. Now, I know there is going to be a little—it is $3.35 billion a year. About half goes to GA, half goes to commercial. As I understand the model of A4A, we would not fund the commercial side, and you would fund GA out of excess revenues. So you are anticipating excess revenues in the vicinity of $1.6 billion a year. Is that right, Mr. Parker?

Mr. PARKER. I believe that is correct. Yes, sir.

Mr. DEFAZIO. And then how are we going to fund the commercial side? You might have noticed that A4A is a little resistant to PFCs or PFC increase, and we are going to take away AIP, which is $1.6 billion a year.

You say they can borrow, but what is their funding stream if they cannot have an increased PFC and they lose AIP? And what happens to small and mid-sized airports who would have to charge—even if they could charge a PFC, it would drive people away?

How are we going to pay for that? Or are we going to say, the Government will continue to pay for AIP? Anybody got an answer on that? Mr. Poole, is the Government going to continue to pay for AIP under your model?

Mr. POOLE. It is certainly up to Congress. But I think——

Mr. DEFAZIO. So we would have to find $1.6 billion more.

Mr. POOLE. Yes.

Mr. DEFAZIO. We are going to take safety certification, $1.6 billion, but we no longer have the revenue stream because that has gone over here and we have changed all that. So that is a bit of an issue.

Now, Mr. Grizzle, when I talked to you—now, Mr. Rinaldi, I think your folks are kind of in favor of defined benefit plans. Right? Yes?

Mr. RINALDI. That would be correct.

Mr. DEFAZIO. Are they interested in a defined contribution plan as a transition?

Mr. RINALDI. Not necessarily.

Mr. DEFAZIO. Mr. Grizzle, you advocate a defined contribution in the future.

Mr. GRIZZLE. Only for employees hired after the closing date.

Mr. DEFAZIO. So then you are going to create a transition. Let me talk about a transition problem we have. And everybody points to problems with the Postal Service; I have got a reform bill. And Congress is a big problem.

And one of the problems is when we transferred just from one Government program to another, CSRS to TSP, the Postal Service overpaid, according to consultants, between $9 billion and $15 billion, some say $20 billion, for that transition. They have been unable to get the Federal Government to honor that and return the money to the Postal Service so it could go into a fund and be used for other purposes.

So now we are talking about we are going to bifurcate the system. We are going to transfer Government employees to a private corporation. And somehow, we are going to fund that, and that is not going to be as problematic as TSP to CSRS, so that will be easily done.

They will somehow continue to earn Federal benefits. New people will go into a defined contribution. As the workforce shrinks, there is obviously less and less and fewer people to lobby to continue the defined benefits for the people who are in there, and somehow, the private corporation is paying for it. I do not see how that is going to work. But that is just another minor issue.

Now, the valuation of assets, this is an interesting one because Ms. Robyn talked about the FAA's asset of spectrum. Well, again, as I pointed out, it is the FCC's by the NTIA, and they pay a very subsidized price, 2 million bucks a year to use it. And we are selling spectrum at very high prices.

Now, we have had some experience. This is the spectrum that is used. The allegation is it is being used very inefficiently, and we can parcel it up and sell some of it off, and somehow, those benefits would go to the private corporation and not to the taxpayers of the United States. I think there would be some disagreement in Congress over that.

But if you look here, this little dot, that is where LightSquared wanted to go, right here. And then we found out, oh, my God, it is going to wipe out our GPS. That is a problem. So it got blocked.

Now, actually, this is not being particularly—from experts I have talked to—inefficiently used, plus some of it is intermingled with military, and all of it seems to be vital. Maybe there is some way you can parse it down a little bit, but when we tried to parse it here, people said, oh, my God. We are going to lose GPS.

So are you anticipating that the Government will give the spectrum to the private corporation and allow them perhaps to consolidate some of it and then sell it, and nothing would flow to the Federal treasury?

Ms. ROBYN. No. Absolutely not. And if I created that impression, no. It is unfathomable to me that Congress would direct NTIA to do that.

Mr. DEFAZIO. Right.

Ms. ROBYN. The spectrum, by the way, it is not the FCC's. It is the Federal Government's.

Mr. DEFAZIO. Well, it is the people, the FCC, et cetera.

Ms. ROBYN. And NTIA manages it on behalf of——

Mr. DEFAZIO. But if you notice, the most recent auctions are going for 20 times what was estimated. This is very valuable.

Ms. ROBYN. Oh, no, no, no. What the FAA has is incredibly valuable.

Mr. DEFAZIO. Then we have the rest of the assets. Can anyone put a value on the rest of the assets? Delta did, but it was a ballpark number. I do not know if anybody else can. On the physical assets?

Mr. GRIZZLE. There are no clear benchmarks that you can look to. But when you take account of the contingent liabilities associated with them, the value may not be that high.

Mr. DEFAZIO. But we did have a report. Mr. Hampton, is it not true in Canada they undervalued the asset?

Mr. HAMPTON. Yes. At the time the assets were transferred to Nav Canada, they were sold for over $1 billion. But the auditors came 2 years later and found that the assets were sold for 60 per-

cent less than their true value. So our point is an accurate value for the assets.

Mr. DEFAZIO. I have been on the Committee on Natural Resources most recently and spending a lot of time there. And I have tried to do some very meritorious land transfers, where the Federal agencies support it. The private entity supports it. We can never get to there because of the valuation issue. How are we going to deal with this? Who is going to value it?

Mr. GRIZZLE. We looked at the cost accounting system. We came up with some numbers, and I do not want to give you an estimate. It is in the billions of dollars at FAA, and I think it would be very important to get an accurate assessment of what the assets would be at FAA before any move be made.

Mr. DEFAZIO. So just in summary—thanks, Mr. Chairman—we are going to create a new entity that is going to be able to raise in excess of $1.6 billion a year to pay for GA's AIP. We will make the Federal Government either pay or not pay continuing commercial AIP. Big problem for small and mid-sized airports. And if we do not let the big airports raise their PFC, then, well, they are going to have a big problem, too.

So we have got that. And we are going to amortize the asset. And we are going to somehow take over the pension plan. And we are going to continue to pay all the current employees with a defined benefit plan under Federal, but then somehow we are going to transition into a tier 2 of people who are getting defined contributions.

I think, Mr. Chairman, there are some issues here that we need to discuss. I do not think we are going to get it done in this hearing. But I would hope we can have some meaningful discussions. I want to make changes, and dramatic changes. But the things that people point to here are things that could be solved.

We do not have to take a 38-year-old model that is screwed up with the Postal Service. I mean, A, it is not losing money except for Congress. But B, we did give them a bad governance structure. We can figure out these problems and create a real 21st-century Government corporation that does not have all these transition problems. That is my opinion. But I am keeping my mind open. Thank you, Mr. Chairman.

Mr. LOBIONDO. Thank you, Mr. DeFazio.

For Mr. Grizzle and Mr. Poole, we have talked about—a little order here, Mr. Capuano, please.

Mr. CAPUANO. He can have my time. He did good.

Mr. LOBIONDO. You can always count on Mike.

For Mr. Grizzle and Mr. Poole, we have talked about a lot of different aspects of this. There is one particular aspect that I am very interested in hearing your take on. The FAA clearly is responsible for research, development, and innovations that are critical to air safety and to our air superiority, if we can use that term. Almost all of that work, or a great deal of that work, is done at the FAA Tech Center that happens to be in my district.

So if we were to separate ATO from the FAA into whatever it may be—a Government corporation, public-private partnership, et cetera—how do you see us doing this? What role would the Tech Center play? How would the FAA handle this R&D component?

Mr. GRIZZLE. Thank you. I think the Tech Center is one of the most underutilized assets in the Federal Aviation Administration. I think only with the alignment of incentives that you can have when you have a private enterprise controlling that tremendous asset will you be able to deliver from the Tech Center the true productivity that it is capable of.

Consistently, projects have been begun at the Tech Center and then left to go fallow. There is no incentive for people to actually develop projects at the Tech Center, and so things are begun and then they are stopped. And highly profitable enterprises are not even begun there because there is no incentive on the part of anyone who is there to actually begin those models.

Mr. LOBIONDO. Mr. Poole?

Mr. POOLE. If I can add just one example, the Tech Center pioneered the development and testing simulation of remote tower concepts, and then basically the FAA dropped the ball. Nothing has happened. And it has been picked up in Europe, and they are now way ahead of us in remote towers even though the pioneering original work was done at the Tech Center.

Mr. LOBIONDO. Mr. Hampton, do you believe that the ATC models used by other countries have enhanced safety and efficiency? And if so, can the best attributes of these models be adopted by the United States without adversely impacting safety?

Mr. HAMPTON. The studies over the years, including the GAO and most recently a study by the MITRE Corporation, clearly show that the transition to a commercialized entity does not impact safety.

Mr. LOBIONDO. Anybody else on the panel want to comment on that at all? No?

[No response.]

Mr. LOBIONDO. Mr. Larsen?

Mr. LARSEN. Thank you. My first of 63 questions for the panel.

Mr. Parker, I do not know if you have seen the document, so if you cannot take it too far, then do not. But it had to do with the Department of Defense's statement. Have you all looked, at A4A, what requirements are necessary to ensure that a new ATO provider provides continuous services and support to the Department of Defense? Have you looked at that particular question?

Mr. PARKER. I am not certain, sir. But I know the answer to the question will be absolutely.

Mr. LARSEN. Yes. Well, perhaps you can help us out, through A4A, how you would approach that.

Mr. PARKER. We will do that.

Mr. LARSEN. And Mr. Fuller, in the MAC did you have a chance to look at that?

Mr. FULLER. We have not.

Mr. LARSEN. All right. So I have placed it into the record. It is a bullet point paper from the DOD, and it talks about some of their outstanding issues.

Mr. Hampton, has IG looked at that at all?

Mr. HAMPTON. No, we have not. But DOD is unique in the sense that they are both an air traffic service provider and a consumer. And I think the DOD and security concerns would have to be factored into any change.

Mr. LARSEN. Right. Good. Thanks.

Mr. Rinaldi, would you expect any new organization to provide collective bargaining rights and retain Federal benefits and pensions?

Mr. RINALDI. Say that again, sir?

Mr. LARSEN. Would you expect that any new ATO organization, or I guess AT organization, would provide collective bargaining rights and retain Federal benefits and pensions?

Mr. RINALDI. Absolutely.

Mr. LARSEN. And have you had discussions with other stakeholders about that?

Mr. RINALDI. Preliminary, yes.

Mr. LARSEN. Preliminary, yes?

Mr. RINALDI. Yes.

Mr. LARSEN. Can you give me a flavor of the result?

Mr. RINALDI. No definitive answers, that is for sure.

Mr. LARSEN. Excuse me?

Mr. RINALDI. No definitive answers at this point, but preliminarily we have had those discussions, yes.

Mr. LARSEN. All right. Great.

Mr. Poole, in your comments, on page 6, this gets to some of the comparison of the numbers.

Mr. POOLE. Yes, sir.

Mr. LARSEN. So I will give you a little time to get there. It has got the table and the cost per IFR flight hours.

Mr. POOLE. Yes.

Mr. LARSEN. So it certainly shows that of the three that have reported, the U.S. is a higher number, no doubt. But from 2011 to 2014, the increase in the U.S. was 4.9 percent while Nav Canada was 14.4 percent and New Zealand is a 22-percent increase over that same period of time.

Did you look at, rather than the absolute numbers, why there is a much lower rate of increase in the U.S. versus the other two?

Mr. POOLE. I have not looked at that, but——

Mr. LARSEN. Based on your 30 years of experience, would you have some idea about why, in those last four data points, it would be so much less for the U.S.?

Mr. POOLE. The data are cost per IFR flight hour. So flight hours have not been increasing that much, but costs due to investment in new technologies and things, which both New Zealand and Canada have been doing pretty extensively, that may account for it. That is only a hypothesis because I have not looked in detail why that changed.

Mr. LARSEN. That is fine. Maybe you can get back to us, give us a better idea of if there is anything different or new happening in the last several years or is this an anomaly. That would be helpful, at least for me, to figure out.

Mr. POOLE. Yes.

Mr. LARSEN. Mr. Grizzle, I want to make sure that airports around the country—certainly we have the resources to do infrastructure. Right? Build the projects? One version of the BRT's—I am sorry, Business Roundtable's—term sheet called for eliminating the AIP grants for large, medium and small hub airports and allowing them to collect a higher passenger facility charge instead.

How high would that PFC cap need to be in order for small hubs to offset their loss of AIP funds? Do you have an estimate of that?

Mr. GRIZZLE. I do not think it is a realistic option for some of the smaller hub airports in the first place. They simply do not have a self-help option with respect to collecting PFCs that would adequately cover their capital costs.

Mr. LARSEN. So can you expand on that? What would it mean for medium-sized or larger hubs?

Mr. GRIZZLE. I think that a solution needs to be designed that looks at the relatively limited number of funding options that we have. Keep in mind that the entire FAA currently receives a very generous general fund support. And going forward, the different constituent parts of what is now the single FAA will continue to need to receive general fund funding.

Mr. LARSEN. Would you assess that the airports consider the funding from the general fund very generous?

Mr. GRIZZLE. I do not know.

Mr. LARSEN. I do.

[Laughter.]

Mr. LARSEN. So Mr. Parker, some proponents of reform have suggested that airports should be allowed to charge a higher PFC—right? And we have had this discussion before—to make up for an expected shortfall.

How would the airlines approach, not necessarily the PFC side; I do not want to really get into that debate, but in terms of the reorganization and how airport construction would be funded, how that would be approached under a different system given the organizational changes an ATO would bring? Have you thought through that side of things?

Mr. PARKER. Well, nothing here that we are talking about, I think, would change the funding of airports. The funding of airports would continue to take place through bond financing and landing fees and the same structure that is done today.

We are just talking about the funding for the ATO itself. So anyway, I do not believe there would be any expected change to how airports are funded.

Mr. LARSEN. Yes. All right. Thank you all very much, and I yield back.

Mr. LOBIONDO. Thank you.

Mr. Mica?

Mr. MICA. Thank you, Mr. Chairman. And thank you to both Chairman LoBiondo, the ranking member, Mr. DeFazio, and Mr. Shuster. We have come a long way having this hearing.

I was talking to one of the staffers as we started. I saw Mr. Oberstar's picture up there, and I remember my first, 23 years ago, hearing on reform of FAA, and actually trying to get better technology in place. Things do not change much. And I remember that first hearing.

And then a year later, we had another hearing. And the people were giving the same testimony—just give us more money and all these changes are right around the corner. In fact, I asked one of the witnesses if he had heard of the movie "Groundhog Day." That was a year later. And then we did it every year. And here we are on reform again.

And I have tried just about everything. I tried reorganizations when I was chairman of the Subcommittee on Aviation. We put in place a COO. Russell Chew did a great job, I thought. There are some people in the audience who worked for FAA who came back after they worked for them and told me that basically, the agency is dysfunctional. And I have had to understand that it does have problems operationally.

Back to Ms. Robyn. She said 20 years ago recommended taking the ATO out. And we have talked about it. Well, today I propose we do something about it. I have a draft bill. You want to give them the draft bill? I think the time to stop talking is over. Time to act.

This is a draft bill that would turn air traffic control over to the stakeholders, the air traffic controllers, the airlines, and other stakeholders. This is a discussion draft. Mr. Chairman, how long are you going to keep this record open? How long? Two weeks? Could you do it? OK. We will keep the record open. I ask unanimous consent that the record be left open.

And each of the witnesses, I would request that you read the discussion draft—this is a draft; it is not Mica's final word—and then recommend what you would like to see change. And I will put a deadline of the—how about tax day, April 15th? And I am going to submit this legislation on the 16th, so I will give you up to that time.

So the time to stop talking——

Mr. LARSEN. Mr. Chairman, before I decide whether I am going to——

Mr. MICA. And I gave you a copy.

Mr. LARSEN. I would like to know which year.

Mr. MICA. This year.

Mr. LARSEN. Thank you.

Mr. MICA. 2015, tax day, the 15th of April. I am also distributing it to Members. I welcome their suggestions. Because the time to stop talking now. It is time to start acting. Some of you, I have taken people up to see Canada. It is not everything we want. You try to take the best of the different systems.

But it is time. And I have seen what they have done. They have one-tenth. Their technology is better. The treatment of their air traffic controllers is better. Most people do not realize it, but their air traffic controllers take a quantum leap. They already control all their traffic.

If you go from Europe from the Northeast across the Atlantic, they are controlling your aircraft. And there are big gaps in that that they will fill because they are going to be on the next generation of air traffic control before we are. We cannot even make a decision to do that.

So the time to stop dickering around is over. Here is a draft. We can put anybody else's name on it—LoBiondo, Shuster, Larsen. In fact, we will welcome everybody who wants to. But this is the best discussion we have had in the 23 years I have been here.

We have got to act, and we have got to act boldly, and we have got to do it right. We have had the safest system. My heart and prayers go out with the Europeans today; they lost an aircraft. I saw Jim Coon. I see Sharon Pinkerton every day. We woke up, and

when we finished our job, we were pleased that we had the safest system.

And we have reacted. We reacted in inspections, when we went to self-reporting and the at-risk basis rather than just show up on every Tuesday and inspect. We reacted with Oberstar on commercial aircraft—I am sorry, with commuter aircraft and did that safety bill.

So now it is time to act on reorganizing our air traffic control system. Didn't you propose this 20 years ago or say we should look at it, Ms. Robyn?

Ms. ROBYN. Yes.

Mr. MICA. Yes. And most of you testified in favor. And people worry about the other things—R&D, certification, tech. If you take air traffic control and we give it to the stakeholders, then we can concentrate on all those important other things.

And Mr. Parker, I want to talk to you about US Airways and American Airlines, whose records do not mesh. And I will give you a personal anecdote about that. Can I get additional time?

Mr. LOBIONDO. We will go to round 2.

Mr. MICA. I will be back. Thank you.

Mr. LOBIONDO. Thanks.

Ms. Brownley?

Ms. BROWNLEY. Thank you, Mr. Chairman.

Mr. Parker, what evidence does Airlines for America have that spinning off the air traffic functions of FAA would improve FAA's ability to advance NextGen?

Mr. PARKER. Well, the proof we have is the experience we have seen as it exists, which has not gone well. The fundamental reason, we believe, is the governance structure. And as has been well stated by others on the panel, this is a commercial function that is run through a political organization, and that creates all sorts of problems for the organization, not the least of which is no real sense of looking forward and funding capital in the future.

Look, let me try this. I was explaining this to our team the other day. The anecdote that is maybe easiest for people to understand is to think about if we ran our airlines the way the ATC is run, we would not make decisions to invest in the future, just like they do not. It is not a management problem; again, it is a structure problem.

But simple things such as whatever it was, 10 or 15 years ago when airlines started investing in gate readers as you enter the aircraft, those were capital decisions that were hard for airlines to make at the time. We were one of those.

But what we knew is it was a lot of capital upfront, but it would speed up the process for getting people onto the airplane. That investment was made. It has now been made by all of us. You see it everywhere in the airports. But it never would have been made at the FAA because they would not have made that decision.

There is still an agent there, collecting, making sure, scanning the ticket. It is not fewer people, just much more efficient. You do not have seat duplications. You board the airplane much more quickly. We do not have old paper tickets. We do not need to process those. The existing people are much more efficient. The flow-through is much more efficient.

And if you take that to the next level, now we are moving to, with existing technology, improving the technology, taking it to the point where people with their iPhones, with bar codes use that on those gate readers. You cannot even make the next step in the FAA world because you never made the first investment. That is the problem.

And we have a structure that is so exceptionally important to commerce, which is the air traffic control system, that we are not letting move with the rest of the world. And it is the structure that creates the problems.

Ms. BROWNLEY. Thank you.

Mr. Fuller, do you have any concerns in terms of the separation of the implementation of NextGen?

Mr. FULLER. I think the essential concern is the disruption that is created with an air traffic system that handles the most diverse, complex, and largest air traffic in the world. And putting the entire FAA into a Federal corporation does not forever foreclose the possibility that some elements of that would be spun off.

But it would allow for all the attributes that have been described here—a board of stakeholders—to carefully consider what is really a very important synergistic relationship between the safety and certification teams and the air traffic control teams.

This is what comes through when you talk to the people in the leadership of the FAA today. And while there are a lot of things to criticize in the past, it is worth noting that I think today's FAA, through the work of all of us who have been involved in the NextGen Advisory Committee and RTCA, I think there are better understood priorities, better developed metrics for success, and more attention to what the stakeholders really need as operators in the system.

My concern, when you look at Canada or any of the others where there is a 12- to 24-month formal transition period and in some cases many years of transition, is that we would freeze the progress we are making in this very important area. So a Federal corporation with the entire group held together allows us to continue to make that process but to actually govern and run the organization, as people have said, in a more businesslike way.

Ms. BROWNLEY. Thank you.

And Mr. Hampton, in your examination of the foreign entities and Nav Canada, have any of those entities taken on or embarked on the kind of large-scale modernization projects like NextGen?

Mr. HAMPTON. Generally, no. Their business model takes a very incremental approach with a very near-term view on investment. Three of the service providers we looked at, though, are working on SESAR, a NextGen-similar program in Europe. They are developing similar technologies, so that is similar to a NextGen umbrella.

But by and large, the air traffic service providers we looked at take a very smaller approach to acquisitions, very much less ambitious.

Ms. BROWNLEY. Thank you. I yield back.

Mr. SHUSTER. Would the chairman yield for a minute on that question? Is that not the similar approach that Verizon takes, incrementally investing so they are able to turn over in 10 years four

times what the FAA has not even been able to do one time? Can somebody answer that for me?

Mr. GRIZZLE. Yes. In fact, we are only in the position of having to do NextGen as a massive project because we have failed to renew our technology incrementally over time. Keep in mind that when our en route automation system is completed, it will have been completed with technology that was spec'd 10 years ago. And when our terminal automation system is completed in 2018, it will have been spec'd 18 years previously.

And there is no work being done at all on a combined automation platform, which is what we must have if we are going to begin to manage the airspace in a modern way.

Mr. SHUSTER. That is a strength, not necessarily a weakness, by doing it that way.

Mr. LOBIONDO. Mr. Hanna has left, I guess. Mr. Hanna has left.

Mr. Curbelo?

Mr. CURBELO. Thank you, Mr. Chairman, for your leadership on this issue. And I also want to thank Chairman Shuster for laying out the bold vision of reforming the FAA and modernizing it. And I want to thank all the panelists for their testimony.

Mr. Parker, I want to thank you for American Airlines' commitment to Miami; representing Florida's southernmost district, we certainly appreciate all the jobs and opportunities that the airline offers our community. And I also want to commend you on the progress of the merger.

I was talking to Armando Codina earlier today, who was on the former AMR board, and we were remembering how you had promised that the merger would be in the best interests of all the stakeholders—debt holders, shareholders, employees, communities like Miami, and passengers. And by most accounts, you have kept your word. So thank you very much.

Mr. PARKER. Thank you very much.

Mr. CURBELO. A question for you. In prior air traffic control reform debates, the airlines advocated for a cost-based financing system to shift some of the funding burden to corporate general aviation operators. Is this a significant factor in your support for a cost-based financing system today? In other words, do you think more users should contribute to funding the air traffic control operation?

Mr. PARKER. It is not a significant piece of my testimony, and thank you for asking. To be quite clear, the A4A position is not a position about trying to reduce or shift our tax burden. We have said that despite the fact that commercial aviation does pay more than its fair share, that is fine.

The benefits here are so great. Our advocacy here is not because we want to see a shift in the burden. Indeed, we have said we are willing to continue to pay what we are paying today even though the system will become more efficient and we are already paying more than our fair share.

So this has nothing to do with shifting burden. It has everything to do with trying to compel all of you to do the right thing and to get this extremely important commercial enterprise into a much more commercial environment so that it can succeed. And if that means we have to pay more than our share, if that means that we

continue to pay more than our share, that is perfectly fine because the benefits are going to accrue to all of us.

Mr. CURBELO. Thank you, Mr. Parker.

Mr. Rinaldi, I have spoken with several of the employees of the MIA air traffic tower there, and they are currently working on a program called OAPM, which is a complete redesign of the airspace from Jacksonville to Orlando all the way down to Miami. These new routes are being designed with the latest GPS technology to allow for more efficient flow of air traffic.

One concern that they do have is regarding the need to train new air traffic controllers as staffing levels have decreased. Over the past year, MIA has lost about 15 controllers alone due to retirements, and will lose even more over the next several months. It takes 2 to 3 years to fully train a new air traffic controller.

As air traffic at MIA in Florida continues to grow, safety is our number one priority. Can you talk about the need to maintain a steady workforce of well-qualified air traffic controllers, maybe in the context of this proposed change of the air traffic control operation? Do you think the models being discussed would alleviate this situation?

Mr. RINALDI. Absolutely. Thank you for the question. This is a great question, and it is one of the issues that keeps me up late at night. And I said in my opening that currently our busy facilities—Miami, Dallas, New York, Houston, Chicago—are experiencing staffing levels that are approaching uncomfortable for all of us.

Controllers are working 6-day work weeks, extended workdays. Fatigue is entering into our work environment while the NTSB is telling us to reduce fatigue in our work environment.

We have tried to work collaboratively with the FAA for the last 2½, 3 years and take some recommendations that came out of the National Academy of Sciences, along with an independent review panel that I think David Grizzle was part of commissioning when he was COO, and to really focus on real numbers for our facilities, not only to staff the day-to-day positions but to actually work on modernizing our system.

It takes the expertise of the controllers at the very core level to develop these procedures, along with the pilots, so that these procedures work very well and seamlessly in and out of Miami or wherever we have done it. We have been very successful in Houston, where we turned on OAPM, which is what we call that OAPM; we call it OAPM.

Very successful in Houston, where we turned on 60-plus new procedures with a flip of the switch. And in north Texas, we also did it in Dallas. American Airlines seems to be very happy with it; 80-plus new procedures. Flipped it on. Optimal descent approaches, burning less fuel, very carbon-friendly for the environment. It is what we would like to do throughout the country except our staffing prohibits from us doing it.

Mr. CURBELO. Thank you, Mr. Rinaldi.

My time has expired. Thank you, Mr. Chairman.

Mr. LOBIONDO. Thank you.

Mr. Lipinski?

Mr. LIPINSKI. Thank you, Mr. Chairman.

Mr. Rinaldi, I want to hear your perspective on the effects some of these models may have on stakeholders. I am sure you know that the CEO of the privatized air navigator service provider in Ireland remarked last week that: "The tendency in some countries is to favor commercial flights over noncommercial flights and large aircraft over small aircraft as part of the natural selection process."

Do you see this as a potential risk in the different models that have been talked about today?

Mr. RINALDI. Thank you, sir. Great question. We have had a lot of conversations around first come, first served is what we currently work under today. Obviously, if we have a small moving Cessna and a fast jet behind them, we sidestep them out and bring the Cessna back in on the approach.

But there is a lot of talk around best serve as we move towards NextGen technology. And we would be against any type of operation that would prohibit or shrink the aviation system. Our future aviators are out there at these small-level facilities, and that is where our pilots and our controllers are going to come from.

Mr. LIPINSKI. And do you have any concerns with moving away from the current revenue structure?

Mr. RINALDI. Well, I think, as I said in my opening, the current revenue structure is broken—23 extensions of the last FAA reauthorization bill, partial shutdowns of the FAA, full shutdown of the Government, and sequester. It is not conducive for us to modernize our system, run our day-to-day critical operation, and at the same time grow aviation in this country, which is an economic engine.

I think we actually have to find a predictable, stable funding system. That is our main problem as we move forward, a predictable, stable funding system so that we can enhance the National Airspace System and continue to be the world leader.

Mr. LIPINSKI. I think we all can agree with that. We want to make sure that we do not have any detrimental effects on any portions of aviation.

I want to ask Mr. Fuller: You outlined a Government corporation concept, which I think goes beyond what a lot of others are talking about here, taking in everything, all of the functions right now from the FAA. I have concerns that this Government corporation could move to save money by possibly consolidating facilities or mothballing equipment as we move to a satellite-based system, which could harm some of the smaller airports.

If this corporation does take over the regulatory and certification, I am concerned that this would delay fixing the regulatory and certification structure that seems to have a hard time keeping pace with the rapidly increasing changes that are occurring.

So it does concern me that this will happen. Can this Government corporation do these things in ways that the current structure seems to have a difficult time with? Or do you not see the possibility of having a detrimental impact on these functions, slowing them down even more and perhaps compromising safety?

Mr. FULLER. You raised several very important questions. First I want to say that I hope that people understood the importance of the moment in time. And Mr. Parker, by talking about the need for the community to collaborate, not penalize one segment over another, I think is exactly why some of us are optimistic that a

group of stakeholders could come together—much like the NAC has done for NextGen—but a group of stakeholders could come together and make these decisions in a rational way so that the way in which you collect money—which honestly, in 6 months, I do not think you can solve.

I think a corporation could address those issues with the stakeholders present. I think the trauma that is caused to some in the regulatory certification process, the dysfunctionality that has been referred to, I think can be solved, again by a group of stakeholders governing, hiring a CEO Administrator and having the ability to fire them, to set the metrics, to set the goals.

I think that is precisely the way in which you would begin to change the culture in this bureaucracy. It is a process that the Administrator has started. But continuing to stay within the structure that involves DOT, OMB, the White House, the Congress, it is very difficult.

So for all the reasons stated that ATO could be improved by this group of collaborative stakeholders, I think it would be more successful addressing the certification and regulatory side as well with a single corporation.

Mr. LIPINSKI. Well, I have concerns. Obviously there are issues that need to be dealt with. And it would be great if it worked out in the way that you described. I have concerns about how exactly this would be structured and if it really would fulfill these functions in such an efficient manner as you state here.

But I am over time, so I yield back.

Mr. FULLER. It is why we need more dialogue on this, to refine it. And we look forward to continuing that process.

Mr. LOBIONDO. Mr. Zeldin?

Mr. ZELDIN. Thank you, Mr. Chairman.

Mr. Rinaldi, I recently had the pleasure of visiting the New York Center in Ronkonkoma. It is just a few blocks outside of my district, but there are 300 air traffic controllers who do reside in the First Congressional District. I have had the chance to speak to them, and I have also met with constituents in my district who are attending FAA-accredited college aviation programs, as well as some military veterans who have aviation experience.

They were previously on track to become air traffic controllers until the FAA recently changed their traditional recruitment process. They used to favor the graduates of the FAA-accredited college aviation programs or the military veterans with aviation experience.

Now all applicants must first pass a biographical questionnaire, a pass/fail test in which the FAA has not released the scoring metrics or each applicant's actual score. One young man I met with attended an FAA-accredited college aviation program on Long Island, has excellent grades, and is the model applicant to become an air traffic controller. He did not pass the biographical assessment.

Does this biographical assessment actually improve aviation safety? What has been your experience with it? What am I supposed to be telling constituents who are going through a program to become an air traffic controller, and when they get to the point of applying, they are not passing this biographical assessment?

Mr. RINALDI. Thank you for the question. First and foremost, you need to tell that individual and any other individual that talks to you about getting hired by the FAA they have 1 week. It started yesterday. It is open, a continuous bid, USAJOBS.gov, or the Web site, where they will have to take a BQ again, the biographical questionnaire.

The first BQ we had significant problems with because the first thing, when the agency started administering, and this is the way we are going to weed out or cull the list of applicants, we asked them—we read up on what BQ was. It is science. Well, have you validated with a large group of incumbents? The only one who represents a large group of incumbents would be us, and it was not validated. Therefore, we did have deep concerns about that.

Since then they have worked with us. We have worked on validating the BQ. It is science. I am not going to argue with any scientist. I am not sure if it is going to work. But for getting hired, I think now is the perfect opportunity to tell those constituents of yours to apply for those jobs and get out there. It is only going to be open for 5 days.

Recently they had an open bid for anyone who had continuous experience of 52 weeks. Those were direct hires out of the military. We applaud the agency for doing that. We worked collaboratively with them to get that bid out there. We want qualified candidates going through the academy so the pipeline gets into our facilities so we can get healthy and we can modernize our system.

Mr. ZELDIN. Mr. Fuller, would you like the opportunity to comment?

Mr. FULLER. Actually, that is an area outside of my expertise. I appreciate the problem.

Mr. ZELDIN. Thank you, Mr. Rinaldi. Is there anyone else who wishes to comment on the biographical assessments?

[No response.]

Mr. ZELDIN. I just got sworn in at the beginning of January. I have been kind of surprised by the amount of constituents who have come to me explaining that they are having these issues with biographical assessment. So if we can keep an open line of communication to get your comments here in the coming weeks with the current open enrollment process.

Mr. RINALDI. I think it is a big concern. The FAA said that in order to get hired, you need to go through these certified college programs. And then last year, we closed the academy because of sequester in 2013, and as we rolled out of that, they decided to change the hiring process.

It was a deep concern of ours, that we were going to not have a steady flow of qualified candidates getting through the academy. So I would love to keep that dialogue open with you, sir.

Mr. ZELDIN. All right. Thank you. And just on behalf of those constituents going through that program, I just have a tremendous amount of compassion for the fact that they—this is their goal. This is their dream at the end of college, to have that opportunity to work in the New York Center or one of your other locations. And they are studying hard, getting great grades. Hopefully we can find a place for them in the FAA.

Mr. GRIZZLE. Keep in mind, sir, that we are still training controllers in the FAA the way we have for the last 20 years. Most of your constituents who are in an air traffic control program will be using more modern technology than what they will find available to them for their training once they arrive at the FAA.

And that is one of the reasons that we have not been as nimble as we should have been in terms of revising our hiring structure to make it more satisfactory to all the constituencies that are looking at the types of controllers that we are producing.

Mr. ZELDIN. Yes. I appreciate that. My time has expired. But again, it is just the biographical assessment that is disqualifying people who are otherwise well-qualified.

Mr. LOBIONDO. Ms. Norton?

Ms. NORTON. Thank you very much, Mr. Chairman.

I would really like to get a conversation going between Mr. Rinaldi and Mr. Parker. But first I have to ask Mr. Rinaldi, this loss in air traffic controllers, what was that loss due to?

Mr. RINALDI. Well, it is mandatory retirement when we reach our mandatory retirement age. But really, the staffing crisis was exacerbated by the the sequester of 2013, which shut down the academy on March 1. It was planned on opening up on October 1, but for the Government being shut down, full Government being shut down, the agency never got around to opening——

Ms. NORTON. So are these people taking early retirement, the ones that are—"lost" is different from retirement, of course.

Mr. RINALDI. Well, the losses are from retirements. And they are taking the legitimate retirements that they have earned.

Ms. NORTON. Yes. Well, I am very worried. My first standard when I get on an airplane—I do not know anything about airlines, but I just want to get there safely.

Mr. RINALDI. Absolutely.

Ms. NORTON. So I was interested, Mr. Rinaldi, because you had a fairly objective, when I looked at your testimony, rundown of the different models. And there are some—you do not say which model to choose.

Mr. RINALDI. Rightly so.

Ms. NORTON. And so that is why I find it fairly objective. And since you represent the controllers, Mr. Parker is an airline executive, and there is some meeting of the minds—not entirely—but Mr. Parker says a nonprofit-type governance. And by the way, I do not fault any of you for throwing up your hands and saying, "Let anybody run it except the Government."

[Laughter.]

Ms. NORTON. Anybody who will do something other than these annual appropriations or no appropriations. Shame on the Government. So if I were you, I would be saying, let's get rid of you and get stable funding and somebody who will run an airline or help us run an airline correctly.

But I notice that Mr. Rinaldi looked at several types of providers. And he noted that the Germans have taken over their structure with some beneficial results; that in the U.K. they do not have a single provider any more because they had to put one of the airports up for bid, I guess, because the other one could not take it on.

So I looked at the new Canada model because that is the nearest to a not-for-profit model. And what really interested me was that you pointed out—again, you do not take a position—about the difficulty in just looking at other models. And that is what I always do; let's see how it worked there, and they maybe we can superimpose it here.

Also run with user fees, you say, Mr. Rinaldi, difficult to apply. And then you compare the United States with Canada, and you blew my mind. The United States controls 132 million flights annually, Canada 12 million; 21 centers in the United States, 7 in Canada; 315 towers here compared to 42 in Canada. We run the busiest airports; they are way down the line.

I would like both of you to indicate whether that at least—well, first let me say, do you consider that that not-for-profit approach would, more likely than the others, put safety first even if safety costs more?

Mr. RINALDI. Thank you for reading the testimony. And yes, it is mind-boggling that we have 8 of the top 10 in the world airports and 16 out of the top 30 in this country, where Canada has one, number 15, which is Toronto.

But that said, I think the Canadian model is intriguing and it is very interesting. I love their collaboration that they have from the glass up, is what we would talk about as a controller, where the controllers and the engineers are working together, developing requirements of what equipment would actually help them enhance the safety and efficiency of their system.

They are actually doing NextGen from the glass out, as opposed to the FAA pushing it down. I think it is very, very interesting. I think the equipment that they have, because it is developed with their own controllers and their own engineers, I am not ashamed to say I am envious of. Some of the equipment we have, it is antiquated and it is absolutely ridiculous.

And our training ways, what David said, is absolutely true. I recently saw them at an ATM Congress where they walk around with an iPad where the controllers are getting their mandatory briefings via iPad. We are still reading paper and checking each other, months and months to make sure that we are certified to get on position.

So there are a lot of things in Canada I find intriguing. But my biggest concern: Is it scalable? Is it scalable to the size of this system? And we also want to make sure that we continue the diversity of our system, which is providing services to rural America where they need aviation services. So those are the concerns I have when I look towards Canada.

The German model is very interesting. And you know what?

Mr. LOBIONDO. Try to finish up, if you can, please.

Mr. RINALDI. Can I finish? Yes. The German model to me is very interesting because they actually competitively outbid the U.K. model for their own airport in their own country because they are not focused on profit.

Mr. LOBIONDO. Thank you.

Mr. Rokita?

Mr. ROKITA. I thank the chairman. I would say that, as a regular user of the system, there would be every once in a while that I myself wanted to bang the gavel on a controller.

[Laughter.]

Mr. ROKITA. No, no, no. You guys are great. I really appreciate it. And I appreciate the work and the leadership of the chairman here today and the committee as a whole. As a new member of the committee, I feel obviously a newcomer to the work that has been done prior, and I am excited to hear the testimony today, and feel like I stand on the shoulders of many. And I am ready to make some good changes to the system.

I have been here the whole hearing, listened to all testimony. I may have missed a few pieces; I apologize if I am repeating anything. But I thought, according to Mr. Hampton's testimony, the auditor general of Canada made a report that it did not properly value the air traffic control services. How do we ensure proper valuation if we ever did move to such a system?

Mr. HAMPTON. Yes, sir. Thank you for the question. When the assets were transferred from the Canadian Government to Nav Canada, the valuation of the assets was significantly undervalued, by about 60 percent.

So to prevent that from happening, we would need an accurate and a fair assessment of the assets of whatever is transferred to the organization that would be put in place if a change is made in the United States. FAA would have to do some work to perform a proper evaluation of whatever would be transferred to the new air traffic entity.

Mr. ROKITA. Thank you. Does anyone else want to react to that? Mr. Poole, I don't know if you want to——

Mr. POOLE. A couple perspectives on that. The more that the new entity is required to raise in financing to pay for it, the more costly it is going to be for the users. So there is a real question there, and I take David Grizzle's point, that when you actually look at the obsolescence of a lot of the facilities and technologies, there are going to be some real judgment calls as to what the proper, real value is and whether there is a net value there at all.

There is a value in having the right to be the monopoly provider, definitely. But that is going to be a very subjective thing to determine. So I think that——

Mr. ROKITA. But not impossible to determine? And the stakeholders as a whole, you are all ready to jump in and tackle that particular challenge?

Mr. POOLE. Well, I think that is the challenge that we are all going to have to——

Mr. PARKER. Yes.

Mr. POOLE. Yes? OK. Definitely.

Mr. ROKITA. The airline says yes.

Mr. Grizzle?

Mr. GRIZZLE. Absolutely. I think that it is a doable task and should be done.

Mr. ROKITA. Thank you. Now, if I understood right—I appreciate Mr. Fuller being here—all of you being here, but Mr. Fuller, a Federal Government corporation, or a Federal corporation, I think is what you are recommending. An I don't know—an example of that

would be Amtrak. I don't know if that word has been used here at this hearing, but that would be an example of what you are talking about.

Mr. FULLER. There are many, many examples. I think you would have to find the path that works for aviation. You have got operating units from Saint Lawrence Seaway, Tennessee Valley Authority. We have looked at—the State of California runs a whole university system as a separate entity.

Mr. ROKITA. Got it. Got it. Did MAC consider the co-op arrangement or the nonprofit arrangement, as Mr. Poole and Ms. Robyn indicate?

Mr. FULLER. Yes. We had the advantage and the opportunity to talk at some length with David Grizzle, with Bob Poole. And so we did look at it. And again, it goes to the question of how do you best make the transition? We are not saying in the future that a Federal corporation that contains all of FAA would foreclose the possibility of spinning out ATO. But what is bold and doable this year, we think, is keeping it together with a stakeholder group that could decide how best to finance and structure the organization going forward.

Mr. ROKITA. Thank you.

Mr. FULLER. I say "we," and I want to say it is the working group and the MAC who has developed this. And it is a proposal still very much under discussion with stakeholders and others.

Mr. ROKITA. So the inverse of that very same question to Mr. Poole and Ms. Robyn. What about the Federal corporation? What about what Mr. Fuller is saying directly?

Ms. ROBYN. Can I just be clear on what he is proposing? Because I am kind of speechless. He is proposing to corporatize the safety side of the FAA along with the operation. We are all proposing, I think, corporatization of the air traffic operation.

Mr. ROKITA. Assume he was just talking about——

Ms. ROBYN. But he is not.

Mr. ROKITA. But assume he was, a Federal corporation for the services.

Ms. ROBYN. Yes. No, that is—I think we are all——

Mr. ROKITA. Oh, I thought I heard you to say you were for a co-op.

Ms. ROBYN. Well, I think—it is a corporation. Yes. It is a private corporation as opposed to a Government corporation.

Mr. ROKITA. I want to get to some granularity here on what you particularly prefer.

Mr. Poole? Final 10 seconds.

Mr. POOLE. Yes. I think that the nonprofit corporation has greater insulation from the problems that we are trying to solve of the micromanagement, oversight——

Mr. ROKITA. And you propose a cooperation nonprofit?

Mr. POOLE. The basic——

Mr. ROKITA. Or a hybrid?

Mr. POOLE. Yes. They are pretty much synonymous. What Nav Canada—they do not call themselves a user co-op, but in effect, that is basically what it is. And I think that has the best—as Professor Robyn's testimony stated, the best alignment of incentives to ensure good performance.

Mr. ROKITA. My time is expired. And yielding back, I would say, at least with regard to certification, when you look at the problems with part 23 and the delays and all that, I think Mr. Fuller has a point, at least with regard to certification, which is not necessarily safety. I yield.

Mr. SHUSTER [presiding]. Thank you, Mr. Rokita. I have heard twice about the undervalue of the assets, and it took 2 years after for the Government to figure it out. I don't know if anybody knows the answer to this, but is that because Nav Canada used a different accounting system and accurately was able to value these things? Because we know with Amtrak, as was mentioned, they have no idea what their assets are because their accounting system is so screwed up.

Mr. HAMPTON. No, sir. I will get back to you. I just think it was the speed of the effort of the transaction.

Mr. SHUSTER. Mr. DeFazio, you want a second round?

Mr. DEFAZIO. Thank you, Mr. Chairman.

Let's step back a moment. As I figure, the airlines and their customers contribute about 94 percent of the current revenues. And so I can assume that those revenues are going to flow to the new ATO. So that is $12.8 billion in revenues. But if you are not assuming AIP, although you say you will give excess money to GA airports, so I'll figure that in, I will say you are taking half of AIP.

So you are going to assume, then, costs of about $10.8 billion, and you have got $12.8 billion in current revenue. So there is $2 billion there, so you do not have to get efficiencies to pay for anything.

But then the Government ends up with the other half of AIP for small, medium, and large airports. The Government ends up with certification, and it ends up with safety. All that comes to about $5 billion if we assume that GA is funded by your excess revenues.

So part of the reason we are here is Congress is not ponying up the money, and we are subject to sequestration, and we are subject to all this other stuff going on. So how the hell are we going to come up with stable funding of $5 billion a year with no tax revenue? The remaining revenues would be GA gasoline, GA jet fuel, and shippers. So that creates way less than $1 billion.

So we are assuming that the Government is going to pony up $4½ billion general funds indefinitely, not subject it to sequestration, so we can have a good certification safety system and we can continue to have small and mid-sized airports and large airports.

How are we going to deal with that? Mr. Poole, do you assume PFCs, that airports will—will they go the European model? And how will that work for small/mid-sized? We are going to do this with exorbitant landing fees? Is that how we are going to pay for it?

Mr. POOLE. I do not think so. I think what we really—we are at a juncture here where we are looking at something as big as the transformation of the ATC system.

Mr. DEFAZIO. Right. But let's just——

Mr. POOLE. We have got to——

Mr. DEFAZIO [continuing]. Get to the numbers. To the numbers, please. Since everybody is here because the Government will not

meet its obligations, how are we going to assume that it is going to meet the $4½ billion? What are the revenue sources?

Mr. POOLE. If I may, if we wipe out the existing user taxes, there needs to be a big negotiation between the airport community and the airline community to figure out an answer to that question. My guess is that it should be some combination of a new AIP tax that would cover at least part of the cost; and possibly, depending on what the airlines and the airports negotiate, an increase in PFCs.

Mr. DEFAZIO. So is A4A willing to have that discussion? I have not been able to get it going so far.

Mr. PARKER. A discussion of?

Mr. DEFAZIO. With the airports about the potential—I propose two different things. You could have a second tier; since I was one of the creators of it, you could have a second-tier PFC in which the airlines would be more significantly involved. They would not have veto power, but it would be more like your leaseholds.

Or we could separate the big airports—that saves a bunch of money—and allow them to have a higher PFC. But we have got to pay for that somehow. And if you do not want to have a dramatic increase in landing fees, how are we going to pay for that?

Mr. PARKER. Well, again, as it relates to the ATC system, we currently are paying—and have agreed we will continue to pay—the same amounts we pay today. And those exceed the cost of the ATC system.

Mr. DEFAZIO. Yes—well, no, sir. But if I point it out, actually the costs you are assuming are $3 billion less than the revenues that currently flow from the airlines. So you are leaving the Government with that extra $3 billion in costs without a revenue source.

I am parsing this up in a way—if we are going to fund AIP, and we are going to fund the safety, and we are going to do certification, that is $4½ billion or so. And your revenues, the other things you are assuming of the current system, are less than the revenues you currently contribute.

Mr. PARKER. Yes. Congressman, we need to work through this one. Nothing in what we are trying to propose assumes that the airlines are going to be paying less into the system than they pay today. So to the extent those projects are being funded and——

Mr. DEFAZIO. Well, then, could we not agree that AIP should go with the system? AIP should move over and you should fund AIP; that takes away some of our burden. And then maybe in some of the models that were talked about in some of the testimony, maybe you should be contributing to help us pay for the certification system, like the pharmaceutical companies pay money to help get faster certification of new drugs.

Because you have got an extra couple of billion bucks here, if you assume the same level of fees you have now and you get savings because you are going to be more efficient, you have maybe got $3 billion or $4 billion. So you could help us with our stability issues over here.

Otherwise we are just saying, we are trying to solve the problems of sequestration, and I have not even looking at the Republican budget. I do not know what it does to FAA. I know it reduces spending on highways by 99 percent next year. I don't know what it does to the FAA. So it is kind of a problem.

So I am just trying to say, there are some things here that need—OK. And let me go one other quick issue because I am going to ask American Law Division: Has anybody examined indepth the 1936 case, the recent DC Circuit Court ruling, the remand by the Supreme Court which found that—it overturned the Circuit because the Circuit upheld the 1936 ruling that says, a private entity cannot have regulatory power.

The American railroads said—they used ATO. They said, "Well, air traffic is definitely a regulatory power," in their argument that was upheld by the Circuit Court. The Supreme Court said no. Despite everything, because Congress meddles so much with Amtrak, including talking about regulating food service, that is inherently governmental.

So it has been set back, but the standing is still there. You cannot delegate a regulatory function to a private entity. It is still there. Has anybody looked at that in great depth and can disprove that? And I am going to ask American Law, and you could help me direct the question if you have looked at it.

Mr. SHUSTER. The gentleman's time is expired.

Mr. DEFAZIO. Thank you, Mr. Chairman.

Mr. SHUSTER. I would like the panel to address it because as I said earlier, we are not talking about taking the safety and regulatory elements out of Government. We are talking about a service, a provider of service.

Mr. DEFAZIO. Yes. That is what I just said. There was my point. If it is going to stay with Government, how are we going to fund it?

Mr. SHUSTER. Well, your funding question, we absolutely have to figure out those numbers. There is no question about that. But the ATC performs a service, and the FAA still maintains, in our view—I know there are others who want to take it out, but it remains with the Government.

Ms. Robyn or Mr. Grizzle or Mr. Poole, one of you want to directly address that?

Mr. GRIZZLE. There are only four feasible sources of funding for the combined operation that is now within the FAA: the general fund; user fees; self-help, i.e., a PFC; and some new tax. I am confident that the stakeholders, with your instructions, will be able to come up with a solution that adequately funds the three parts of the FAA with the four available sources of revenue that are theoretically available.

Mr. SHUSTER. Thank you, Mr. Grizzle.

Ms. Robyn?

Ms. ROBYN. The general fund, Congressman DeFazio, funds safety now. So I think that is not a change. Right. So that seems like a red herring to me.

Mr. DEFAZIO. No. What I was telling you is the revenues that are going away are larger than the duties that are being assumed. So the Government now has to contribute more general fund to meet those current obligations. That was the point I was making.

Ms. ROBYN. Yes. But I think the issue is AIP——

Mr. DEFAZIO. We get the general fund now, but we got sequestration and you already heard——

Ms. ROBYN. Right. Yes. And I would endorse your concept of a user charge along the lines of the FDA. I think that is an option that should be on the table.

Mr. POOLE. I just wanted to point out that if you look at the historical figures for the last 15 years, the average percentage of FAA budget coming from the general fund has been 22 percent. And that basically—that pretty much covers the safety regulatory functions.

And you can consider it as being also partly the public interest part of AIP that is serving the smaller, remote airports. So that ought to continue, albeit I am open, too, to having the potential of fees for faster certification, which is actually happening today in the U.K. because they have revised their regulatory certification system in addition to corporatizing NATS as the ATC provider.

Mr. SHUSTER. Thank you, Mr. Poole.

Mr. Costello?

Mr. COSTELLO. Thank you, Mr. Chairman. Thank you all for being here. I had the opportunity to read all of your testimony and hear most of it this morning. And before I ask a question of Mr. Parker and then of Mr. Rinaldi, in all of your written testimony clearly, a steady, predictable funding stream with flexibility, I believe was also the word you used, is at the top of the list.

And it begs in me the question: How much does that challenge actually exacerbate some of the structural challenges and reforms that are being sought? Or stated differently, if the funding stream were there, would some of this discussion not have the velocity or the intensity that we are having?

I would also add, when we are talking about short-term funding, sequestration, shutdowns, what the cost is in real dollars to the aviation industry. And in fact, if we did not have that—which you actually need a little bit—you would probably still need more money, but which you need a little bit less more money because of some of that cost. And so I will leave that lingering out there if we have time within my 5 minutes.

Mr. Parker, as a CEO, accepting the premise that we have now moved to a self-financed public-private partnership or Government corporation or independent nonprofit entity, whatever it is, share with me the benefit to your company. Share with me from a CEO perspective—share with me the public benefit that you feel inures as a result of that structural change.

Mr. PARKER. Thanks. First off, a more efficient organization, which could do more things for the same amount of dollars; but bigger than that, a reduction in air traffic control delays, a much more efficient and much better use of automation to reduce delays around this country, which are only going to get worse, not better, and that will be reduced through a more efficient system.

And that is by far the largest benefit of all this, is taking what is, I agree, a complex system, and making it more efficient. I would argue, actually, that the complexity argues for this to be done more so than a less complex system. Complexity is where automation and creativity and innovation can actually make bigger advances.

So anyway, we all suffer, and I think not all of us realize how much. We suffer due to an antiquated ATC system. And it is sim-

ply going to get worse, and by moving it to a more commercial structure, that would not be allowed to happen.

Mr. COSTELLO. Thank you.

Mr. Rinaldi, let's talk about the FAA's modernization program and the FAA more generally, and whether and to what extent it includes air traffic controllers as they are developing the NextGen technologies, as well as speak more generally about the air traffic controllers' inclusion in FAA reform efforts; and if you have some concerns relative to that, maybe some suggestions as to where you would like to see more cooperation or more involvement.

Mr. RINALDI. Thank you, sir. Currently we are working very collaboratively with the FAA when it comes to modernization. But I often get reminded, as seats change amongst the FAA leadership, it is almost like you have to reinvent the wheel. And someone said "Groundhog Day." We actually have to bring them back up to speed exactly where we were 6 months ago, 10 months ago, or 12 months ago to actually keep the projects going.

Knock on wood, hopefully by the end of this month we will cross the finish line on ERAM which, as David Grizzle pointed out, was spec'd out at 2004/2005. And we are finally crossing the line now—we did not get involved in the modernization of ERAM, which is our 20 en route centers across the country, until early 2010, is when we started to get involved, because they had a $2 billion program that actually was not tracking airplanes across the sky, and it was actually shutting down our radar scopes for NextGen technology.

So being involved is not only important, it is essential to being successful in modernization.

Mr. SHUSTER. Thank you very much. And I want to thank the panel. Again, Mr. DeFazio, as I said earlier, always asks the tough questions, and that has always been from the outset the funding. How do we figure it out? And I believe we will figure it out, how to get there, especially when you have got a panel like this with almost 200 years or more than 200 years experience. And there are other people around the country who are able to help too.

I really appreciate you taking the time today, and I think many of you, if not all of you, have been before a roundtable, a listening session. And we are doing that because this issue is extremely difficult.

But I think, as many of you said here today, the time is ripe for us to do something like this. I believe there is a will out there. When you have the different groups sitting at the table talking about the same thing—and again, finding a solution is what this is all about.

And remind me, Mr. Parker said he is here trying to help do the right thing, thank you for that. Good luck with that, too. But it reminded me of what Winston Churchill said about America. "America always does the right thing after it has exhausted every other option."

[Laughter.]

Mr. SHUSTER. So hopefully over the last 20 years we have exhausted all the options and we are finally getting to the place where we are going to do the right thing. So again, thank you all

very much for being here today. Appreciate it. And the hearing is adjourned.

[Whereupon, at 12:19 p.m., the subcommittee was adjourned.]

Before the Committee on Transportation and Infrastructure
Subcommittee on Aviation
United States House of Representatives

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Foreign Countries' Processes for Operating Air Transportation Systems

Statement of
Matthew E. Hampton
Assistant Inspector General for Aviation
U.S. Department of Transportation

Chairman LoBiondo and Members of the Subcommittee:

Thank you for inviting me to testify on the Federal Aviation Administration's (FAA) reform efforts. Over the past 2 decades, Congress has enacted legislation aimed at making FAA more efficient and cost effective while improving its delivery of air traffic services and expediting modernization projects. At the request of this Subcommittee, we are conducting an audit of FAA's efforts to implement these reforms and testified on our ongoing work last November.[1] The Subcommittee also asked us to look at how other nations operate, modernize, and finance their air navigation services and infrastructure and to compare these structures to FAA's.

My testimony today will focus on the four countries we examined—Canada, the United Kingdom, Germany, and France—and how they (1) organize and finance their air navigation systems and (2) plan for, develop, and implement new technologies. I will also highlight several factors that this Subcommittee may wish to take into account if it considers making changes to FAA's organizational and financing structures.

IN SUMMARY

The four countries we reviewed have separated their air traffic control functions from the safety oversight and regulatory functions. While safety and regulatory functions remain government-controlled, each nation has commercialized[2] its air traffic control function into an air navigation service provider (ANSP) using various organizational structures. The ANSPs are financially self-supporting and finance their operations primarily through user fees, but also have borrowing authority for modernization and infrastructure projects. The ANSPs also do not embark on large-modernization efforts or conduct extensive aviation research and development. Rather, they implement new technologies incrementally, using a variety of methods, such as purchasing commercial-off-the-shelf technologies. As Congress examines possible changes to FAA's organizational and financing structures, there are several differences between the U.S. aviation system and other countries' systems to consider, including the size and complexity of the U.S. system and differences in airport funding. Despite these differences, there are several lessons that can be learned from examining other nations' experiences in separating their aviation functions, including issues related to maintaining safety oversight and transitioning to the new organization.

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[1] We testified before the House Transportation and Infrastructure Committee on our ongoing work on FAA's progress in achieving productivity efficiencies, cost savings, and improving delivery of modernization projects as a result of its reform efforts. See *Status of FAA's Efforts to Operate and Modernize the National Airspace System* (OIG Project ID CC-2015-001), Nov. 18, 2014. OIG reports are available on our Web site at http://www.oig.dot.gov/.

[2] According to the International Civil Aviation Organization, "commercialization" is the ability of an organization to operate like a commercial business. In discussions about air navigation services, the term is often used interchangeably with other terms, including restructuring, privatization, outsourcing, and corporatization.

BACKGROUND

Since 1958, FAA has overseen the safe operation of the busiest and most complex air traffic system in the world. FAA is responsible for overseeing all aspects of civil aviation in the United States, including operating the air traffic control system and regulating safety.

The Agency has gone through several reorganizations, most notably when President Clinton created the Air Traffic Organization (ATO), which began operations in 2004. While still part of FAA and reporting to the FAA Administrator, ATO is led by a Chief Operating Officer who is responsible for overseeing the day-to-day operation of the National Airspace System, maintaining equipment and facilities, and implementing the Next Generation Air Transportation System (NextGen) and other new technologies. ATO is separate from the Agency's safety, regulatory, and enforcement groups.

FAA is funded by two revenue sources: excise taxes paid by users of the National Airspace System through the Airport and Airway Trust Fund, and the General Fund. FAA's $16 billion annual budget, which is approved by Congress, consists of four accounts:

- **Operations:** Funds most of the Agency's day-to-day activities, including safety oversight and air traffic control functions.
- **Facilities & Equipment:** Funds NextGen initiatives and other modernization and infrastructure improvement activities.
- **Airport Improvement Program:** Funds grants to airports to pay for runway construction and other related projects.
- **Research, Engineering, and Development:** Funds NextGen and other research areas.

FOREIGN NATIONS' AIR TRANSPORTATION SYSTEMS HAVE COMMON OPERATIONAL AND FINANCING CHARACTERISTICS

The four countries we examined have separated their air traffic control functions from their safety oversight and regulatory functions, and commercialized their ANSPs using a range of organizational structures. The ANSPs are financially self-sustaining and finance their operations through user fees. Also, they pay for infrastructure and modernization projects by issuing long-term bonds and other debt instruments.

Other Nations Separated Their Operational and Oversight Functions

When separating their air traffic control function from safety oversight and regulatory functions, the four countries we reviewed used a range of organizational structures. These structures include a private, not-for-profit, non-share corporation in Canada; a for-profit, public-private partnership in the United Kingdom; a government-owned limited liability

company in Germany; and a government agency in France.[3] (See table 1 below for characteristics of these organizations.)

Table 1. Characteristics of Air Navigation Service Providers

	United States	Canada	United Kingdom	Germany	France
ANSP	ATO	Nav Canada	National Air Traffic Services Ltd. (NATS)	Deutsche Flugsicherung GmbH (DFS)	Direction des Services de la Navigation Aérienne (DSNA)
Type of Ownership	Government Function	Private Non-Share Not-For-Profit Corp.	Public/Private Partnership	Government-Owned Corp.	Government Function
Began Operations	2004	1996	1996[4]	1993	2005
Safety Regulator	FAA	Transport Canada	EASA & Civil Aviation Authority (CAA)	EASA & Federal Ministry of Transport and Digital Infrastructure (BMVI)	EASA & Civil Aviation Authority (DGAC)
Financing Structure	Excise Taxes & Appropriations	Air Navigation Charges & Borrowing Authority	Air Navigation Charges & Borrowing Authority	Air Navigation Charges & Borrowing Authority	Air Navigation Charges, Borrowing Authority & Passenger/ Freight Tax

Source: OIG analysis

According to officials we spoke to, these countries commercialized their air traffic control functions to address issues such as rising national deficits, operational and cost inefficiencies, the governments' inability to modernize their air transportation systems, and stagnant wage growth for government employees.

While operations have been commercialized, the safety oversight and regulatory functions remain under the control of the respective governments and are separate from the ANSPs.[5] In Europe, the European Aviation Safety Administration (EASA) regulates and oversees all aspects of aviation safety, and European governments must ensure that operators in their respective countries comply with EASA regulations.

Foreign ANSPs Are Financially Self-Sustaining

All of the ANSPs we examined are financially self-sustaining and do not receive funding from their governments. Further, while Nav Canada, National Air Traffic Services, Ltd. (NATS), and Deutsche Flugsicherung GmbH (DFS) have financial autonomy and are free

[3] For a more information regarding each ANSP see attachment 1.
[4] NATS was originally organized as a government-owned company but transitioned to a public-private partnership in 2001.
[5] Under guidelines from the International Civil Aviation Organization, it is the responsibility of individual countries to ensure the safety of their aviation systems.

to operate and make financial decisions separate from their governments, Direction des Services de la Navigation Aérienne (DSNA) is subject to spending policies set by the French government, similar to FAA.

Each of the four countries finances its ANSP primarily through user fees. Users are charged fees for services such as navigation and surveillance activities in high-altitude and terminal environments, communications, and aeronautical and meteorological information. The rates charged by the ANSPs are based on the cost of providing services to users, capital projects, interest on debt instruments, and other costs. Normally, general aviation users in these countries pay user fees for flying in en-route and terminal airspace. However, small general aviation aircraft that do not fly in controlled airspace either do not pay fees or, in the case of Canada, pay a small annual fee for using the system. In addition to user fees, France charges a tax on passengers and freight and mail that leave the country on commercial flights.

The ANSPs in Canada, Germany, and the United Kingdom also earned revenue from developing and selling aviation technology developed in-house, such as air traffic management systems. However, these sales make up only a small percentage of the ANSPs' annual revenue.

The ANSPs also have the ability to finance their infrastructure and modernization efforts by issuing long-term bonds and other debt instruments, which are backed by the revenues earned by the ANSPs. While the ANSPs in Canada, Germany, and the United Kingdom use capital markets to sell their instruments, the French government issues separate debt instruments earmarked for specific DSNA projects.

MODERNIZATION EFFORTS IN OTHER COUNTRIES ARE SMALLER IN SIZE, AND THE COUNTRIES USE DIFFERENT METHODS TO DEVELOP AND IMPLEMENT NEW TECHNOLOGIES

The four foreign ANSPs we reviewed do not embark on large, comprehensive modernization efforts such as NextGen transformational programs or conduct extensive aviation research and development. Rather, they deploy new technologies incrementally and try to install technology that meets their operational needs.[6] For example, Nav Canada used a phased-in approach in developing and introducing a new system known as Controller/Pilot Data Link Communications (CPDLC).[7] According to officials we interviewed, these four ANSPs determine specific needs and identify systems to meet those operational demands; prioritize their needs; assess operational requirements;

[6] As we have noted in previous reports, FAA has adopted a segmented approach to its major acquisitions, including its NextGen transformational programs. In contrast to the more incremental approach taken by the foreign ANSPs we reviewed, FAA's approach often mixes production and developmental efforts, and projects are more ambitious and span much longer timeframes with unclear end states. For additional details on FAA's segmented approach see our report on "Status of Transformational Programs and Risks to Achieving NextGen Goals" (OIG Report No. AV-2012-094), April 23, 2012.

[7] CPDLC is used to supplement voice communication between pilots and controllers and provides benefits such as automating routine tasks and improving safety by reducing workload and communication errors.

develop cost estimates; and obtain user input and/or board of directors' approval for projects. For example, Nav Canada's Board of Directors approves Nav Canada's annual modernization budget and individual procurements in excess of $7.5 million.

In lieu of developing large and multi-year modernization systems and software, three of the four ANSPs modify commercial-off-the-shelf products to meet their operational needs. For example, Nav Canada internally develops automation and other software-intensive systems mostly by tailoring commercial products to fit their operation. The company rarely uses contractors for this work; rather, most of the development is done by in-house staff with Nav Canada engineers directly designing and implementing systems. In addition, all four ANSPs form joint ventures and other partnerships with private companies, such as Nav Canada forming a joint venture with a company to develop a global, satellite-based Automatic Dependent Surveillance Broadcast (ADS-B) surveillance system, initially for use in the oceanic airspace.

Three of the four foreign ANSPs we examined have incorporated new technologies and procedures into the day-to-day operations of their respective systems. This includes technologies such as CPLDC, which controllers in Canada and the United Kingdom use for high-altitude operations, and using systems that incorporate electronic flight strips and other automation capabilities to streamline operations and decrease controller workload.

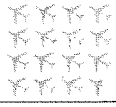
In addition, the United Kingdom, Germany, and France have joined other European countries in a large-scale effort to modernize and improve its air navigation system. Starting in 2004, the European Commission started the Single European Sky (SES) project to restructure Europe's airspace in order to increase its capacity and overall efficiency. The associated modernization program—Single European Sky ATM Research, or SESAR—is similar to NextGen and is a public-private partnership intended to define and develop common aviation technologies for use across Europe.

ADDITIONAL FACTORS TO CONSIDER WHEN EXAMINING POSSIBLE CHANGES TO FAA'S ORGANIZATIONAL STRUCTURE

As Congress examines possible changes to FAA's organizational and financing structures, there are several differences between the U.S. aviation system and other countries to consider. These include:

System Size and Complexity: The United States has the largest and most complex air transportation system in the world. ATO controls more than 2.5 times the airspace of the United Kingdom—the largest airspace of the four ANSPs we examined. The United States also has more operations than all of the foreign ANSPs we examined, and has a larger general aviation community. To manage the U.S. airspace, FAA operates more air traffic facilities and employs more controllers than the foreign ANSPs. (See table 2.)

Table 2. Comparison of Air Navigation Service Providers

	ATO (United States)	NATS (United Kingdom)	NAV CANADA (Canada)	DSNA (France)	DFS (Germany)
Total Airspace	75,110,000 km²	29,180,000 km²	18,000,000 km²	1,000,000 km²	394,000 km²
					
Annual IFR Movements (2011)	15,539,009	2,106,689[a]	3,855,947	3,009,230	3,061,000
= 1,000,000 IFR Movements					
Number of General Aviation Aircraft (2012)	209,034	19,939	35,540	32,410[b]	21,546
Number of Operational Air Traffic Controllers (2012)	18,001	1,480	1,689	3,964	1,716
Number of Air Traffic Facilities	317	18	49	91	20

[a] Data from 2010.
[b] Data from 2011.

Source: OIG analysis

- **Capital Budgets:** Given the differences in size and complexity, the capital budgets for ANSPs are significantly smaller than FAA's capital budget. For example, FAA's Facilities and Equipment annual budget is $2.6 billion, with several projects expected to cost hundreds of millions of dollars to complete. Nav Canada's capital budget is approximately $120 million annually, and considers a large acquisition to be $10 million.

- **Airport Funding:** U.S. airports are funded through Federal programs, such as the Airport Improvement Program, and Passenger Facility Charges. However, as with the foreign ANSPs, airports in each of the four countries we examined are generally self-supporting, autonomous entities. In addition, the foreign ANSPs do not include airport development and maintenance costs in their user fee calculations.

- **Aviation Research and Development:** FAA conducts a wide range of aviation research in areas such as evaluating and testing NextGen concepts; conducting runway, fuel, and other safety analyses; and studying human factors in the air traffic control environment. However, none of the ANSPs we examined conduct the level of aviation research that FAA conducts or operates a technical development complex like FAA's Technical Center in Atlantic City, NJ.

Regardless of these differences, other nations' experiences in separating their aviation function—as well as studies we reviewed—have led to several lessons learned. These include:

- **Safety:** Studies we reviewed, including a recent report commissioned by FAA,[8] indicate that separating air navigation and safety/regulatory functions has not impacted safety. However, the FAA-commissioned report noted that if a government is planning to separate its safety oversight organization from an ANSP, it needs to establish a clear division of roles between the safety organization and the ANSP, ensure that a sufficient safety and regulatory workforce is in place, and verify that mechanisms are in place to properly fund the safety organization.

- **Transition Issues:** Officials in the countries we visited noted that they had to resolve several transition issues to commercialize their air navigation functions, including determining which functions to transfer, the timing of the transition, and how the government would conduct safety oversight and work with the newly created entity. There were also transition issues for employees moving to the commercialized entity. For example, Nav Canada and its union officials noted that there were contentious labor-management relations for the first several years after the transition. The initially poor relationship between managers and staff was attributed to a lack of trust, employees adjusting to a new business culture, and rules that prevented salary increases for 3 years.

- **Financial Considerations:** Separating the air traffic function from FAA would require resolving several financial issues, including determining which assets would be transferred to the new air traffic entity, such as air traffic facilities and equipment, as well as the value of those assets and the air traffic system. Properly valuating the air traffic control system and the associated assets will be important. According to the Auditor General of Canada, Transport Canada did not properly estimate the value of its air navigation system before transferring over to Nav Canada. This resulted in the government receiving significantly less for the system than estimated by the Department's financial advisors.[9]

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[8] *CAA International Structures*, MITRE Corporation, October 2014.
[9] *Transport Canada – The Commercialization of the Air Navigation System*, Office of the Auditor General of Canada, October 1, 1997.

CONCLUSION

The unique organizational and financing systems implemented by the countries we visited were designed in part to address their individual systems and demonstrate that there are different ways to structure and operate a nation's air traffic control system. Should Congress, the Administration, and aviation stakeholders move forward to consider different approaches regarding the organization, structure, and financing of our nation's air traffic control system, there are several significant policy questions that would influence decisions, given the unique characteristics of the U.S. system. But above all, safety must continue to be the United States' number one priority in overseeing our National Airspace System. Regardless of FAA's organizational structure, a strong and fully funded safety and regulatory agency remains critical to keeping our nation's transportation system one of the safest in the world.

This concludes my prepared statement. I will be happy to answer any questions you or the other Members of the Committee may have.

ATTACHMENT 1. ADDITIONAL INFORMATION REGARDING FOREIGN AIR NAVINGATION SERVICE PROVIDERS (ANSP)

Canada: Nav Canada is a private, non-profit, non-share corporation whose sole mission is to facilitate the safe movement of aircraft efficiently and cost-effectively through Canada's air traffic system. Beginning operations in 1996, the company is overseen by a 15-member Board of Directors comprised of representatives from airlines, general aviation, unions, and government. Except for its position on the board, the Canadian government does not have a direct role in the day-to-day operations of the company or management of the civil air traffic system.

United Kingdom: The main ANSP, National Air Traffic Services (NATS), was created in 1994 as a government-owned company and was converted to a for-profit, public-private partnership in 2001. The company received a 30-year license from the government to provide en-route air traffic services, but must compete with other ANSPs to provide air traffic services at the nation's airports. While the government is the company's largest shareholder (49 percent), it only receives dividends and does not involve itself in the day-to-day operations of the company or the civil air traffic system.

Germany: Deutsche Flugsicherung GmbH (DFS) was split from direct government control in 1993 and is a government-owned limited liability company. DFS provides services at 4 radar control facilities and at 16 national airports, while German states are responsible for obtaining services at other airports. DFS is run by a Board of Directors that is split evenly between the Government and employees. In 2004, the German government attempted to reorganize DFS into a public-private company by selling 75 percent of its shares to private investors. However, because the German constitution requires the operation of the air traffic system be carried out by the State, the privatization process was stopped in 2006.

France: The Direction des Services de la Navigation Aérienne (DSNA) is a government agency within the Ministry of Ecology, Sustainable Development, and Energy. Originally part of a single government organization, functional separation occurred between DSNA and the country's safety oversight group in 2005 when the government established the service provider under a separate directorate.

AIR TRAFFIC REFORM (ATC) SOLUTIONS

STATEMENT OF DOUGLAS PARKER

UNITED STATES HOUSE OF REPRESENTATIVES

COMMITTEE ON TRANSPORTATION AND INFRASTRUCTURE

SUBCOMMITTEE ON AVIATION

March 24, 2015

Good morning. I am Doug Parker, Chairman and CEO of American Airlines. I am also Vice Chairman of Airlines for America (A4A)[1] and I am here today in that capacity. Airlines for America appreciates the opportunity to participate in this important hearing.

We are both challenged and inspired, Mr. Chairman, by your call for transformational changes in the structure and funding of the air traffic control (ATC) system. There has never been a better time to consider such changes. Through the strong leadership of this Committee on both sides of the aisle, we now have a combination of intent and political will to transform the U.S. air traffic control (ATC) system.

At the outset, let me make it clear that supporting your call for transformational change does not mean that A4A is advocating transforming the current leadership of the Federal Aviation Administration. We believe that Administrator Huerta, Deputy Administrator Whitaker, Assistant Administrator Bolton, and the teams they lead are working as hard and effectively as possible within the current budget and organizational constraints to provide the safest air traffic system in the world and help move toward next generation air traffic control. The obstacles in moving

[1] A4A does not represent Delta Air Lines in this testimony.

more quickly and effectively to NextGen air traffic control are not ones of talent or leadership or desire. The obstacles are structural and financial. In an era of budget constraints and funding challenges these obstacles will only become more challenging. And given how important efficient air travel is to the United States economy and its citizens, we should not allow that to happen.

The airline industry believes that fundamental reform presents significant opportunities for improving our system. Like many of you, however, we also recognize the risks associated with major reform. Indeed there are many skeptics who argue that because of these risks there is insufficient political will both in Congress and in the industry to tackle as big an idea as that being posed today. For all the reasons that have been articulated so well by Chairman Shuster, we disagree with the skeptics. While there are indeed risks in making major changes, there are larger risks in doing nothing and, in any case, we believe the risks can be adequately mitigated.

Therefore, as the Committee tackles many of the unanswered policy questions in this debate, the airline industry is ready and eager to play a pivotal role in those discussions. And we are committed to a fact-based search for solutions that will work to improve our ATC system for all the stakeholders involved.

To that end, A4A has undertaken considerable research on various models of air traffic organizations around the world. In particular, we have done a thorough analysis to benchmark and assess the governance, financial and operational performance of the U.S., Canadian and European ATC models in order to make an informed comparison between our current system and those systems engaging in best practices outside the United States. Our evaluation reviewed the safety, predictability, efficiency, cost/productivity, customer service and NextGen implementation performance of each of the organizations.

That research leads us to the conclusion that to bring our ATC system to where it should be today and must be for the future, transformation, not renovation, is required.

We are fortunate to have the safest ATC system in the world. We should also be striving to be the most efficient. General agreement has existed for years that we cannot continue to run the ATC system the same way as it has been since the 1950s and expect different results. A string of reports from presidentially appointed aviation commissions, the Department of Transportation Inspector General, the Government Accountability Office, and independent private sector experts indicate that the FAA's ATC modernization efforts have been plagued by significant cost overruns and delays and call into question the ability of any organization, no matter how well managed, to deliver the results the people of the United States deserve under the existing funding and governance structure.

The fundamental questions that should be contemplated are (1) does the U.S. have the best possible governance and funding structures in place to deliver the most efficient, modern ATC system? (2) Have the ATC models used by other countries enhanced safety and efficiency? And (3) if the answer to that question is yes, can the best attributes of these models effectively be adopted to create an air traffic entity that works for the complex U.S. system?

Our benchmarking and fact-based assessment of the governance, financial and operational performance of the U.S., Canadian and European ATC models suggests some basic principles for success in any ATC organization. There must be:

(1) independent, multi-stakeholder board governance;

(2) effective management teams incentivized to pursue efficiencies without the constraints imposed on government agencies that hamper their ability to manage more nimbly and effectively;

(3) a fair self-funding model based on the cost of ATC services and free from budget constraints and short-term, declining appropriations, and

(4) the ability to manage assets and capital in a way that allows far greater speed to market of technological modernization.

These success factors lead to an effective operation because an independent ATC entity can then operate with long-term funding and governance certainty, subject of course to strong safety regulation and oversight by the FAA which could then solely focus on the those functions rather than having their current status of being both operator and regulator. Such an organization is accountable to stakeholders and users of the system driving effective decision making and efficient operations in order to capture the full benefits of the ATC system.

Our work to date leads us to believe that a commercialized, non-profit type governance structure would deliver the greatest benefits for a reformed ATC entity because such a structure would continue to put safety first, while driving value for all stakeholders. Let us be clear that under any and all scenarios, first and foremost, the FAA must retain the role as a safety regulator. Indeed, while we believe the FAA is already doing a commendable job in this capacity, a structure that allows them to focus solely on regulation and oversight has the potential to make the agency even more effective and efficient. And, any potential U.S.

organizational and funding structure must acknowledge our system's complexity and operating environment.

We should be focused on holistic changes in structure, governance, funding and accountability that will facilitate the development of a world class ATC organization. We should do it by using the best technology and best practices to deliver the safest and most efficient air traffic infrastructure in the world.

In conclusion, to those who will suggest change such as this is too hard and carries too much risk, we would simply reply that we are a country of great resources and courage. Many other countries have taken it on, and we have the benefit of learning from their combined experience. It would be a shame not to move forward just because the effort is challenging. The immeasurable cost of doing nothing is not an attractive alternative. We have the technology and the opportunity. Now we need to muster the will to attain an ATC system our passengers, economy and businesses across America, expect and deserve.

We look forward to returning to the Committee to further outline our broad and compelling vision after working collaboratively with the other stakeholders. Thank you for the opportunity to be here today.

Statement by
Craig L. Fuller
Vice Chairman
Federal Aviation Administration
Management Advisory Council (MAC)

Before the House Transportation and Infrastructure Committee,
Subcommittee on Aviation
On
"Options for FAA Air Traffic Control Reform"

March 24, 2015

Chairman LoBiondo, Ranking Member Larsen and Members of the Subcommittee, thank you for inviting me to speak today about "Options for FAA Air Traffic Control Reform."

I come before you today having served for the past fifteen months on the Federal Aviation Administration's Management Advisory Council (MAC). As you know, the Congress created this entity in 1996 for the purpose of providing the FAA Administrator with a wide range of advice and counsel from experienced stakeholders in the aviation community.

A list of the current MAC members is attached to this testimony. All of us who serve respect the intent of Congress in creating this structure and we appreciate the seriousness with which Administrator Huerta hears our views and engages in discussions of ideas around a wide range of topics, including the one we are here to discuss today.

As vice chairman of the MAC, I would like to share the following with you:

1. A brief review of the work we have engaged in during the past 15 months as background for our discussion;
2. An outline of the challenges we identified as a result of our outreach efforts;
3. Reflections on the governance reform question;
4. A governance reform concept developed for discussion in further outreach to the aviation community.

BACKGROUND

The current MAC members were appointed and we began working in January 2014. We immediately recognized that four official meetings a year would not provide a sufficient level of engagement to make a meaningful contribution to issues facing the FAA.

It was determined that a Working Group would be formed and that the initial task of the MAC Working Group would be to engage in outreach designed to better understand the issues members of the aviation community presented as challenges for moving our aviation system forward.

We are very much focused on what is needed to advance the world's most complex and diverse air transportation system in ways that insure the safe and efficient operation of the system. Additionally, we share the Committee's often stated desire to insure that we remain the leading air transportation system in the world.

Since it was formed, I have chaired the MAC's Working Group. All of the insights gained through the Working Group have been shared with the members of the MAC and leadership of the FAA. And, throughout our deliberations, we have sought to insure the full participation of MAC members.

Ultimately, our advice and counsel are shared with the Administrator.

At this point, I want to be clear that the following discussion about our findings from initial outreach efforts and the thinking of the working group around reform concepts have been shared with all MAC members and senior FAA officials. However, the MAC members have not formally endorsed any specific reform proposal. At this stage we are engaging in further outreach to refine the concepts that have been developed.

THE CHALLENGES

As an active pilot I can assure you that much has changed and changed for the better in our air transportation system. However, the modernization of air traffic control, avionics, aircraft and other critical elements of the air transportation system is and will remain an ongoing process.

The initial efforts by the MAC focused on better understanding impediments that would impact future success at the FAA in achieving its mission.

There were three clear categories where the MAC has focused as a result of the initial outreach efforts:

1. There is a need for continuity of funding given the work and nature of investments made by the FAA. Interruptions in the funding stream create delay and disruption. There is also a need to fund capital projects necessary to modernize facilities that current budget structures make challenging.

2. While the certification and regulatory functions conducted by the FAA have contributed enormously to safe and efficient operations, the structures and processes for decision making and resolution of issues are serving neither the FAA nor the aviation community in a satisfactory manner. There is

agreement about this and a significant effort within the FAA to change the culture and alter approaches; however, this area of concern was expressed across almost all aviation groups and must remain a high priority.

3. Finally, we heard a desire from some to explore different scenarios related to the structure and governance options available for the FAA as part of the Reauthorization process in the belief that an alternative governance structure might better address the issues facing the FAA.

REFLECTIONS ON REFORM

As previously indicated, while I will outline a concept for reform it is not something my colleagues on the MAC have formally approved; although, they have all had the opportunity to assist in the development of the concept.

That said, the invitation to participate in today's hearing affords us a unique opportunity to share with the Subcommittee a concept designed to address many of the issues facing the FAA into the future.

Personally, I applaud this Subcommittee and the leaders of the full Committee who have repeatedly called upon the aviation community to think boldly, develop transformational ideas and build a consensus around a path forward.

I believe the MAC has seriously considered and searched for what is transformational and doable.

First, we believe that the passage of FAA Reauthorization legislation this year is very important.

We also believe that there are a number of elements that can address important issues such as multiyear budget approvals and more real flexibility around the management of the FAA. These and other essential considerations are contained within the FAA Principals for Reauthorization recently shared with the Subcommittee by FAA Administrator Huerta.

We believe that measures can be developed around these principles that will achieve consensus and can be passed in 2015 and the larger reform discussion should not sidetrack progress on Reauthorization elements that need to be addressed this year.

When it comes to reform and changing the governance and structure of the FAA, we start with a notion that we have reached a moment in time where this discussion must take place.

It must take place because while much has been accomplished regarding the modernization of our air traffic control system, much remains to be done to achieve the benefits sought by all who operate within the system.

It must take place because innovation at every level – air traffic, aircraft, avionics, airport management and flight operations – moves with greater and greater speed. Efficiency gains and safety improvements require faster decision making and swifter execution at all levels to achieve specific objectives.

Finally, now is the right time to look at how the aviation community has successfully come together with the FAA to establish clear priorities. The NextGen Advisory Committee (NAC) presents one model for achieving consensus on complex issues and policies affecting the entire air transportation system. The level of serious engagement by the aviation community and FAA representatives shows us a path forward that can deliver a full across the agency focus on clear objectives with metrics and measures of performance.

A CONCEPT EMERGED

We carefully considered issues discussed with us during our outreach sessions with nearly 30 different organizations. We met with some organizations that have developed their own specific governance options and paid special attention to approaches that would remove the Air Traffic Organization from within the FAA.

While we found agreement that creating a stand alone Air Traffic Organization could provide greater accountability and a more business like approach to modernization, we would suggest that advantages identified for the ATO need to be applied across the full range of FAA responsibilities. We also believe that today more than ever there are synergies among the FAA's functional groups that facilitate the implementation of modernization priorities. Separating key functions now that direction has been clearly established and progress is being made could prove disruptive. Even those that rightfully admire the success of separating the air traffic function in some countries report that the transition takes several years to accomplish.

The concept we have developed seeks to address the issues as we see them and at the same time serves as a bold initiative that could be accomplished with the least amount of operational disruption at this critical time.

The concept is the creation of a Federal Corporation that would incorporate the full set of functions contained within today's FAA.

As a Federal Corporation, this new FAA would operate with it's own governing board. The Board would operate like a private sector Board and would not be advisory. It would retain and oversee the work of a CEO/Administrator who would report to the Board. Decisions in the future about sources of revenue would be

determined by the Board. Detailed operational metrics along with the annual budget would be approved by the Board. This would include a capital spending program for facility modernization.

An approach that changes the governance structure allows for the executive leadership to manage the entire agency with clearer objectives and standards set by a fully engaged Board with aviation experience that would do as the NAC has done, provide consensus on priorities matched with clear metrics around performance.

This would be bold and it would be transformational. The Board would not be precluded from making future choices related to spinning off elements of the enterprise. In the near term, given all of the progress being made today, a disruptive transition that could take years would be avoided. And, existing funding mechanisms would support the new entity initially through a transition period with the Board having the time and authority to develop a consensus around possible new funding approaches in the future.

We recognize that the concept of moving the FAA into a Federal Corporation with it's own governing board is a bold idea. It requires refinement through discussion with stakeholders and further discussion with the Members of this Subcommittee. We look forward to continuing this process in the weeks ahead.

CONCLUSION

I very much appreciate this Subcommittee's long history of engagement and leadership in the modernization of our nation's air transportation system. The discussions today and others you will hold are going to set a course for decades to come, a course that will insure that the most complex and diverse air transportation system in the world remains the safest and most efficient in the world.

I look forward to our discussion.

Thank you.

Craig L. Fuller
The Fuller Company
www.thefullercompany.com

Federal Aviation Administration

Press Release – Secretary Foxx Announces 10 New Members to FAA Management Advisory Council

For Immediate Release

January 13, 2014
Contact: Henry J. Price
Phone: (202) 267-3883

WASHINGTON – U.S. Secretary of Transportation Anthony Foxx today appointed 10 new members to the Federal Aviation Administration (FAA) Management Advisory Council (MAC). The council advises the FAA on management, policy, spending and regulatory matters.

The 10 new members are:

Steve Alterman, president, Cargo Airline Association;
Bill Ayer, former chairman, Alaska Air Group;
Montie Brewer, former president and CEO, Air Canada;
Ray Conner, vice chairman, The Boeing Co., and president and CEO, Boeing Commercial Airplanes;
Craig Fuller, president, the Fuller Co. and former president, Aircraft Owners and Pilots Association (AOPA);
Jane Garvey, Meridiam Infrastructure/MITRE board member and former FAA administrator;
Mayor Michael Hancock, City of Denver, Colo.;
Lee Moak, president, Air Line Pilots Association (ALPA);
John "Jack" Potter, president and CEO, Metropolitan Washington Airports Authority (MWAA); and,
Gwynne Shotwell,president and COO, Space X.

"These established aviation leaders will help guide the FAA in its many critical air-transportation policy decisions, supporting our commitment to a first class aviation system," said Secretary Foxx. "These proven aviation experts will be lending their knowledge to help advance the nation's air travel system as the safest and most efficient in the world."

Created by the Federal Aviation Reauthorization Act of 1996, the MAC meets quarterly to assess and advise the FAA on carrying out its aviation safety and air travel efficiency mission. The panel members serve three-year terms in a volunteer

capacity and retain their private sector positions.

"We are at a pivotal time in both the FAA and the aviation industry. These new MAC members will provide essential guidance and input as the FAA moves forward with NextGen and makes critical decisions about the future," said FAA Administrator Michael Huerta.

By law the MAC has 13 members. The new appointments join the three incumbent council members: Department of Transportation Acting Deputy Secretary Victor Mendez; Department of Defense Brig. Gen. Steven M Shepro; and Paul Rinaldi, president, National Air Traffic Controllers Association (NATCA).

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National Air Traffic Controllers Association
AFL-CIO

TESTIMONY OF

PAUL M. RINALDI, PRESIDENT,

NATIONAL AIR TRAFFIC CONTROLLERS ASSOCIATION, AFL-CIO (NATCA)

BEFORE THE

HOUSE COMMITTEE ON TRANSPORTATION AND INFRASTRUCTURE, SUBCOMMITTEE ON AVIATION

REGARDING

THE FEDERAL AVIATION ADMINISTRATION (FAA) REAUTHORIZATION:

OPTIONS FOR FAA AIR TRAFFIC CONTROL REFORM

TUESDAY, MARCH 24, 2015

1325 Massachusetts Ave., N.W. Washington, D.C. 20005 (202) 628-5451 (202) 628-5767 FAX www.natca.org

COMMITTEE ON TRANSPORTATION AND INFRASTRUCTURE
UNITED STATES HOUSE OF REPRESENTATIVES

INTRODUCTION:

Chairman LoBiondo, Ranking Member Larsen, Members of the Subcommittee, thank you for inviting me to testify before you today on reauthorization of the Federal Aviation Administration (FAA), and specifically on the Options for Air Traffic Control Reform.

The National Air Traffic Controllers Association (NATCA) is the exclusive representative of nearly 20,000 aviation safety professionals, including more than 14,000 air traffic controllers serving the FAA, the Department of Defense (DOD), and the private sector. In addition, NATCA represents FAA's Alaska flight service specialists, engineers and architects, traffic management coordinators, Notice to Airmen (NOTAM) service, flight procedures specialists, aircraft certification professionals, agency operational support staff, aviation technical systems specialists, automation specialists, drug abatement employees, airports division, regional counsels, and personnel from FAA's logistics, budget, finance, acquisitions, and information technology divisions.

Air traffic controllers and other aviation safety professionals are dedicated to ensuring that our National Airspace System (NAS) is the safest and most efficient in the world. More than 70,000 flights and over two million passengers are handled daily by air traffic controllers in the busiest and most complex airspace in the world, with roughly 5,000 planes in the sky at any given moment. Domestic airlines served an estimated 756.3 million passengers in 2014. In order to maintain that safety and efficiency, the aviation safety professionals work to improve safety procedures, modernize the NAS, and promote new technology. We have professional controllers involved in nearly every modernization and Next Generation Air Transportation System (NextGen)-related program on which the FAA is currently working.

The NAS is an integral part of our national infrastructure and an essential driver of our economy. Every day millions of individuals and businesses in the U.S. economy rely on the services provided by a complex web of aviation routes. Aviation drives nearly 12 million jobs that contribute $1.5 trillion to the nation's gross domestic product.

For years the FAA has been faced with unstable, unpredictable funding where interruptions in the funding stream have negatively affected all aspects of the FAA. The Agency has had to spread its resources thinly between fully staffing a 24/7 operation, as well as the modernization and daily maintenance required to sustain an aging infrastructure. When sequestration cuts were implemented, the situation became even worse. The FAA was forced to furlough its employees, including air traffic controllers, consider closing Federal and Contract towers curtailing air traffic services at smaller markets, place preventative maintenance on hold, and cut other services. The cuts also prevented the FAA from hiring new trainees to replace those certified controllers who retire, thus adding stress to an already understaffed workforce – the FAA Academy was shuttered for nearly a full year due to the sequestration cuts and the government shutdown. Sequestration cuts did not affect the FAA's budget for fiscal years (FY) 2014-15, but the cuts will return in FY 2016. This follows a five-year period of 23 authorization extensions for the FAA that included a partial shutdown of the FAA only then to have a full government shutdown on the heels of trying to recover from the impact of the 2013 sequester cuts.

NATCA believes that the upcoming FAA Reauthorization bill must address the lack of a predictable, stable funding stream for what is a continuous operational system focused on safety. We understand that addressing the stop-and-go funding problems may lead to an examination of potential structural changes

for the FAA. Any such structural change must be carefully examined to prevent unintended consequences from negatively affecting other aspects of the system. NATCA's priority is to ensure that we continue to safeguard the world's best air traffic control system during any transition, and that any potential change addresses the funding issue.

We must be precise in addressing the current problems, and we must also work together to find solutions that create a predictable funding stream while maintaining the safety and efficiency of the system. NATCA looks forward to working with Congress and other stakeholders to determine a solution that protects air traffic control and secures it for future growth. Before we can support any change, we must carefully examine all of the specifics. Details matter in this process. No system is like the United States' National Airspace System and no model used elsewhere in the world is perfect, much less perfect for a system as large, complicated, and diverse as ours. Any new model must be mission driven and must ensure continued robust aviation sector growth throughout every segment of our industry and throughout the entire country. We must protect and strengthen our great national asset that is the air traffic control system.

EXISTING PROBLEMS AT THE FAA:

The lack of stable, predicable funding has led to serious problems at the FAA. We have all seen these issues, which have been especially serious over the last four years. We believe that problems for FAA are not caused by the failure of Congressional appropriators to provide proper funding to the system, rather they result from a process where funding is affected by short-term funding bills, government shutdowns, partial FAA shutdowns, threatened government-wide and FAA specific shutdowns, sequestration, and 23 authorization extensions to name a few. Outlined below are the negative impacts on the NAS as a result of this unpredictable and unstable funding.

FAA operations and redundancy: The lack of stable, predictable funding means that the FAA has had to prioritize maintenance and basic repairs to ensure basic operations over maintaining safety redundancies and improvements in the system. This is a slippery slope because, when under stress, the existing system cannot maintain its safety and efficiency without such redundancies and continual improvements. The 2013 government shutdown forced the FAA to halt important maintenance, and low priority was given to preventative maintenance. Additionally, FAA working groups were unable to meet or travel during the shutdown, delaying implementation of new airspace and safety procedures.

In the spring of 2013, the FAA made sequester cuts by delaying non-critical repairs and the requisition of new replacement parts. The FAA designated a list of 56 airports and critical facilities. Any facility not on the list was subjected to a very strict requisition standard – a requisition would be granted only in extremely critical situations with a high potential to negatively affect safety or disrupt the expeditious flow of air traffic, have a high public visibility, or have the potential for creating a real and present danger to the flying public. An aircraft being grounded or a facility being off-the-air without communications ability was not a sufficient justification.

Staffing: The system has lost close to 1,000 air traffic controllers (6.2 percent of the workforce) between May 2013 and today, down from 14,793 to 13,882. That loss exacerbates an already tenuous staffing situation, in which 2,240 of 13,882 controllers are eligible to retire today. Of the 13,882 total controllers, 1,688 are still in training meaning they have varying levels of independence controlling traffic. If the current situation continues unchecked, the NAS will see an increased number of inadequately staffed and even critically staffed facilities. Such facilities require controllers to work overtime simply to provide adequate coverage of all needed positions and unfortunately in some cases do not have the staffing, even

with overtime, to open positions that need to be opened and staffed. Any further staffing reduction can have a detrimental and immediate effect on capacity, meaning fewer planes in the sky and greater potential for delays. Unfortunately, facilities that provide services in some of the busiest and most complex airspaces are already inadequately or critically staffed.

For example, New York TRACON (N90) and Chicago TRACON (C90) present a unique problem. Academy graduates rarely, if ever, achieve full certification at these facilities due to the complexity of their respective airspace. As of March 1, 2015, N90 had 146 Certified Professional Controllers (CPCs), compared to 160 in 2010. Today, 52 are eligible to retire, meaning roughly 36 percent of N90's fully trained controllers could leave at any time. N90 has five airspace areas and as of March 1, 2015, 17 of the 36 CPCs (or 47 percent) who provide radar approach control services for Newark Airport, are eligible to retire. If all 17 were to retire before anyone is trained to replace them, it would not be possible to safely maintain the same number of operations per day.

Due to the critical staffing levels, the controllers work six-day workweeks and are often held over for additional overtime. Extended workdays and workweeks lead to significant fatigue problems for the workforce, one of the highest priority safety concerns identified by the National Transportation Safety Board (NTSB). Understaffing also hinders facilities throughout the country from deploying NextGen programs, procedures, and equipment.

Hiring and training: Sequestration forced the FAA to cut its Operations budget, which resulted in furloughs for all FAA employees. Those cuts also led the FAA to institute a hiring freeze between March 2013 and December 2013. With the FAA training Academy in Oklahoma City closed for most of 2013 as a result of sequestration, we are only now seeing a resumption in hiring to replace retiring controllers. The FAA still cannot keep up with the pace of attrition. Due to the lost year, even maximum hiring in 2015 and 2016 will not make up for the attrition seen in 2013 through 2016 and will not adequately staff our facilities in the near term without a higher priority placed on training, and placement/transfer processes. There is an estimated 25 percent failure rate at the Academy and additional failures once these trainees are assigned to their facilities. Moreover, the Academy graduates that are successful in becoming fully certified air traffic controllers take two to four years to progress through the on-the-job-training requirements. The combined effects of these constraints result in a shortage of fully certified air traffic controllers and negatively affects the FAA's ability to train new hires, develop and implement modernized technology, and efficiently control traffic.

Once new hires graduate from the FAA Academy, another challenge comes in the form of the FAA's flawed and inefficient placement and transfer process of employees. Many facilities are in desperate need of qualified transfers, and many employees want to transfer to higher-level facilities that need additional staffing. Instead, historically the FAA has placed air traffic control trainees from the Academy to higher-level facilities, which typically have a higher attrition rate than the nationwide average of 25 percent for trainees. This works against the FAA's efforts to efficiently hire, train and retain new controllers.

Modernization delays: En Route Automation Modernization (ERAM) is set to be completed at the final two FAA facilities by the end of this month. Terminal Automation Modernization and Replacement (TAMR) and Standard Terminal Automation Replacement System (STARS) equipment were successfully implemented at multiple facilities throughout the country in 2014 (21 facilities are scheduled for installations in 2015, and 90 facilities through 2018).

Last year, 61 new procedures were implemented in the Houston area and 77 were successfully implemented in North Texas as part of the growing Optimization of Airspace and Procedures in the

Metroplex (OAPM) project. The System Wide Information Management (SWIM) Visualization Tool (SVT) is a new product that was installed last year at Southern California TRACON (SCT). It provides Surface Situational Awareness to controllers, traffic managers, and frontline managers and allows them access to surface data that was previously unavailable outside of a tower cab.

Wake Re-categorization (RECAT) has been successfully implemented in Atlanta, Louisville, Cincinnati, Houston, Memphis, and most recently at New York-Kennedy, New York-LaGuardia, Newark, Teterboro, with plans for imminent implementation of the procedures at Charlotte-Douglas, Chicago O'Hare, Midway and San Francisco. Wake RECAT has increased efficiency of flights, while maintaining the same high standard of safety the users of the NAS enjoy today. Specifically in Memphis, FAA data cites that FedEx boosted its capacity by 20 percent after controllers started using Wake RECAT in November 2012. The airline burns 4.17 million gallons less fuel each year and emits 39,992 fewer metric tons of CO2. FAA cites this as the equivalent of taking 8,421 cars off the road or the energy used by 3,650 homes per year. In Atlanta, the benefits are also clear: Delta reports two minutes of taxi time reduction per aircraft, and credits RECAT in providing the airline with a higher degree of predictability, which allows for more accurate scheduling.

These are just a few of many examples demonstrating that NextGen is having a beneficial impact on air travel in our nation, yet we cannot overlook the difficulties that interruptions in the funding stream have created for these modernization projects. Lack of a stable funding stream makes planning for multi-year projects almost impossible. As a result, we have seen significant delays and inefficiencies in modernization. For example, ERAM, which was scheduled to fully replace the old system in August 2014 at 20 FAA Air Route Traffic Control Centers nationwide, was pushed back to March 2015 due to the April 2013 furloughs. That delay cost more than $42 million. Likewise, the sequester furloughs and government shutdown significantly slowed the progress that was being made at nine test sites across the country for the OAPM project. The Houston test site was due to begin final implementation in December 2013. Implementation, and any associated benefit, was delayed until May 2014 due to the April 2013 furloughs.

To be clear, the FAA is making progress on NextGen, and has successfully reached significant milestones, but the funding component needs to be addressed with the utmost urgency. The NAS is a 24/7 operation, and the FAA's aviation safety professionals must continue to run that system while simultaneously working on research, development, testing, and the implementation of technology modernization.

Potential tower closures, reduced hours of operation, and loss of towers: Funding shortages threaten services to rural and small communities that benefit from the business that air service brings. When sequestration cuts were initially announced, the FAA was prepared to close towers and even released a list of towers under consideration for closure. Ultimately tower closures were avoided, but they could again become a necessity. Service could become unavailable for general aviation, military exercises and flight schools at these airports, and we would see a reduction in services for airlines, commercial interests and private pilots who rely on towers at smaller airports and for secondary services like pilot training.

Another consequence of continued sequestration cuts could be closure of more than 100 of the Federal Contract Towers (FCT) throughout the country. This would affect general aviation and rural communities that depend on the services provided. Workload would increase dramatically for the FAA facilities that would have to take over the services of the FCTs just as those FAA facilities will be facing reduced staffing due to sequestration cuts resulting in furloughs. Contract towers also provide crucial support to

our nation's military and private enterprises. For example, the tower at Lone Star Executive Airport in Texas is home to one of only two Apache helicopter maintenance units in the country.

Physical infrastructure: The FAA cannot keep up with replacing outdated infrastructure and technology at current budget levels. The average age of facilities in the NAS is 50 years, and the FAA has testified that it struggles with the maintenance of existing infrastructure. The FAA recognizes that we cannot expect all aging infrastructure to be replaced, because most facilities were built at the same time, and the FAA's ability to invest in new towers and radar facilities faces increasing pressure.

The 2013 government shutdown disrupted the maintenance of NAS infrastructure, at which point many projects were delayed due to the furlough of FAA employees, including engineers, architects, and aircraft certification and airport division employees. Safety-related equipment modifications to aircraft, as well as engineering and testing services were also threatened, all of which negatively affect maintenance to infrastructure as well as the FAA's modernization efforts. With 70 percent of the technical workforce furloughed, projects at some of the nation's busiest airports were delayed.

One current example of the aging infrastructure is the air traffic control tower at Tampa International Airport (TPA). At a recent House Appropriations hearing in the Transportation, Housing, and Urban Development (THUD) Subcommittee, Representative Jolly of Florida highlighted the current condition of NAS facilities across the country. The Congressman noted that TPA is about to "fall over the cliff" in terms of its expected life span. New modernization equipment is unable to fit into the aging tower as its condition drastically declines. This creates obvious challenges for the FAA, as it must choose between the pressure to modernize and the immediate need to fix facilities such as TPA.

BROAD CORE PRINCIPLES:

NATCA believes a discussion on any type of reform must take place in a well-reasoned and rational manner, without rushing into any structural changes. We agree that the current funding situation is unacceptable and we would like to explore alternative models that could address these problems. Any reform must ultimately ensure the following:

1. Safety and efficiency remain the mission;
2. Stable, predictable funding to adequately support air traffic control services, staffing, hiring and training, long-term modernization projects, preventative maintenance, and ongoing modernization to the physical infrastructure;
3. Robust and continued growth in the aviation system; and,
4. A dynamic aviation system that continues to provide services to all segments of the aviation community, from commercial passenger carriers and cargo haulers, to business jets, to general aviation, from the major airports to those in rural America.

NATCA believes that it is critical that the specifics of any reform are vetted among all of the stakeholders. NATCA cannot commit to any concepts in a vacuum. Not only do the principles need to be sufficient to meet the needs of the NAS, but so do the details of any overhaul, regardless of how significant. We cannot afford a mistake that upsets this critical engine of economic growth. There cannot be a disruption in services during a transition. Given the National Airspace System's 24/7 activities, any transition, no matter how small, must be seamless. NATCA will support nothing less.

PROPOSED MODELS BEING DISCUSSED IN PUBLIC DOMAIN:

As NATCA, other industry stakeholders, and this Committee have observed over the years, funding challenges have become the norm. Year-to-year the FAA has experienced continuous challenges and faced significant problems because of a lack of a predictable funding stream. As a result, stakeholders, think tanks, and others have been looking at alternative funding and structural models that could address these funding problems. Here are some of those alternatives followed by a brief description. A discussion follows regarding their advantages and disadvantages.

- **Status Quo Model:** In this model, the FAA would remain as-is with the same funding and structure. Governance would remain within the U.S. Department of Transportation (DOT).
- **Enhanced Status Quo Model:** In this model, governance would remain within the U.S. Department of Transportation (DOT) but changes would be needed to address the manner in which the FAA is funded without changing it structurally.
- **Government Corporation or Independent Agency:** This model would pull out the entire FAA, or parts of the FAA, and create a government corporation or independent agency. The government corporation model would require a Governing Board that includes stakeholders and government officials. This model would leave air traffic control functions within the government, but would remove them from the DOT.
- **Not-For-Profit Private Model:** This model would require a Governing Board with stakeholders and government officials. An example of this would be NavCanada whose Board has three Directors elected by the Government of Canada. In this model, safety oversight and regulatory functions would remain within the FAA.

FINDINGS & ANALYSIS:

Below are some key points on the potential structural models that have been discussed for the FAA, and the effects these changes would have on air traffic control. NATCA cannot endorse a particular system without knowing all of the details and ensuring a seamless transition.

Status Quo Model
Simply restructuring the FAA should not be an option because it does not solve the funding problems. The FAA has been restructured numerous times, and with each restructuring we see increased bureaucracy. Restructuring has created more overhead and non-operations jobs that increase the time to get results. One example of this is in the procurement model. The FAA is exempt from the normal government procurement process, but has developed its own bureaucratic process that mirrors the rest of government. Unfortunately, this process is inappropriately slow and complicated for a system that needs new technology as quickly as possible.

Enhanced Status Quo Model
For this model to succeed the FAA must have multi-year appropriations and long-term authorization, budget flexibility, mandatory funding for FAA employees, and no disruptions to operations, other safety related services, and modernization efforts.

Government Corporation/Independent Agency Model
There is no profit motive in this model, and the national interest would be preserved without risk. This model could be funded in a manner similar to the Aviation Trust Fund. This would fund a system that supports operations, training, and modernization, with the benefit of a leaner bureaucracy and fewer obstacles to implement changes.

A significant benefit of this model is the potential for an alternative funding process, meaning that politics would be less likely to interfere with the safety and efficiency of operations. Several additional routes could be utilized to generate revenue, such as raising funds through public-private partnerships that use lease-backs of facilities. Consolidation and realignment, when properly designed, can be used to save money and update technology more efficiently without compromising the safety of the system. This model could also encourage innovation from within the organization, as has happened in other non-profit Air Navigation Service Providers (ANSPs).

One concern is that a different funding model could be a deterrent to General Aviation (GA), which is sensitive to changes in services and generally uses facilities that have lower traffic volume.

Not-for-Profit Private Model
The positive aspects of this model include it being a single focused mission, allowing for greater flexibility for technology development, less bureaucratic than the current FAA, and allowing for a more streamlined procurement process.

The cons include requiring a long transition period to create a private model. This model is also very difficult to apply to the U.S. NAS because our system is so diverse and complex.

This model also poses risks regarding the protection of the greater good. A private model must still be cost-conscious and may be forced to diminish services to rural areas because they do not offer high returns. Routes and towers could be eliminated because operating at a loss in certain areas creates a risk of bankruptcy. This would only be a problem for a model completely separate from the government; any model that is maintained within the government can be insulated from these types of concerns.

The NAS is a national asset that benefits even those who do not fly, and is essential to communities that rely on air traffic services. There is a national interest in maintaining aviation growth, and not only in those areas where profits can be made.

NATCA absolutely opposes any model that derives profit from air traffic control services. We cannot support a model that allows the operations to become a driver for profit. There are several reasons why air traffic control services should not become profit-driven. First, it could lead to compromising necessary operational redundancies to increase profit margins. Corners could be cut to save costs, which could ultimately compromise safety. A profit-driven private system, like a not-for-profit private system, might cut services to rural communities because of the lack of returns for shareholders. A profit-driven system might also be an impediment for our General Aviation (GA) sector, which is very sensitive to changes in services or increased costs.

In addition to the dangers of creating a profit motive, a for-profit model would be logistically difficult to create. There would inevitably be a lengthy transition period to turn the current FAA in to a for-profit entity, and the transfer of assets would be a complicated process as well.

Other Air Navigation Services Providers
As this discussion has progressed, many stakeholders have sought to examine how other ANSPs are structured, and how well they deliver air traffic control services. There has been significant discussion on the NavCanada model. While there may be benefits to the Canadian model, NATCA is uncertain if that model is scalable to the size, complexity, and diversity of our airspace.

- **NavCanada in Canada:** This privately owned, not-for-profit company established in 1996 works to control the operations of the air traffic control system. Its revenue source is user fees. The advantage of this system is its single-focused mission that prioritizes efficiency. The disadvantages were in its difficult and lengthy transition period. It may also be difficult to apply that model to one as diverse and complex as ours. For example, the United States controls 132 million flights annually (2012), compared to 12 million in Canada in an area a fraction of the size of the United States' NAS. The United States has 21 centers, compared to seven in Canada, and 315 towers compared to 42. According to Airport Council International's Top 30 Busiest Airports in the world (based on aircraft movements) the U.S. currently has 8 of the Top 10 busiest airports in the world, and 16 of the Top 30. Canada has one (1) – Toronto, which comes in at number 15.

- **NATS in the UK:** This private, for-profit corporation works with the government to create a public-private partnership. However, the profit motive remains. A December 2014 large-scale failure caused delays and cancellations. Some have attributed that incident to the cost-cutting efforts that have delayed upgrades. In addition, in the fall of 2014, NATS lost a bid to provide air traffic services for Gatwick Airport in the UK. Instead, the airport agreed to contract air traffic services to the German ANSP (described below).

- **Deutsche Flugsicherung in Germany:** In Germany, the government now has control of air traffic functions, which were transferred to a state-owned corporation, called Deutsche Flugsicherung (DFS), in 1993. The system is funded through user fees, which are sufficient enough to continue with modernization efforts. Likewise, it has seen improved productivity and operational efficiency through investments in facilities and equipment. At the time, Germany's federal budget constrained efforts to modernize the air traffic control infrastructure. According to a 2005 GAO study of ANSPs, Germany saw improved safety after its transition, although the report acknowledged that safety could not be adequately measured or forecasted at the time.

CONCLUSION:

NATCA appreciates the opportunity to be part of this discussion. Many in Congress, as well as many key stakeholders, including the FAA, agree that interruptions to the funding stream is detrimental to the operations of the NAS and something must be done to ensure the continuity of funding. NATCA believes the U.S. must have a mission-driven model. We cannot lose sight of the fact that any new model will need to continue running the safest, most efficient, most diverse and most complex airspace in the world. Safety and efficiency are our first priorities and any proposed changes cannot jeopardize these priorities. The United States leads the world in aviation and we must continue to do so.

NATCA appreciates the opportunity to appear before the Committee and participate in this dialogue.

Corporatizing the U.S. ATC System

Testimony of
Robert W. Poole, Jr.
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House Committee on Transportation & Infrastructure
Subcommittee on Aviation
March 24, 2015

Chairman LoBiondo, Ranking Member Larsen, and fellow Members:
My name is Robert Poole. I direct the transportation policy program at Reason Foundation, a nonprofit think tank with offices in Los Angeles and in Washington, DC. I'm a graduate of MIT with two degrees in mechanical engineering. My first position after graduating was with a large aerospace firm, Sikorsky Aircraft.

My Credentials on Today's Topic

I have been studying the performance of the U.S. air traffic control (ATC) system since before the 1981 controllers' strike. Following that strike I gave an invited presentation to DOT Secretary Drew Lewis and FAA Administrator Lynn Helms on a corporation approach to rebuilding the system. I presented my first paper on ATC corporatization at the Transportation Research Board annual meeting in 1982.[1] In 1985 I was an advisor to the Air Transport Association's white paper on corporatizing the ATC system. Likewise, I advised Vice President Gore's National Performance Review in 1993-94 on what became the DOT's proposal for a U.S. Air Traffic Services (USATS) corporation. I was also an advisor to the Mineta Commission in 1997, which recommended an approach similar to corporatization. In 2001, a Reason Foundation study that I co-authored with Viggo Butler was a detailed proposal for a user-funded ATC corporation.[2] That plan received the support of 12 retired FAA officials, including three previous Administrators.[3]

This decade I have been a member of two working groups seeking to develop consensus recommendations for fundamental ATC restructuring. One was convened by the Business Roundtable starting in 2011. It has included a number of former DOT and FAA officials, as well as leading aviation researchers and consultants. The other working group was convened by the Eno Transportation Center in 2013. Co-chaired by former DOT Secretary Jim Burnley and former Sen. Byron Dorgan, it has engaged 16 aviation stakeholder groups to seek agreement on ATC reform principles. I also serve on the National Aviation Studies Advisory Panel of the Government Accountability Office (GAO) and am a long-time member of the Air Traffic Control Association.

Over the years, since the first ATC corporatization in 1987 (Airways New Zealand), I have followed the progress of this change in the structure, funding, and governance of the entities providing this vital service. I have visited the headquarters and met with the leaders of Airways New Zealand (in Wellington) and Nav Canada (in Ottawa). I served on the advisory board of the first empirical study of the performance of corporatized ATC providers, alongside former Administrator Langhorne Bond and future Administrator Randy Babbitt. I have met their counterparts at a number of other corporatized Air Navigation Service Providers (ANSPs) at conferences organized by the Air Traffic Control Association (ATCA) and the Civil Air Navigation Services Organization (CANSO).

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[1] Robert W. Poole, Jr., "Privatizing Air Traffic Control," *Transportation Research Record 912*, 1983
[2] Robert W Poole, Jr. and Viggo Butler, "How to Corporatize Air Traffic Control," Policy Study No. 278, Reason Foundation, February 2001
[3] "A Statement Concerning the Future of the U.S. Air Traffic Control System," 12 former FAA officials, May 1, 2001 (http://reason.org/news/show/1002978.html)

Assessment of the Problem

Broadly speaking, I agree with the assessments made by the FAA Management Advisory Council in January 2014 and many others about the problems plaguing the FAA's Air Traffic Organization (ATO). These problems can be grouped into three categories, as follows:

- **Funding:** uncertain, unstable, and poorly suited to paying for large-scale capital modernization programs such as NextGen.
- **Governance:** a system with so many legislative branch and executive branch overseers that it focuses ATO management attention far more on overseers than on ATO's aviation customers.
- **Culture:** an organizational culture that is very risk-averse and status-quo oriented.

These problems are all inter-related, but since the culture problem has received less attention than the others, I will focus mostly on that in my testimony today.

My most recent research on ATC reform was a study commissioned by the Hudson Institute as part of their Initiative on Future Innovation. My task was to examine the extent to which FAA generates innovation in its area of operation (the ATC system) and to explore what would lead it to be more successful in doing that.[4] In the project I selected seven disruptive innovations in air traffic control and did brief case studies on each, observing how each innovation has been dealt with by the ATO and by its corporatized ANSP counterparts overseas. The innovations are as follows:

1. Digital communications between pilots and controllers (DataCom)
2. Replacing ILS with GPS-based landing systems (GBAS)
3. Using GPS for surveillance (ADS-B)
4. Performance-based navigation (PBN)
5. Real-time weather data
6. Remote towers
7. Facility consolidation

The ATO's approach to each of these was far more hesitant than that of corporatized ANSPs in other countries. These findings illustrated its conservative culture and status-quo bias. I next identified five possible explanations of why this culture exists, and the draft report was then sent out to about 15 highly knowledgeable peer reviewers. Hudson convened a one-day workshop at which these reviewers provided feedback, which supported all five hypotheses based on their experience either within FAA or working with FAA over many years. Those five detrimental aspects of organizational culture are as follows:

1. Self-identity as a safety agency, rather than as a technology user. This stems from the ATO being embedded within FAA, whose mission is safety. Nearly all the innovations relevant to NextGen come largely from the aerospace/avionics industry, which has a much more innovative, dynamic culture. All those companies are regulated at arm's

[4] Robert W. Poole, Jr., "Organization and Innovation in Air Traffic Control," Hudson Institute, January 2014 (http://reason.org/files/air_traffic_control_organization_innovation.pdf)

length by FAA safety regulators—but the ATO is embedded inside the aviation safety regulation organization.

2. Loss of technical expertise. Partly due to its status-quo culture and partly due to civil service pay scales, the FAA has a chronic problem with not attracting or not being able to retain the best engineers and software professionals. This means that a lot of the detailed requirements for new systems end up being defined by contractors, which can lead to costly additions that make the systems more complex than is needed and more costly than necessary.
3. Loss of management expertise. For the same reasons that FAA has limited technical expertise, it also has trouble attracting and keeping top-notch program managers who are used to being held accountable for results.
4. Excessive oversight. Inherent in being a large government agency that is spending taxpayers' money, the FAA must be held accountable to all the normal government overseers. The ATO must respond to oversight by the FAA Administrator, the DOT Secretary, the DOT Inspector General, the Office of Management & Budget, the Government Accountability Office, and up to 535 Members of Congress. Responding to all these overseers takes up a large amount of senior management time.
5. Lack of customer focus. Because the ATO gets its funding from Congress, it ends up—de-facto—acting as if its customer is Congress, rather than the aviation customers it is set up to serve.

Fixing the ATO's Organizational and Structural Problems

When I compared this set of problems with what I have observed over the past 15 years in corporatized ANSPs, the remedies appeared to be fairly straightforward.

To directly change the status-quo culture to something more like the innovative culture we observe in the Boeings and Honeywells of the world, the first requirement is to *organizationally separate the ATO from its safety regulator parent.* That would put the ATO at arm's length from its safety regulator, like all the other key players in aviation—airlines, business aviation, general aviation, airframe manufacturers, engine producers, pilots, mechanics, etc. For more than a decade, separation of ANSPs from safety regulators has been ICAO policy[5], and the United States is the last developed country that has not taken this step. This change is *necessary* for changing the ATO's organizational culture, but is not sufficient by itself.

The second requirement is to *change the funding system.* Instead of having users of the system pay taxes to the government, which channels the funds through the federal budget process and leads to the ATO acting as if Congress is its customer, shift to the system used everywhere else in the world in which airspace users pay fees and charges directly to the ANSP, which in this case would be the newly separate ATO. That would refocus the organization's attention on satisfying its aviation customers, as is true of every other high-tech service business. This is also the model on which airports operate in nearly every developed country, including the United States. Airports issue revenue bonds, based on their predictable stream of revenues that come directly from users, to finance large-scale capital modernization efforts. So do the larger corporatized ANSPs.

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[5] International Civil Aviation Organization, *Safety Oversight Manual*, Doc. 9734, Part A, Paragraph 2.4.9 (2001)

The third needed change is a *different governance model*. Since the revamped ATO would no longer be spending taxpayers' money, the proper oversight should to come from those providing the revenues—its aviation customers. So those customers, along with other key stakeholders such as airports and employees, should be the ones responsible for oversight and governance (apart, of course, from arm's length safety regulation by the revamped FAA). If organized as a non-profit corporation governed by a stakeholder board, the result would be an organizational form called a user co-op. There are many thousands of user co-ops in America, particularly in electric and water utilities.

Evidence from Abroad

There is growing evidence over the past 25 years that ATC corporatization has led to better performance by self-funded ANSPs.

The first major study was published in 2006, carried out by MBS Ottawa with support from George Mason University, Syracuse University, and McGill University[6]. It assembled before-and-after data from 10 corporatized ANSPs, and assessed their performance on safety, modernization, service quality, cost, financial stability, and public interest considerations. From the executive study comes the overall conclusion, backed up by detailed data in the 103-page report:

> "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 ANSPs 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."

A second major study appeared in book form in 2007, researched and written by Clinton V. Oster, Jr. of Indiana University and John S. Strong of the College of William and Mary.[7] Their book provides a detailed review of the transition from government agency to self-supporting ANSP in Australia, Canada, Europe, New Zealand, and the United Kingdom. This is followed by three chapters on ATC problems in the United States and suggestions on how to apply the lessons learned in other countries to U.S. ATC reform. The IBM Center for the Business of Government had Oster and Strong produce a 65-page report using the Canadian and British experiences to recommend a corporatization approach for the United States.[8]

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[6] MBS Ottawa Inc., *Air Traffic Control Commercialization Policy: Has It Been Effective?* January 2006 (provide URL)

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

[8] Clinton V. Oster, Jr. and John S. Strong, "Reforming the Federal Aviation Administration: Lessons from Canada and the United Kingdon," IBM Center for the Business of Government, 2006 (www.uquebec.ca/observgo/fichiers/92684-fichier%2013.pdf)

In recent years, two international organizations have been collecting and publishing data on ANSP performance and cost-effectiveness: Eurocontrol and CANSO. Eurocontrol's Performance Review Commission deals only with the ANSPs of the 39 European members of Eurocontrol. CANSO, which has 90 ANSP members worldwide, relies on voluntary reporting from member ANSPs, and some of the higher-cost ones have not always released their numbers. CANSO's 2014 report includes performance figures for a number of developed-country ANSPs, including the FAA's ATO. One key performance indicator is *cost per IFR flight-hour*. Figures for several ANSPs are presented here:

Cost per IFR Flight-Hour (US$)

ANSP	Country	2011	2012	2013	2014
Air Traffic Organization	United States	$429	$433	$454	$450
Nav Canada	Canada	$297	$327	$339	$340
Airways New Zealand	New Zealand	$344	$396	$431	$420
DFS	Germany	na	$650	na	na
NATS	U.K.	$875	$774	na	na
ENAIRE	Spain	$870	$801	na	na

Source: CANSO, *Global Air Navigation Services Performance Report*, 2014

While many factors account for differences among ANSPs, it is noteworthy that despite the large economies of scale inherent in the provision of ATC service, Nav Canada's cost-effectiveness is significantly higher than that of the ATO, despite Nav Canada being only one-ninth its size and activity level.

Which Organizational Form Is Best?

Of CANSO's, 90 full members, including the FAA's ATO, about two-thirds (60) are commercialized, i.e., self-supporting from fees and charges and regulated at arm's length by the government's safety regulator.

In its recent report on ATC corporatization, the Congressional Research Service provided a table listing 22 ANSPs with their number of centers, number of employees, and organizational form.[9] The most common form (13 of the 22) is a government-owned corporation. Another five are government agencies, and four are various forms of non-government companies. These four are Belgocontrol (Belgium), Nav Canada, Skyguide (Switzerland), and NATS (U.K.). Though not listed in the CRS table, AeroThai is also a non-government corporation.

In choosing between a government corporation model and a non-profit corporation model, it is important to understand the profound difference between a "government corporation" in countries such as Australia, Germany, and New Zealand versus the typical "government corporation" in the United States. In most modern western nations, a government corporation is for all practical purposes a real business, incorporated under normal corporate law, but with all

[9] Bart Elias, "Air Traffic, Inc.: Considerations Regarding the Corporatization of Air Traffic Control," Congressional Research Service, 7-5700, January 5, 2015

of its shares owned by the government. In most cases, it is entirely self-supporting from customer revenues and has access to the bond market to finance long-lived assets.

That is dramatically different from most government corporations in the United States. Most of our government corporations remain part of the federal budget. Many have congressional oversight committees, require OMB budget approval, and are subject to audits by GAO and possibly by an Inspector General. Even the nominally independent U.S. Postal Service is subject to congressional intervention in what should be business decisions such as closing unneeded facilities, and its rates are determined by a Postal Rate Commission that pursues multiple goals beyond ensuring a well-run, cost-effective business. Even the Tennessee Valley Authority, one of America's largest electric utilities, though only nominally on-budget, still has congressional oversight committees, an arbitrary cap on bond issuance, and a politically appointed board.

An alternative that has received serious attention from the Business Roundtable is a *federally chartered nonprofit corporation*. The American Red Cross and the U.S. Olympic Committee were chartered by acts of Congress as self-supporting, tax-exempt, nonprofit corporations. COMSAT, which pioneered communications satellites, was originally organized this way, but later became an ordinary for-profit company. The Red Cross and Olympic Committee boards are not political appointees; they are selected by these organizations based on candidates' relevant knowledge and experience. This model is actually closer in how it functions to the well-managed government ATC corporations like Airways New Zealand, than typical U.S. government corporations like the Postal Service and the TVA.

There is also extensive U.S. experience with the nonprofit user co-op model. There are thousands of examples of rural utility co-ops, agricultural co-ops (Sunkist, Ocean Spray) and federally chartered credit unions. User co-ops are also common in U.S. aviation. There are many common-use co-ops in operation at airports, such as LAXFuel Corporation, jointly owned by airlines serving Los Angeles International Airport to operate a fuel farm and provide aircraft fueling services. And two major entities in aviation were organized as user co-ops—ARINC and SITA. ARINC was set up by fledgling U.S. airlines in 1929 to be the licensee for air-to-ground radio services. It went on to develop the earliest air traffic control services (which were taken over by the Commerce Department in 1936). ARINC remained in business as a user co-op providing worldwide communications and other services to aviation into the first decade of the 21st century, when it was purchased by the Carlyle Group and more recently acquired by Rockwell Collins. SITA has retained its original nonprofit, user co-op status and among its many aviation services is partnering with CANSO to provide ANSP billing services worldwide.

Canada's ANSP, Nav Canada, is similar to the user co-op model. It was chartered by an Act of Parliament as a not-for-profit, stakeholder-governed corporation, designated by Canada as its provider of ATC services, consistent with ICAO policies. It has an excellent track record, and as noted in the table above, is delivering ATC services at higher productivity than the nine-times-larger ATO. To me, that suggests the potential productivity gains that might be achieved by corporatizing the ATO as a federally chartered, nonprofit, tax-exempt stakeholder-governed corporation.

After three decades of research on ATC reform, my conclusion is that the nonprofit corporation model with stakeholder governance is the best organizational form. In particular, it is most likely to produce the kind of organizational culture we need to regain U.S. leadership in air traffic control. And I'm happy to report that this is also the conclusion of the Business Roundtable's extensive efforts.

I will be happy to answer any questions you may have, either today or subsequently in writing.

CORRECTION TO WRITTEN TESTIMONY:

Witness Robert W. Poole, Jr., made a post-hearing correction to his written testimony. On page 6, the table and paragraph immediately following it should be replaced with this table and paragraph:

Cost per IFR Flight-Hour (US $)

ANSP	Country	2010	2011	2012	2013
FAA ATO	United States	$444	$452	$454	$450
Nav Canada	Canada	$335	$338	$325	$334
Airways NZ	New Zealand	$385	$404	$416	$414

Source: CANSO, *Global Air Navigation Services Performance Report, 2014*, adjusted for exchange rates

For comparison purposes, the latest figures for several other developed country ANSPs are for 2011, and are $650 for Germany's DFS, $774 for the UK's NATS, and $801 for Spain's ENAIRE. While many factors account for differences in ANSP performance, it is noteworthy in comparing Nav Canada and the FAA ATO that the former is significantly more productive, as measured by cost per IFR flight hour, despite Nav Canada being only one-ninth the ATO's size and flight activity level.

Written Testimony of David Grizzle
Before
The House Transportation and Infrastructure Committee,
Subcommittee on Aviation
March 24, 2015

My passion to see Congress embrace transformational change in air traffic control is the result of my long career in aviation – 22 years at Continental Airlines in various senior executive positions and four and a half years at the FAA, mostly as Chief Operating Officer of the Air Traffic Organization.

I firmly believe that taking air traffic control out of government and creating an independent not-for-profit is the only means to assure a more stable future for employees, a more efficient system for the users and a safer, more reliable system for consumers.

Multiple times over the last 20 years, Congress has expressed its frustration with the performance of the Federal Aviation Administration and its inability to modernize its equipment. In the *Air Traffic Management System Performance Act of 1996*, Congress found that "In many respects the Administration is a unique agency, being one of the few non-defense government agencies that operates 24 hours a day, 365 days of the year, while continuing to rely on outdated technology to carry out its responsibilities for a state-of-the-art industry."

The 1996 Act gave the Administrator sweeping new powers to govern the Agency with less external interference, almost in a non-governmental way.

Specifically, the Administrator was to be the "final authority" in appointing officers and hiring employees and setting their compensation, all of which could be done through powers granted a year before to design a personnel management system outside of the restraints of Title 5. The Administrator was given equally broad powers with respect to acquisitions,

which could, again, be accomplished through a separately authorized acquisition management system that was to have improved the Agency's timeliness and cost-effectiveness in acquisitions by removing the FAA from the application of the Federal acquisition regulations.

To put an even finer point on its intentions, Congress provided that "except as otherwise provided for in this title, [the Administrator] shall not be required to coordinate, submit for approval or concurrence, or seek the advice or views of the Secretary or any other officer or employee of the Department of Transportation on any matter with respect to which the Administrator is the final authority."

Still not satisfied with air traffic control performance, seven years later, Congress created the Air Traffic Services Committee, a Presidential-appointed, Senate-confirmed board to oversee the system. The Committee's responsibilities included approval of ATC strategic and modernization plans and of all acquisitions over $100,000,000. The Committee was also supposed to make budget recommendations.

As Chief Operating Officer, I was able to see vividly what came of Congress' best intentions to create a governance structure – still within the Federal government – that respected the peculiar needs of the unforgiving, critical operation of air traffic control. The results have not been favorable.

In the area of human resource management, every significant personnel matter is submitted to the Department of Transportation for review, notwithstanding the provisions of the '96 Act. Whether a change in compensation, the appointment of senior management, the extension of a controller contract or the restoration of pay for employees following the furloughs of 2011 and 2013, the Department, and often other government entities, reviewed our decisions, and they were always delayed, frequently modified and sometimes reversed. The FAA has

continued to undervalue human capital, resulting in our once again having a prospective shortage of controllers, technicians that lack necessary certifications and many new supervisors who have been in their jobs for over a year with absolutely no management training. And the FAA's personnel management system in both design and effect is almost indistinguishable from Title 5, from which the FAA's system was to have been separated.

Procurements continue to be grindingly slow; specifications were and continue to be inexpertly determined, and major programs, which at the time of their conception were too massive and vastly exceeded the technological visibility of their planners, continue to be behind schedule and over-budget. And this does not occur because our contractors are rapacious or our program managers unskilled. It occurs because the system was never designed to support a high-performance operation like air traffic control.

Finally, what happened to the Air Traffic Services Committee that was supposed to bring oversight from individuals highly knowledgeable, as the statute states, in the areas of large service organization management, customer service, management of large procurements, information and communications technology, and labor relations? Its vacancies have not been filled in a decade; it has not convened in years, and, therefore, certainly has not reviewed any air traffic modernization plans, approved any major acquisitions or made any budget recommendations as provided in its enabling statute. And all this despite the continuing references to this day to the Committee in the Agency's procurement manuals and the intent that the Committee would provide more business-like oversight of the air traffic control function.

The last twenty years – most of which were times of budgetary plenty – teach us that political governance cannot provide the oversight, guidance and continuity of attention necessary to support a critical and technology-intensive operation like air traffic control.

Based on my experience and the failed half-measures of the past, I believe that our only solution is one that entrusts politically unencumbered air traffic governance and stewardship to individuals who understand and value the needs of the users, employees and passengers of the system and who have a continuing interest in and appreciation for this critical operation.

In greater detail, my experience leads me to suggest the following provisions as the most likely to bring air traffic control to the level of performance that Congress has envisioned for decades.

Structure

A not-for-profit entity that has no stockholders, but is controlled by its board of directors, independent of the Federal government except for safety oversight and appeal of rates and charges, is the construct that offers the greatest assurance that air traffic control would be operated safely, efficiently and for the benefit of all of the stakeholders of the national airspace and air traffic control system. Because the new entity would be the exclusive provider of air traffic services in the United States, a non-stock corporate form reduces concerns that the operator might cut corners either in safety, employee care or access, merely for the sake of enhancing stockholder returns. It also addresses anxiety about excessive rates and charges, because there would be no value leakage from the enterprise to incentivize generating income above what is required to provide efficient access.

Board Composition

The entity should be controlled by a board of directors, whose members are designated by stakeholders who have a continuing, substantial interest in air traffic control. The board will appoint the Chief Executive Officer. The board should certainly include

representatives of users of the system who depend upon it and the employees who make it happen. It may also include representatives of other constituencies that have a substantial interest in the operation. Critically, with few exceptions, members of the board should be appointed by private stakeholders who are not pursuing any objective in their appointments other than the best interests of the enterprise and the quality of its operation – they are not political appointees. All members of the board should have a fiduciary duty to the new entity that is unencumbered by any employment or other connection with the stakeholder representative that appointed them. Most importantly, the new entity should not fall victim to inattention from its overseers, as has so frequently happened with air traffic control operations under government stewardship.

Assets

The entity must completely control its assets, most likely through a purchase, so that it is free from interference (except for safety oversight) as it makes decisions to eliminate obsolete assets and increase efficiency and performance through facility consolidation. The transaction would benefit from a provision that allows the new entity, within a short number of years, to return to the Federal government assets for which it has no practical use or with respect to which it discovers significant (such as environmental) remediation needs.

The assets acquired by the new entity should include all assets currently deployed by the FAA's Air Traffic Organization and the NextGen Organization, but also shared assets on which these organizations currently depend, and a part of the Aeronautical Center and most, if not all, of the Technology Center. All existing contracts appurtenant to the Air Traffic Organization and the NextGen Organization would become assets and liabilities of the new entity.

The price for these assets must be determined judgmentally. Because these assets are unique, there are no clear benchmarks such as book value, fair market value or replacement cost that can be used. A significant factor in determining the price will be a decision with respect to how the new entity should use its capital: for the purchase of old assets or the deployment of new assets. The entity will have access to substantial, well-priced capital because of its market position and participation in the capital markets through the issuance of both revenue- and asset-backed securities. The new entity will receive no credit support – explicit or implied – from the Federal government.

Employees

It is essential that the current employees who conduct the operations that move to the new entity not be subjected to risk and uncertainty. Their pay and benefits as well as their pension expectations should be maintained and satisfied with the new entity. The new entity will need to consider more modern benefit structures going forward, but only for future employees who will then be able to make their employment decisions based on the benefits the entity is offering at the time. The collaborative environment and processes between management and labor that have been developed in the Air Traffic Organization over the last five years must be preserved.

Revenue

Operations of the new entity should be funded principally through fees paid by users of the system, based on formulas that are transparently determined and easily calculated, which cover the operating and the financed capital costs of the new entity. In order to avoid the risk of future "double taxation," all existing aviation taxes should sunset at the time the user fees commence to be imposed. The new entity should not rely upon the Federal government for any

financial support, except for potential fees for services rendered by the new entity. Military flights operated by the Federal government will be exempt from user fees.

Regulation

Air traffic control operations will continue to receive safety oversight from the FAA. Contemporaneously with the creation of the new entity, significant steps should be mandated to move the FAA more completely to a performance-based mode of oversight. Users would be able to appeal to the Federal government increases in rates and charges that they consider unreasonable in light of the needs and services of the new entity.

Transition

Although air traffic control constitutes a large civilian government operation, as private-sector entities go, it is not massive: each of the four major airlines in the US is at least three times the size of the air traffic control operation. Certainly, privately operating a safety-intensive enterprise of the scale of the new entity will not constitute the treading of any new ground. At the same time, because of the criticality of the new entity's safety mission, the transition from government to private control should be done over sufficient time to attend to details, discover unforeseen challenges and to permit the industry to adjust to new methods. Benchmarking against other transactions of comparable scale and complexity, a two-year transition consisting of two or more distinct phases properly balances the need for prompt change with the avoidance of organizational risk.

Conclusion

As with all transactions, the creation of a private, not-for-profit entity to conduct the critical operation of air traffic control will overwhelmingly benefit from abundant

communication, collaboration and transparency. These hearings are of tremendous value in setting an example for how transformation should occur.

Options for FAA Air Traffic Control Reform

Testimony of Dorothy Robyn

House Committee on Transportation & Infrastructure

Subcommittee on Aviation

March 24, 2015

Chairman LoBiondo, Ranking Member Larsen, and members of the Subcommittee. I appreciate the opportunity to testify this morning on options for Federal Aviation Administration (FAA) air traffic control reform.

I bring two overlapping perspectives to this debate. One is historical: as a member of President Clinton's White House economic team, I was involved in the Clinton Administration's long-running effort to reform the U.S. air traffic control system—an effort that advanced the ball but failed to score a touchdown. I also bring my perspective as an economist who continued to speak out on the issue after leaving the White House in 2001. Among other things, I wrote a report for the Brookings Institution's Hamilton Project in 2008 which called for structural reform of the governance and financing of air traffic control. Following a five-year stint in the Obama Administration at the Department of Defense and GSA,[1] I am again participating in the debate over air traffic control reform, as an independent member of the Eno Transportation Center's NextGen Working Group.

My testimony draws in part on the Hamilton Project report, a link to which appears below.[2]

Symptoms of the Problem

The United States has the busiest and safest airspace of any country. The FAA's Air Traffic Organization (ATO), made up of 15,000 highly skilled controllers and thousands of talented and dedicated engineers, technicians and analysts, orchestrates the safe transit of more than 30,000 commercial flights a day—an extraordinary feat. GAO's recent survey of stakeholders found that they have a high level of confidence in the ATO's day-to-day operation of the system.[3]

However, the system has struggled to adopt the advanced computing and telecommunications technologies that have enabled the dramatic improvements in productivity seen in so many other sectors. Controllers still use 1950s-era, ground-based radar to route planes, and pilots and controllers communicate using analog, voice-only radios (i.e., no email). Well into the 1990s, the FAA was the largest U.S. buyer of vacuum tubes for use in its 40-year old radios. (I brought with me the vacuum tube that Vice President Gore used to hold up when he spoke about the need

[1] I served as the Deputy Under Secretary of Defense for Installations & Environment (2009-2012) and Commissioner of GSA's Public Buildings Service (2012-2014).
[2] Dorothy Robyn, "Air Support: Creating a Safer and More Reliable Air Traffic Control System," Hamilton Project, Brookings Institution (July 2008); available at: http://www.brookings.edu/research/papers/2008/07/air-traffic-robyn.
[3] GAO, "Air Traffic Control System: Selected Stakeholders' Perspective on Operations, Modernization, and Structure," GAO-14-770 (September 2014); available at: http://gao.gov/products/GAO-14-770.

to "reinvent" air traffic control; the FAA had to purchase the tubes overseas because they were no longer manufactured in the United States.). In many facilities, controllers still keep track of aircraft using paper strips.

The FAA's reliance on antiquated technology is the clearest symptom of an underlying problem with the way the air traffic control system is run. When the FAA undertook air traffic control modernization in 1981, it estimated that the work would cost $12 billion and take a decade to complete. Thirty-four years and $56 billion later, the FAA still has not been able to achieve large-scale modernization; most of that money has gone to replace and upgrade existing equipment, yielding only incremental improvements in capacity and safety. Although the FAA is more than a decade into to its effort to move to a next-generation, satellite-based system, NextGen is facing the same systemic problems that have plagued past modernization efforts.

A second symptom of the problem is flight delays, themselves due in part to the FAA's reliance on antiquated technology. Although flight delays are a chronic nuisance, when a strong economy generates high levels of traffic, delays can become so severe as to create a national crisis. (Support for air traffic control reform typically peaks during these periods.) According to a study done for the ATO by a consortium of universities, in 2007, the direct cost of U.S. flight delays was $32.9 billion, including $8.3 billion in increased airline expenses (e.g., crew, fuel and maintenance); $16.7 billion in passenger time lost due to schedule buffer, delayed flights, flight cancellations and missed connections; and $3.9 billion in lost demand (i.e., the welfare loss incurred by passengers who avoided air travel as a result of delays).[4]

A third symptom is the rising unit cost of service provided by the air traffic control system. From 1984 to 1997, this cost (measured by FAA/ATO operating expenses divided by the number of instrument operations, controlling for inflation) was flat. Although this record compared poorly with the trend in most high-tech activities, which benefited from Moore's Law, it was better than what followed. In 2008, I reported that unit costs had gone up by 45 percent from 1997 to 2007, largely because of a generous collective bargaining agreement that the FAA signed with air traffic controllers in 1998. Although the agreement envisioned that productivity gains would offset the wage increase, those gains had not materialized. In the last seven years, the unit cost of service has gone up by another 18 percent, for a 71 percent increase since 1997, due largely to a decline in operations with no offsetting decline in operating expenses.

The Problem

Antiquated technology, flight delays and rising unit costs are *symptoms*, but they are not the *problem*. The problem is the structural mismatch between the nature of air traffic control and the way the federal government manages it. Simply stated, air traffic control is a 24/7, capital-intensive, high-tech service business trapped in a regulatory agency that is constrained by federal procurement and budget rules, burdened by a flawed financing system, and micro-managed by Congress and the Office of Management and Budget. To be sure, air traffic control must be

[4] Michael Ball, et al., "Total Delay Impact Study: A Comprehensive Assessment of the Costs and Impacts of Flight Delay in the United States" (October 2010); available at: http://www.isr.umd.edu/NEXTOR/pubs/TDI_Report_Final_10_18_10_V3.pdf.

regulated for safety. Moreover, it is a natural monopoly and must be managed as such. But air traffic control is not inherently governmental, and in my view, the current approaches to governance and financing of the system, both of which embody a governmental model, are directly to blame for the symptoms we observe.

Governance

Twenty years after the Clinton Administration proposed to "corporatize" the air traffic control system, it is no longer controversial, as it was then, to suggest that air traffic control is not inherently governmental. That change in thinking is due largely to empirical evidence: several dozen countries now provide air traffic control services through a self-supporting, autonomous agency outside of the traditional government bureaucracy (in 1995, only a few countries did so). Nevertheless, it is worth spelling out the "theory" behind the evidence.

The basic test for whether a governmental activity can be provided by a private entity (whether through outsourcing or some form of privatization) is this: can you write a contract? That is, can the function be reduced to an operational description such that a contractor can perform it and the performance of the contractor can be evaluated?

Air traffic control meets that test. First, the provision of air traffic control is purely operational: it involves the delivery of a complex but routine service through the equivalent of a production line. Although that "production line" is highly sophisticated and critical to aviation safety, it does not require policy judgments or tradeoffs that only a governmental entity cab make. Second, because air traffic control is purely operational, the mission of the provider is clear and its performance is measurable. A third characteristic of air traffic control facilitates its provision as a commercial service funded by user fees (prices): the direct users of the system are identifiable, and most of the benefits and costs of the services accrue to those already paying the costs via user taxes.

Two aspects of air traffic control may explain why some have mistakenly seen it as inherently governmental. First, air traffic control is a natural monopoly, which means that, given the high fixed costs and large economies of scale associated with the current technology, it is less expensive to have a single service provider. Normally, when the federal government privatizes an activity, it does so to take advantage of competition. But while the market for air traffic control does not (currently) allow for competition, that does not preclude its private provision. The telecommunications system was a natural monopoly for many years, and yet the federal government did not operate the system (although it did regulate it).

Second, historically, the aviation safety regulator was also the air traffic control provider, which led many people to see regulation and operation as inextricably linked. Stated differently, there was a perception that separating the two functions would impose prohibitively high coordination costs. But we now know that is not the case from the experience in dozens of countries that have moved air traffic control operation out of the regulatory agency. In fact, as discussed below, experts now call for the separation of the regulator from the operator in order to *ensure* system safety.

"It's the Incentives, Stupid"

As a traditional government agency constrained by federal rules and micromanaged by Congress and OMB, the FAA is poorly suited to run what amounts to a capital-intensive, high-tech service business.[5] Much has been written about the shortcomings of the FAA's management of air traffic control. In my view, the overarching problem is that FAA management faces the wrong incentives: whereas ordinary businesses must respond to customers to survive, the FAA faces more a more complex set of carrots and sticks. To paraphrase James Carville, "It's the incentives, stupid."

Just as a green plant turns toward the sun, organizations pay close attention to the sources of funding that sustain them. The FAA is no exception. Because it relies on appropriated funds, the FAA has historically viewed Congress rather than aircraft operators as its customer. One former senior FAA official observed that when funding was tight, the agency reduced services in the field and expanded headquarters staff—just the opposite of what an airline or other service business would do; such a response is "rational" if its customer is Congress, however.

Moreover, because Congress holds the purse, FAA decisions regarding facilities, investment, and staffing and pay are all subject to interference. Members opposed to the loss of jobs in their district have long blocked large-scale consolidation of the FAA's aging and inefficient facilities—a much-needed step that would save the system hundreds of millions of dollars a year. Appropriators routinely give the agency less money than it requests for some programs and more for others, based in part on lobbying by private contractors. And "logrolling" can necessitate giving a rural state the same technology as, say, New York, despite major differences in demand.

Congressional micromanagement of the FAA is doubly harmful because it crowds out much-needed input from airlines and other aircraft operators—the air traffic control system's real customers. According to an expert panel convened by the National Academy of Sciences to assist the GAO in understanding the impediments to FAA modernization, because the ATO is beholden to Congress, "the users lack incentives to monitor the ATO's spending and may not insist on cost control, while the ATO lacks incentives to consult the users and may invest in technologies that the users do not want."[6]

Federal personnel, procurement and budget rules create their own flawed incentives. (I discuss the budget rules under financing.) For example, the FAA relies heavily on outside contractors for research and development, which is appropriate. However, as a result of federal salary caps and other constraints, the FAA has lost the in-house engineering expertise to oversee these outside contractors, even the best of whom have somewhat different objectives than the FAA.

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[5] David Osborne, whose 1992 book popularized the phrase "reinventing government," used an automotive metaphor to sum up this fundamental mismatch. According to Osborne, "Air traffic control is a massive, complex, technology-intensive service business operating within a conventional U.S. government bureaucracy. It is a bit like putting a Ferrari engine into a dump truck body and still expecting it to win races." David Osborne and Peter Plastrik, *The Reinventor's Fieldbook: Tools for Transforming Your Government*, Jossey Bass (2000).

[6] GAO, "National Airspace System: Experts' Views on Improving the U.S. Air Traffic Control Modernization Program," GAO-05-333SP (April 2005); available at: http://www.gao.gov/new.items/d05333sp.pdf.

The FAA's cultural resistance to change has been much discussed. I wrote in 2008 that NATCA had opposed new technologies that controllers feared would threaten their jobs, and that many FAA managers, insulated from the economic pressures that their counterparts in industry face, had resisted the shift to a performance-based ATO. However, in recent conversations with controllers and ATO managers alike, I have been struck both by their recognition that air traffic control truly is essentially a (safety-obsessed) business and by their frustration with the constraints that keep them from operating it like a business.

Potential Conflict of Interest

The governance of air traffic control is flawed in another way: the FAA's dual mission—as both operator and regulator of the air traffic control system—poses a potential conflict of interest. In every other area of aviation (e.g., the manufacture of aircraft and the operation of airlines), the FAA has no operational role, acting instead as an independent regulator. Independent regulation is no less desirable in the case of air traffic control, where the fundamental issue of how much space to maintain between planes involves a tradeoff between safety and airspace capacity. This change is becoming even more critical as the air traffic control system shifts to satellite-based technology, which allows for closer spacing of aircraft.

The notion that operation and regulation should be separate is fundamental. The International Civil Aviation Organization, whose principles are the basis for aviation safety regulation throughout the world, calls for the air traffic control safety regulator to be separate from the operation it regulates. Dozens of countries have elected to follow ICAO's guidance. In fact, for some countries, adherence to this principle was the major motivation for moving air traffic control outside of the traditional government bureaucracy. Although the U.S. aviation system has an excellent safety record, the United States is one of the only advanced industrial countries in which air traffic control is still both operated and regulated by the same agency.

Financing

The federal government's approach to financing air traffic control is no less problematic than its approach to governance. First, the use of excise taxes creates incentives that are flawed and even perverse. Second, because the federal government does not have a capital budget, capital investments must be funded out of annual appropriations, and that creates additional distortions.

Aviation Excise Taxes Create Perverse Incentives

The air traffic control system is supported largely by federal excise taxes on passenger tickets, cargo and fuel. Ideally, the funding mechanism for such a critical piece of infrastructure should achieve three goals.[7] First, it should encourage efficient behavior on the part of users as well as the service provider (economic efficiency). Second, it should recover most or all of the revenue needed to support the continued operation and expansion of the system (revenue adequacy). Finally, it should be equitable. The existing funding mechanism fails on all three counts.

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[7] Congressional Budget Office, *Paying for Highways, Airways, and Waterways: How Can Users be Charged?* (August 1992).

The inequity of the present tax-based funding system has been well documented, as have its failings with respect to revenue adequacy (see my Brookings report for a summary). Let me focus here on an issue that has received less attention—namely, the way excise-tax funding undermines the goal of economic efficiency by creating flawed and even perverse incentives.

The current system of tax funding encourages commercial airlines to overuse scarce air traffic control capacity in part 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 them. This is a critical point: broadly speaking, the cost to the air traffic control system of handling an individual flight is independent of the size of the aircraft operating the flight; this is so because, for a controller looking at a computer screen, "a blip is a blip."

Because they impose a disproportionate burden on large aircraft, passenger taxes have the perverse effect of encouraging airlines to use smaller planes. Airport runway landing fees, which are based on aircraft weight, serve to reinforce that effect.[8] These implicit subsidies to small aircraft are one reason that the use of regional jets expanded so rapidly, and with it delays, during the heated economy of 2006-2008. Although that trend has reversed for a number of reasons, the perverse incentive remains, encouraging airlines to offer more frequent service on smaller planes without having to pay the true costs.

Turbine-powered business aircraft, which pay a fuel tax, contribute even less relative to the burden they impose. In addition to being inequitable, this creates another market-distorting subsidy to small aircraft. And while business jets tend typically avoid the most crowded large-hub airports, the expansion of traffic to neighboring reliever airports has added to congestion in the terminal airspace.

Tax funding creates the wrong incentives for the FAA as well because, under the present system, the connection between the volume and mix of air traffic control services provided and the revenues received by the air traffic control system is rather tenuous. Unlike a commercial provider that charges its customers for what they consume, the FAA cannot compare its costs and revenues to learn how customers value its various services, where it needs to reduce costs, which services to develop or improve, or where to invest new capital.

Missed opportunities for the FAA to add value abound. For example, there may well be significant latent demand by users of the system for location-specific improvements in service quality, quantity and/or reliability. The widely-used hub-and-spoke system makes individual carriers highly dependent on the smooth and reliable operation of hub airports. Might they be willing to pay a premium to assure a higher degree of reliability at these critical network

[8] See Michael E. Levine, "Landing Fees and the Airport Congestion Problem," *Journal of Law and Economics*, Vol. 12 (April 1969).

locations? Under the current system the FAA has no incentive to provide location-specific value-added services because it cannot charge users for them.

Federal Government's Lack of a Capital Budget is Debilitating

The federal budget process is another source of the financing problem. Unlike states and corporations, the federal government does not have a capital budget; federal investment in capital must be fully funded up-front, out of annual appropriations. Stated differently, the federal budget makes no distinction between spending on consumption and investment. This is a major challenge when it comes to maintaining and upgrading a capital-intensive system such as air traffic control.

Businesses are able to fund a capital asset by borrowing against the expected stream of revenue it will produce. In this way, capital investment reflects the level of demand for a good or service. By contrast, federal investment is based on what the annual budget will allow. In a constrained budget environment, federal investment in infrastructure and R&D arguably gets short-changed.

In addition to the sheer level of funding, the timing of funding is a problem. Federal agencies must budget for programs far in advance, which means the FAA has to request funding for a new system well before the application has been proven in some cases. This contributes to the cost growth and schedule slippage that FAA programs experience once they get under way. Moreover, with annual funding, it takes years to carry out major acquisitions. This drives up the cost of an acquisition. It also means that the technology may be out of date by the time it is deployed. Budget shortfalls and delays in the appropriations process further slow capital projects and drive up their costs.

The budget process has other unintended consequences. As with other government agencies dealing with large infrastructure projects, FAA managers face strong pressures to overestimate the benefits, underestimate the costs and downplay the risks in order to sell the projects to decision makers in the first place.[9] The lack of in-house engineering expertise discussed above contributes to the FAA's chronic miscalculation of costs and risks.

The lack of a capital budget is a debilitating problem for a number of federal agencies. Having run GSA's Public Buildings Service, which acquires and manages large capital assets, I experienced firsthand the challenges of the federal government's up-front funding approach to capital investment.[10] Although a debate is brewing about whether (and how) to address that problem, any resolution will come too late to help the air traffic control system.

Clinton Administration and USATS

To allow the U.S. air traffic control system to operate more like a business, the Clinton Administration proposed to transfer it to a wholly owned government corporation governed by a

[9] Statement of Mark M. Hansen, Professor of Civil and Environmental Engineering, University of California, Berkeley, before the Senate Committee on Finance (July 12, 2007).

[10] Dorothy Robyn, "Reforming Federal Property Procurement: The Case for Sensible Scoring," Brookings Institution (April 29, 2014); available at: http://www.brookings.edu/blogs/fixgov/posts/2014/04/24-federal-property-procurement-sensible-scoring-robyn.

board of directors and a CEO. The U.S. Air Traffic Services Corporation (USATS) was designed to be self-supporting, based on cost-based charges on commercial airlines (general aviation would continue to pay a fuel tax). Based on the revenue stream from those charges, USATS would be able to borrow either from Treasury or (with approval of the Secretaries of Transportation and Treasury) from the private capital markets up to a cap of $15 billion.[11]

The USATS proposal was dead on arrival in Congress: some Members felt it went too far, others not far enough. The user fee proposal was particularly controversial, in part because it was contained in an Administration budget that eliminated the $2 billion contribution that the general fund made to FAA operations at the time. In addition, the shift from an ad valorem ticket tax to cost-based user fees had potential adverse implications for low-cost carriers.

In 2000, amid growing concerns about flight delays, Congress authorized the FAA to restructure air traffic control internally as a "performance-based organization" run by a chief operating officer (COO). In December 2000, President Clinton issued an executive order directing the establishment of the Air Traffic Organization (ATO) and announced the five members of an Air Traffic Services Subcommittee to oversee its management.[12] In 2003, the Bush Administration named a highly respected airline executive to the COO position, and it formally stood up the ATO in early 2004.

Under two Administrations and a series of able COOs, the ATO has made visible progress toward becoming more customer-oriented and business-like. However, severe constraints remain. And although it created a separate regulatory office to provide safety oversight of the ATO, the FAA still polices itself.

NextGen

In 2008, I wrote that the federal government's approach to NextGen raised real concerns. Its focus on technological transformation and a tripling of capacity was highly ambitious, given the FAA's track record, and its success depended on a complex three-part harmony involving FAA deployment of new technology, airline investment in advanced avionics (equipage), and FAA adoption of revised operating procedures to exploit the new technology. I also wrote that NextGen's top-down, technology-driven planning process lacked the kind of bottom-up feedback

[11] The seed for the USATS proposal was a recommendation contained in an August 1993 report by a blue-ribbon commission, chaired by former Governor of Virginia Gerald Baliles, on ways to address the poor health of the U.S. airline industry. (National Commission to Ensure a Strong Competitive Airline Industry, "Change, Challenge and Competition: A Report to the President and Congress" (August 1993).) President Clinton had announced the Commission in February 1993, at a meeting with airline and aerospace CEOs in Everett, Washington, on his first trip outside of Washington, DC. As President Clinton said later, "we had to turn the airline industry around if we wanted to turn the American economy around." The Vice President made the recommendation part of his government-reinvention agenda. (Vice President Gore, "Report of the National Performance Review—Creating a Government That Works Better & Costs Less" (September 1993).) The detailed USATS proposal came out of a six-month interagency process led by then-Secretary of Transportation Federico Pena. (Report of the Executive Oversight Committee to the Secretary of Transportation, "Air Traffic Control Corporation Study" (May 1994).)

[12] The Air Traffic Services Subcommittee was created to serve as a board of directors for the ATO. The five original members included former U.S. Senator Nancy Kassebaum Baker, who had earlier chaired the Senate Aviation Committee; John Snow, the CEO and Chairman of CSX Corporation (and later Secretary of the Treasury); and Leon Lynch, an international vice president of the United Steel Workers. Snow served as the group's first chair.

from users that only market signals provide. I concluded that "the federal government's overly ambitious, technocentric, one-size-fits-all approach to NextGen seems to embody much of what is wrong with the current air traffic control system. Unless there is some fundamental reform of the governance and financing problems ... it seems likely that NextGen will go down the same troubled path as modernization."

Although I am far from an expert on NextGen, my reading of recent reports by GAO, the Inspector General and others, and my conversations with stakeholders, suggests that the concerns I raised in 2008 were justified. NextGen addresses the symptom of antiquated technology, but it does not address the underlying problem. Until we address the underlying problem, I believe that NextGen's path will remain troubled.

What is Needed

Two major changes are needed to address the structural problems I have described. First, Congress should move the ATO out of the FAA and preferably out of the federal government altogether, with the remaining FAA providing independent safety oversight.[13] Second, Congress should replace excise taxes on passengers, cargo and fuel with cost-based charges on commercial and business aircraft operators.

Options for Governance Reform

With respect to governance, while the goal is to allow the air traffic control system to operate like a business, outside of the traditional government bureaucracy, the constraint is that it remains a natural monopoly. In my view, there are three basic options for giving such a system the necessary flexibility while ensuring that it cannot abuse its monopoly power. One is a government corporation, such as Airways New Zealand or Germany's DFS (Deutsche Flugsicherung). A second option is a private, non-profit corporation governed by a stakeholder board. Nav Canada, established in 1996, is the only air traffic control operator I am aware of that employs this model, which is similar to the "user-owned cooperative" seen in other sectors (e.g., utilities). A third option is a for-profit corporation that is subject to rate-of-return regulation. The United Kingdom's NATS is an example of this model.

My informal evaluation of these three models is based on two criteria. First, does the governance structure align the incentives of the operator with the needs of the users, so that the service is provided both efficiently and at an appropriate price? Second, does the structure limit opportunities for external interference? (All three models ensure that there is appropriate safety oversight by an independent regulator.)

User-Owned Cooperative: I have a strong preference for the user-owned cooperative model, largely because I think it achieves a better alignment of economic incentives. Because the users themselves run the air traffic control system, they have an incentive to keep costs low and to

[13] In my 2008 Brookings report, I proposed that the ATO be moved out of the FAA and made a separate modal administration within the Department of Transportation. I was explicit in saying that it would be preferable to move the air traffic control system out of the traditional government bureaucracy altogether. However, I concluded that such a step was not politically feasible at the time.

invest in capital at the optimal level. Moreover, because the organization is self-regulating (with respect to charges) by virtue of its basic design, there is no requirement for outside oversight by an economic regulator—an intervention that could create opportunities for external interference and/or to lead to unintended consequences from the regulation itself. Nav Canada's 20-year track record is superb. I believe that performance is largely a result of the elegant alignment of incentives that the organization achieves through its basic governance structure. In addition, Nav Canada appears to operate free of external interference, and the fact that it is outside of government no doubt contributes to that autonomy.

For-Profit Corporation: The other two models have potential drawbacks in my view. The NATS model requires an outside regulator to ensure that the rates charged by the air traffic control provider are appropriate. We know from decades of experience with rate-of-return utility regulation that the regulated entity has an incentive to over-invest in capital so as to expand its rate base. Although it may be possible to devise a regulatory scheme to limit that problem, generally speaking, economic regulation tends to create unintended consequences. For that reason, I think it is preferable to avoid the need for economic regulation of a business undertaking if at all possible.

Government Corporation: With a non-profit government corporation, by comparison, there is typically no explicit rate regulation: in theory, the corporation behaves in the public interest because it is not operating to make a profit and because the government retains some (non-safety) involvement or oversight. That governmental involvement can take different forms, including the authority to appoint the members of the corporate board, participation on the board, and financial oversight. To be sure, this approach works well in some countries, where government corporations are allowed to function with the necessary autonomy. However, I worry that, in the U.S. context, a government corporation would not be as politically insulated as it is elsewhere. For evidence of that, one need look no further than the U.S. Postal Service, whose efforts to close facilities have been continually thwarted.

I recognize that the challenge for this committee is to craft a practical solution, and for that reason, I am hesitant to say that I believe a user-owned cooperative is the only acceptable approach. But a practical solution must get the basics right, which in this case means ensuring that the governance structure incentivizes efficient, cost-effective service provision and provides insulation from external interference. I worry that it would be difficult if not impossible to accomplish that with a government corporation.

Financing Reform

In addition to making the air traffic control system an autonomous entity, Congress should replace tax financing of the system with cost-based prices on commercial and business aircraft operators. Under my vision of a pricing system, commercial operators and turbine-powered aircraft would pay a per-flight price roughly equal to the long-run marginal cost they impose on the system. To minimize transaction costs and reflect their lower demand on the system, operators of piston-engine aircraft, many of which operate out of separate and uncongested facilities, would pay a flat annual charge linked to aircraft size.

Adoption of a well-designed pricing system could have far-reaching beneficial effects on the air traffic control system over time. First, prices will provide valuable market signals, enhancing economic efficiency (pricing will also improve equity and revenue adequacy). If aircraft operators have to pay their way, they will have an incentive to use scarce capacity more sparingly, thereby reducing delays. Prices should reflect not just monetary costs, but also (in congested airspace) the delay costs that each user imposes on other users. Second, the air traffic control operator will get the kind of feedback that price signals routinely provide, encouraging more efficient production of services. For example, with real prices, the ATO could offer, and customers could purchase, the services that best meet their needs, as opposed to the current, one-size-fits-all. Third, reliance on user charges will allow the air traffic control system to borrow on capital markets, addressing the unintended but debilitating consequences of the federal government's pay-as-you-go approach to capital investment.

Radio Spectrum

Finally, let me say a word about the FAA's most valuable "physical" asset—radio spectrum. The FAA uses spectrum for two basic purposes: radar and communications. The spectrum assigned to the FAA is extremely valuable, both because of its prime location on the radio frequency band (it is ideal for the provision of mobile broadband service) and because of its sheer quantity (next to the Department of Defense, the FAA is the federal government's largest user of radio spectrum). The FAA uses spectrum inefficiently because of the antiquated nature of its technology. Stated differently, as it moves to more sophisticated technology, the FAA should be able to meet its needs with less spectrum. This might allow for some win-win transactions, if the FAA (or a corporatized ATO) were able to leverage its spectrum assignments to help finance the adoption of advanced, more spectrum-efficient technology. At a minimum, the Committee's analysis of how to reform air traffic control should take into account both the extremely high value of the spectrum assigned to the FAA and the corresponding need to incentivize its efficient use.

NBAA

Statement by

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Before the House Transportation and Infrastructure Committee,
Subcommittee on Aviation

On

"Options for FAA Air Traffic Control Reform"
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NBAA

Introduction

Chairman LoBiondo, Ranking Member Larsen and Members of the Subcommittee, thank you for the opportunity to submit testimony as you and your colleagues undertake a very important debate over reauthorization of the Federal Aviation Administration (FAA), and the modernization of America's aviation system.

Ensuring that America continues to lead the world in all aspects of aviation is clearly in our country's best interest, and should be a national priority. I commend the members of this subcommittee for your continued commitment to our nation's aviation-transportation system. I also thank FAA Administrator Michael Huerta, and the many other stakeholders who have been involved in discussions regarding aviation system transformation.

The members of this subcommittee know that the business aviation community has long supported efforts to transform America's aviation system – that's why NBAA has been deeply involved in all of the major NextGen efforts.

Business Aviation is an Essential Industry

As those of you on this subcommittee are aware, business aviation is an important but not always well understood American industry. Knowing that, it's important to take a moment to define what business aviation is, and what its value is in America today.

Business aviation is a term defined by the FAA as the use of any general aviation aircraft – piston or turbine – for a business purpose. We are the segment involving entrepreneurs and companies – of all sizes, all across the United States – that use general aviation aircraft to meet their business objectives.

This includes an enormous diversity of operations. Fully 85% of business aviation operators are small and mid-size businesses. While some business aviation operators are household names, most are not—but they are critical to our nation's economy. Business aviation can be used for a variety of missions, including agricultural purposes, and entities also rely on it for public services, like law enforcement, fire and rescue, and other government services.

That said, in order to get past definitions and generalities, here are two examples to illustrate what business aviation looks like. In Washington State, a company called Northwest Boring, founded in 1951, uses business aviation to reach clients not just across the state, but also in Oregon and Montana. The small, family-owned company employs fewer than 25 people. Across the country, in Lancaster, New York, the Manitoba Recycling Company uses

business aviation to reach markets that can provide scrap metal for its recycling business.

The airplanes used by the entrepreneurs and companies in business aviation are mostly those with cabins about the size of an SUV, seating about six people and flying on average less than 1,000 miles per leg. Again, these are mostly small and mid-sized businesses, like the ones I've just mentioned.

As the members of this subcommittee know, businesses like these, and the airplanes they use, are located in every Congressional District in the United States. The states and Congressional Districts that some people sometimes refer to as "fly-over" places are those that a large number of NBAA's Member Companies call "home."

These small, often rural communities are fundamental to the future of the U.S. They are also fundamental to the future of business aviation. If you drive up to a community airport, in nearly any American town, you can easily see that the high-performance pistons, turboprops and entry-level jets that are based there are a key source of activity at those airports.

That activity is not only essential to job creation and local investment in surrounding communities; it's a major contributor to the nation's economy and transportation system. That's not just an empty statement: A recent study showed that general aviation, including business aviation, supports more than a million jobs in the U.S., and generates more than $200 million in economic activity each year.

FAA Reauthorization: Overview And Guiding Principles

As we all know, the United States has the largest, safest, most complex, most diverse and most efficient air traffic control system in the world. Our member companies consistently tell us that flying in the U.S. is better, faster and easier than flying in any other country. But, being the best today does not mean we will necessarily be the best in the future.

That is why NBAA is fully committed to the work being done to transition to a Next Generation, or "NextGen" system. The goals of NextGen are to increase capacity, enhance safety and reduce our environmental footprint. Achieving these goals is the way to ensure that America's aviation system remains the world's leader, not the follower – whether that be five years, 10 years, or 30 years from now.

As I said before, the U.S. today has the best air transportation system in the world, but in order for us to be able to make that statement a decade from now, changes will be necessary. How we accomplish those changes is at the heart of the reauthorization debate. NBAA and its members are committed to the changes needed to make NextGen a reality, but we will not support

changes that fail to preserve business aviation's access to airspace and airports in a safe, predictable and affordable manner.

The debate over how to get from where we are to where we want to go is one NBAA believes should be undertaken in the context of data, facts and guiding principals. With that in mind, these are our guiding principles as we look to the debate over FAA reauthorization:

- **Make NextGen a reality**. NextGen is our plan to retain our world-leadership position in air traffic management; the question is, how do we make it a reality? That question is central to the reauthorization process. Unfortunately, the challenges are significant – NextGen is not simply a matter of "flipping a switch," as some would have you believe. Make no mistake about it: no one is content with the clarity, pace or cost of the transition to NextGen to date – we need to do better.

- **Keep Congressional control over taxes, fees and charges.** The power to tax is the power to destroy, and for the people who have to pay them, mandatory taxes, fees and charges are all the same. Proposals are being put forward that would effectively take authority to fund our aviation system and put it in the hands of structures consisting of non-elected officials. A dialogue about finding a new governance structure is appropriate, but the composition and scope of its authority matters. Congress must retain authority over taxes, fees and charges. This is not a responsibility that can be transferred, delegated or outsourced.

- **No user fees.** As the members of this subcommittee know, the general aviation community, including business aviation, pays a fuel tax to fund its use of the aviation system. This mechanism is an unmatched proxy for system use, because the more often you fly, and the longer distances you fly, the larger your aircraft, and the more fuel you burn, the more taxes you pay. The fuel tax is also highly efficient: paying at the pump means full compliance, without a collection bureaucracy – a "SKY-R-S" – needed to administer fees or charges. The fuel tax also covers all of the air traffic control services, including those for flight safety, that are needed in a typical flight. We don't want to promote a disincentive for people to use safety services. Simply put, anything that could be done through a user fee, the fuel tax can do better. For all these reasons and more, Congress has repeatedly written to the current and previous Administrations in opposition to per-flight user fees, and should continue to oppose them.

- **Ensure predictable, affordable access to airspace and airports.** The inherent value of business aviation is the ability of companies to fly where they need to, when they need to. Things that impede our access to airports and airspace have the potential to do great harm. Business aviation must have continued access to our nation's airports and airspace. As we have learned in Australia and other parts of the world, this is not something that can be taken for granted.

- **Protect the privacy of those in flight**. The Automatic Dependent Surveillance–Broadcast (ADS-B) technology, a cornerstone of the FAA's satellite-based NextGen system, does not currently include needed protections for operators' privacy and security. While NBAA has long promoted the development of ADS-B, we have consistently pointed out that, in transitioning to satellite-based navigation and surveillance, we must ensure that it makes accommodations for privacy.

  When it comes to ADS-B, we continue to believe that people should not have to surrender their privacy and security just because they travel on a general aviation aircraft. This committee was integral in protecting these rights previously, and we respectfully request that these privacy protections be addressed in the pending 2015 FAA Reauthorization bill as well.

- **Protect our airport system.** Our national system of airports was created to provide communities with access to a safe and adequate public system. We must ensure that our system of airports meets national objectives, including economic growth, defense, emergency readiness, law enforcement, postal delivery and other priorities.

  Unfortunately, in certain regions of the country, attempts are being made to close important airports, even when federal investments and assistance have been provided to ensure these airports meet national economic and other priorities. We support giving the Secretary of Transportation sufficient discretion to allow an airport to remain open for purposes of protecting or advancing civil aviation interests of the United States, if standard conditions become unenforceable. Simply put, we must continue supporting facilities, at the federal level, as part of a single, national aviation-transportation system.

  We strongly believe that airports should be good neighbors and should work with communities to maintain a balance between the needs of aviation, the environment and the surrounding residences. However, over the years, attempts have been made to create new restrictions and impediments for aviation users through airport curfews and other local initiatives to restrict access to airports. We must be vigilant in stopping ongoing attempts from local interests to compromise the national nature of our aviation system.

- **Improve the certification and approval process**. The approval process can be cumbersome, unnecessarily taking up time and resources. The FAA should constantly look for ways to keep or improve safety, while adopting more efficient, effective business-like processes.

- **Ensure the safe introduction and integration of new aviation technologies**. NBAA would also like to take this opportunity to commend the U.S. Department of Transportation (DOT) and FAA on their recent release of a notice of proposed rulemaking toward adopting a regulatory framework governing the commercial operation of small, unmanned aircraft systems (s-UAS) weighing less than 55 lbs.

  The FAA has taken a good first step in releasing these initial guidelines to provide a much-needed regulatory structure for these operations. We urge the Committee to work closely with the DOT, FAA and the UAS industry as they work to integrate UAS into the national airspace system in a thoughtful, deliberative process focused on ensuring the safety and security of all aviation stakeholders.

- **Ensure continuity of government aviation services**. Aviation aircraft and parts cannot be produced, financed, bought or sold without the written approval of the federal government. When the FAA Registry Office was shuttered in the 2013 government shutdown, it significantly impacted much of America's general aviation industry, including thousands of businesses that use general aviation aircraft for parts delivery, customer visits, aircraft repairs, fuels sales, hanger construction and aircraft brokerage activities.

  We urge the Committee to include language in the pending FAA reauthorization legislation which would ensure that the important aviation safety and security functions of the FAA Registry Office are protected from any future government shutdowns.

Conclusion

In conclusion, Mr. Chairman, Ranking Member Larsen and members of the Subcommittee, we are grateful for the continued leadership you provide in working with the aviation community to foster a vibrant industry and a strong, world-class aviation-transportation system. NBAA and the larger business aviation community look forward to working with you and other Congressional leaders on policies that support our nation's aviation system today, and ensure that it retains its world-leadership position in the future.

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Statement For The Record
"Options for FAA Air Traffic Control Reform"
Thomas L. Hendricks
President and CEO
The National Air Transportation Association
March 24, 2015

Chairman LoBiondo, Ranking Member Larsen, members of the Aviation Subcommittee, thank you for the opportunity to submit comments for the record on the Subcommittee's review of air traffic control reform. My name is Thomas L. Hendricks and I serve as President and CEO of the National Air Transportation Association (NATA).

NATA represents the interests of the general aviation business community before the Congress as well as federal, state and local government agencies. Representing nearly 2,300 aviation businesses, NATA's member companies provide a broad range of services to general aviation, the airlines and the military. Our members range in size from large companies with international presence to smaller, single-location operators that depend exclusively on general aviation for their livelihood. Smaller companies account for the majority of NATA's membership and most of our members have fewer than 40 employees and are designated as small businesses by the U.S. Small Business Administration.

We understand the major reauthorization issue the Subcommittee must address this year is whether and how we might alter the FAA's organization and funding stream. This is certainly an appropriate discussion to have in light of the recent sequesters, government shutdown and criticisms of the FAA's modernization plans. As the Subcommittee looks at this very important issue, NATA shares many of the core reauthorization principles outlined by FAA Administrator Huerta -- particularly the need to maintain our system's excellent safety record. I have had the opportunity to captain passenger aircraft all over the world and I can tell you that there is no air traffic control system in the world that compares with ours, and certainly nowhere else in the world that compares with the challenges of managing the airspace in the U.S. northeast corridor. While we should support the injection of more private sector practices into the FAA, it is important how we manage any changes to the agency in order to maintain a stable, safe and efficient system that protects access for all users of our system. We should begin by determining whether the issues identified as needing reform can be addressed within the current construct.

NATA believes the Subcommittee should build on its excellent work begun in the last reauthorization and continue to assist the agency toward a more efficient operating structure. We believe it is possible to develop and deploy cutting-edge technology within the government structure and this is already occurring at the FAA. But, like other stakeholders, we believe more remains to be done. As Administrator Huerta recently noted, the FAA must continue to foster a culture of innovation and efficiency. So if the question is whether the agency can efficiently deploy and certify cutting-edge technology, then let us provide the agency with the flexibility it needs in order to make that happen. Those kinds of authorities, and most importantly the actual use of them, would certainly deliver on Chairman Shuster's goal of transformational change.

In a discussion I had with one of the leading proponents of an alternative ATC structure, I identified another government agency that develops and deploys cutting edge technologies. The response was a horrified, "The FAA could never manage programs that way, it can't fire people!" While somewhat humorous, it begs a larger question. Will an alternative air traffic control structure really be able to operate more efficiently? Compensation is the number one driver of air traffic control costs and of the approximately 35,000 employees that would presumably move to a new air traffic control organization, are they the ones from where efficiencies will be derived? Or will it inadvertently create a situation where costs will not in fact be controlled and the passengers will once again be saddled with new fees?

One of the benefits of the current authorization/appropriations process is the agency's accountability to the taxpayer. I cannot think of any government agency that does not want its money without strings from Congress and I have never known an era where government spending was not described as "constrained." When pressed for what is not being funded in modernization, the response is that new technology is actually being deployed and that is certainly something to which I can personally attest as a user of the system. Of course, industry is then told the central issue is not modernization funding *today* but in the future while also being reminded that other aspects of the FAA suffer as a result of budgetary tradeoffs. NATA believes that before accepting this at face value one must ask -- is the agency doing everything it can to operate at its most efficient? If not, what additional authorities does it need to achieve that goal? Again, such authorities, and most importantly the actual will to use of them, would most assuredly deliver on Chairman Shuster's goal of transformational change.

Certainly, the FAA, as well as other agencies of the federal government that depend on discretionary funding, has been impacted by the budget impasses between Congress and the Administration. Experience tells us though that there is a limit to which discretionary spending can be reduced. In fact, it was the inability to bring to the House floor a transportation appropriation bill that resulted in the Ryan-Murray budget deal that has provided us with stable FAA funding for the past few fiscal years. A user fee funded agency is not necessarily exempt from sequestration. So again, should the Congress consider changes to the current funding stream or instead provide the agency with a clear, unambiguous exemption from the impacts of sequestration and governmental shutdowns?

Further, we cannot underestimate the potential impact of separating air traffic from the agency's safety functions. Administrator Huerta indicated just last week that breaking down stovepipes means close interaction between the operations and safety functions of FAA. Turning the FAA's safety organization into solely a regulatory body, including overseeing operational standards, creates potential unintended consequences that might undermine many of the efficiencies that would come from a new air traffic control structure.

Finally, we must discuss the potential risks to America's general aviation community, including the investment and jobs created by the members of NATA. Recently, eight general aviation associations, including NATA, unveiled a new industry-wide study detailing the economic contributions of general aviation to the nation. That study, conducted by PricewaterhouseCoopers, determined that general aviation supports 1.1 million total jobs and supplies $219 billion in total economic output in the United States.

Reform to the FAA's management structure and funding could put that investment and those jobs at risk. We understand that our nation's air traffic control system was not built primarily with the general aviation fleet in mind. While we do not challenge what drives the construct of the system, it is certainly the one within which general aviation must operate and requires us to be a voice at the table of any discussion and not just a sole voice, but rather one that includes the many segments of our industry.

Just as important is be the general aviation contribution to the system's operation. Clearly, general aviation is an incremental user of a system built for other users. We cannot think of a more efficient method for capturing general aviation's use of the system than the current system of excise taxes. What we fear is what transpired in Canada, the collection of new user fees while still being saddled with old taxes, in essence double taxation. And we cannot have it both ways, claiming the current discretionary funding situation drives this debate while not acknowledging how difficult it will be to pull those revenues out of the current budget construct.

If we eventually conclude the challenges to the agency cannot be addressed in its current construct, then we urge the Subcommittee to be very deliberate in what comes next. NATA cannot support any de facto "leap of faith" proposals that would put general aviation's fate in the hands of undefined management structures or leave unresolved its contribution to the system.

Chairman LoBiondo, Ranking Member Larsen, members of the Subcommittee, thank you for your consideration of our views. While maintaining the status quo risks our nation's supremacy in aviation, it is equally true that radical change to the FAA's management structure and funding poses equal risks, including to the safe and stable nature of the world's best air traffic control system. We look forward to working with the Subcommittee and assisting the agency toward a more efficient operating structure.

March 24, 2015
U.S. HOUSE OF REPRESENTATIVES
COMMITTEE ON TRANSPORTATION AND INFRASTRUCTURE
SUBCOMMITTEE ON AVIATION

HEARING ON
"OPTIONS FOR FAA AIR TRAFFIC CONTROL REFORM"

WRITTEN TESTIMONY OF
RUSSELL MCCAFFERY, DEAN OF TRANSPORTATION PROGRAMS
OF BROWARD COLLEGE

I would like to take this opportunity to thank the Full Committee on Transportation and Infrastructure Chairman Schuster, Subcommittee on Aviation Chairman LoBiondo, Full Committee on Transportation and Infrastructure Ranking Member Peter DeFazio and the Subcommittee on Aviation Ranking Member Rick Larsen for accepting this written testimony on my behalf.

It is an honor for me to provide input on matters of concern to me, including the faculty, staff and students of Broward College. I am confident that this testimony will help this Committee consider and enact sound and positive reforms within the Federal Aviation Administration (FAA) in the upcoming FAA Reauthorization Bill.

My name is Russell McCaffery, and I have the privilege of serving as the Dean of Transportation Programs for Broward College. I wanted to take this opportunity to express Broward College's dire concerns of the FAA's Collegiate Training Initiative (AT-CTI) program, which is critical to the incoming, current and students who have graduated from Broward College.

Chairmen Shuster and LoBiondo, in 2008 Broward College became a partner in the FAA's Air Traffic Collegiate Training Initiative (AT-CTI) program. Through this program, the FAA authorized the College to provide training using FAA-approved methods and state-of-the-art equipment in order to train future air traffic controllers. Graduates from these schools received preferential consideration by the Agency in hiring for air traffic controller positions. Until recently, there were 36 colleges and universities in the country with such agreements – 6 of them in the State of Florida.

In December, 2013, in response to a barrier analysis conducted by the FAA to review equal access to these high-paying jobs, the FAA implemented sweeping changes to their hiring practice. No longer would graduates of AT-CTI programs be given preferential consideration. Rather they would be required, along with all applicants, to first take a "biographical assessment" which they would need to pass before being further considered for employment.

This biographical assessment asks no questions about a person's knowledge of air traffic control or aviation, about a person's career-specific education, or about their experience. Only 10% of those who take this biographical assessment pass and therefore move to the next stage of hiring. There is no transparency regarding how the assessment is scored, and applicants are provided no feedback. Additionally, there are no security protocols in place to ensure that the person answering the biographical assessment is actually the applicant.

You may want to know that this change was made with no notice nor any coordination with the colleges and universities which have been providing high-quality and highly trained candidates to the FAA for years. Now, students who have invested tens-of-thousands of dollars in training, and schools that have invested millions of dollars in facilities, staff, and equipment, are left facing an uncertain future.

Chairmen Shuster and LoBiondo, closure of these programs would result in layoffs of faculty and staff, millions of dollars in loss to schools, the loss of an important career path for upwards of 10,000 students who would otherwise replace the imminent wave of current air traffic controllers who are retiring in the next decade and serious concerns over the safety of the millions of people who rely on the well trained air traffic controllers produced by our colleges and universities.

In an effort to better understand the FAA's position, and to explore all options, representatives from Broward College and three (3) other colleges and universities took the initiative and coordinated a meeting with the Agency on July 23, 2014.

The meeting participants included the following agents from Broward College: Gregory Haile, Vice President-Public Policy and Government Affairs, Sheila English, Air Traffic Control Faculty represented Broward College, and me. The FAA was represented by Rickie Cannon, Deputy Assistant Administrator for Human Resource Management, Mamie Mallory, Assistant Administrator for Civil Rights, Mike McCormick, Vice President – Air Traffic Organization, and staff.

While it was a hopeful sign that the FAA was willing to meet, ultimately the meeting produced no real answers or potential resolutions.

In an effort to ensure that colleges and universities that take part in the FAA's Air Traffic Collegiate Training Initiative program are not severely impacted by the FAA's current hiring practices and procedures, Broward College recommends the following reforms:

- **Preferential consideration be given to graduates of CTI programs**
- **Graduates of CTI programs be exempted from the Biographical Assessment**

In closing, I would like to thank the Committee again for accepting this written testimony on behalf of Broward College. It is an honor and privilege to submit testament that will assist Congress in shaping public policy. Please know that I am available to discuss this matter in greater detail should any Member of this Committee have additional questions or concerns.

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