

**STATEMENT OF  
CAPTAIN LEE MOAK, PRESIDENT  
AIR LINE PILOTS ASSOCIATION, INTERNATIONAL  
BEFORE THE  
COMMITTEE ON TRANSPORTATION AND INFRASTRUCTURE  
UNITED STATES HOUSE OF REPRESENTATIVES  
ON  
FAA REAUTHORIZATION: ISSUES IN MODERNIZING  
AND OPERATING IN THE NATION'S AIRSPACE  
NOVEMBER 18, 2014**

Good morning, Mr. Chairman and members of the Committee. I am Captain Lee Moak, President of the Air Line Pilots Association, International (ALPA). ALPA represents over 51,000 pilots who fly for 30 passenger and all-cargo airlines in the United States and Canada. On behalf of our members, I want to thank you for the opportunity to provide our perspectives on critical importance of modernizing our nation's airspace and aviation infrastructure and implementing NextGen. I'd like to frame my remarks today around critical aspects of modernizing the most complex airspace in the world – the U.S. National Airspace System. Those are the collaboration that is the foundation of NextGen planning and execution, the funding that is so critical to the continued success of the NextGen undertaking, and the impact that a funding mechanism should have on defining the best way to deliver the safest, most efficient air traffic control services possible.

**Collaboration**

NextGen addresses inefficiencies in the current ATC system, safely bringing critically needed capacity improvements to our system, improving the U.S. economy for years to come, while also increasing the overall level of safety of our aviation system. NextGen will generate growth for our nation's airlines and aviation companies and suppliers. This will lead to job growth at a time when our nation needs it the most. Aviation is vital to our country and air traffic control (ATC) system modernization through NextGen is essential to aviation. Aviation labor and industry have played a critical role in partnering with government in development and implementation of these much needed improvements.

On October 17, 2014, the FAA delivered a NextGen Priorities Joint Implementation Plan to Congress. This well-coordinated, fully integrated plan, known to and agreed upon by all stakeholders, along with supporting equipment standards, is critical. Safety initiatives, as well as hardware and software projects by a wide variety of aerospace companies and the FAA are the component parts of NextGen. They must be developed in a tightly coordinated manner on specific timelines to support critical interrelationships with a variety of US and international efforts. Planning for the individual initiatives is well underway, and there are a number of "roadmaps" toward the various goals. ALPA representatives participate on numerous government-industry groups, e.g., NGATS, RTCA working groups, and Aviation Rulemaking

Committees (ARCs) to provide the operational input on these roadmaps, operational concepts, and equipment standards.

Transforming the NAS has been likened to changing the tire on a truck while it is underway at 70 MPH. It can be done, but it must be well thought out and it will take new technologies to make it happen. ALPA is working with the FAA and industry stakeholders to insure that the airline pilot voice continues to be a part of all discussions regarding the transition from the current ATC system to NextGen. This transition must be made without affecting the excellent safety record of the National Airspace System. Similarly, Congress must involve all stakeholders in a plan to develop ways to pay for modernizing the National Airspace System without driving our airlines out of business.

In 1931, ALPA's founders chose the motto "Schedule with Safety." That era saw accident rates many times higher than those of today. ALPA was keenly aware of the continuing need to improve the safety of the air transportation system any way possible. Over the past 83 years, the National Airspace System (NAS) has changed greatly.

The ATC system in the United States has moved from the inexact (but best available) method of separating flights using radio position reports to precise, positive control using radar that now extends to nearly every part of the country. But now that capability is becoming dated and harder to maintain. With the introduction of the Global Positioning System (GPS) aircraft navigation is moving from a ground radar-based navigation system to a satellite-based navigation system and at the same time achieves levels of accuracy in positioning that are unprecedented. All types of aircraft, both large and small, are flying approaches in all types of weather using satellite-based navigation systems.

Communications have similarly evolved to lightweight and reliable radios, and use of data link technology that allows pilots to see a printed version of instructions, reducing confusion and improving reliability; yet more progress and changes are needed to enable us to use satellite based surveillance, communication, and navigation to its fullest potential.

All of these recent developments have two things in common. They've made air travel safer, and they were successfully accomplished when there was a collaborative relationship between the government, labor and industry. In each example, the labor and industry along with government worked together to develop system and equipment specifications, new controller and pilot procedures, training requirements, and the development and implementation of ground and airborne infrastructure. ALPA is working actively with the controllers through NATCA, system specialists in PASS, other industry partners, and the FAA to ensure that NextGen is yet another example of a successful collaboration leading to fundamental change to the NAS.

However, NextGen requires a new way of thinking about the NAS. No longer can we tolerate a NAS composed of a number of independent ATC systems and tools. NextGen must be an integrated blend of future technologies, procedures, and public policy reform, based on user feedback and designed to enhance system safety, increase throughput, and decrease emissions through the use of collaborative decision-making, more precise and efficient flight routes and separation standards.

Pilots and controllers literally sit at the intersection of new technology, operational measures, air traffic control procedures, and varying aircraft capabilities. This gives us a unique vantage point to see and experience firsthand what can happen if well-intended, but unrealistic operational procedures are instituted. Without thorough study, stakeholder involvement and appropriate oversight, complexity can increase, efficiency can decrease, and in some cases safety margins are eroded.

The future of air transportation will bring a combination of commercial air carriers, remotely piloted vehicles, general aviation, and commercial space flight. The airspace system of the future will involve a great many more operations and a wider variety of operations than we have today and will result in an increasingly complex environment. For the foreseeable future, the NAS must accommodate mixed equipage – a blend of old and new technologies, higher and lower performance. These differences must be acknowledged and accounted for in planning. NextGen must be a flexible and scalable system capable of accommodating any fleet mix that evolves. The American people deserve a system that will readily accommodate that new demand – safely and seamlessly.

The current U.S. ground based ATC infrastructure is imperfect, woefully outdated, the equipment's capabilities are limited, facilities are difficult to maintain, inefficiencies are a threat to success, and capacity is limited which limits the growth of commercial aviation. Paradoxically, both the fragility of the current system and the robustness of NextGen enhancements were very evident during the recent fire at the Chicago Air Traffic Control Center (ARTCC) on September 27, 2014. The damage from the fire led to a shutdown of the extremely busy facility. For four hours all flights into and out of O'Hare and Midway airports were cancelled. On the day of the fire, over 1750 flights into these airports were canceled, with other cancellations cascading throughout the NAS. After 3 days, other facilities were able to take control of the Chicago ARTCC airspace and provide ATC services at a reduced rate. Although it took 17 days to restore Chicago ARTCC to full operations, the speed with which recovery began and the level of traffic that was able to be maintained are testament to the resiliency of NextGen, a testament to the resolve and dedication of NATCA controllers, PASS technicians, and other FAA and industry employees to keep operations underway and restore operations as soon as possible and – the implementation of the Enroute Automation System known as ERAM, a key NextGen initiative, made it possible.

The NextGen program is huge and has uncertainties that can be problematic for airlines and others who are being asked to make large investments. The complexity of NextGen as it matures, and the critical need to ensure that the billions of dollars represented by this effort are spent wisely and efficiently, demands strong leadership and effective oversight. Strong FAA leadership is the key to the success of NextGen, the FAA, and the air traffic control organization. Success in leading the NextGen effort must include willingness to make hard decision in a timely manner, achieving balance between large, far-reaching technologically innovative programs and more modest near term efforts that yield immediate benefits, and staging implementation of key benefits in a continuous-improvement approach.

Administrator Huerta's reorganization of the FAA with an emphasis on air traffic control and NextGen has been instrumental to the NAS improvements and NextGen implementations seen in the past four years.

In 2013, the Senate recognized Administrator Huerta's managerial expertise in leading the FAA and unanimously confirmed him for an additional five years term. This allows him to continue his roadmap of improvements and implementation milestones. His management style and selections of key FAA positions have been praised by industry.

In previous testimony before this committee, ALPA pushed for the creation of a FAA senior management position to ensure effective coordination of all NextGen activity; instituting a government-industry advisory board made up of representatives of line pilots, controllers, and other stakeholders; and defining performance metrics against which modernization efforts can be measured are necessary components of an effective, efficient modernization effort and we urge support for these activities. We are pleased the FAA has taken steps toward these recommendations.

In October 2013, the FAA selected retired Air Force Major General Edward L. Bolton Jr. as the Assistant Administrator for NextGen. During General Bolton's Air Force career, he was responsible for several large operational and acquisition programs. In his final assignment with the Air Force, he was responsible for the formulation and execution of the Air Force's annual \$110 billion budget. This military background as both an engineer and program manager uniquely qualifies him to lead the FAA's NextGen program. In an October 2013 speech before the Air Traffic Control Association, he stated "NextGen is a complex systems engineering project. It has a huge number of interdependencies and tight schedules. We can't just turn it on or off. We can't speed it up or slow it down without ripples through the entire system."

In September 2010, the NextGen Advisory Committee (NAC) was established by FAA and we applaud their willingness to establish this partnership with industry to work toward achieving NextGen success. The NAC is supported by RTCA, a private non-for-profit association that is chartered as a Federal Advisory Committee to work in response to the requests from the FAA to develop comprehensive, industry-vetted, and endorsed recommendations for the Federal government on issue ranging from technical performance standards to operational concepts for air transportation. The goal of the NAC is to foster industry collaboration in an open and transparent manner. It includes a cross section of executives from the airlines, airports, general aviation, pilots, air traffic controllers, the Department of Defense, environmental interests, international interests and providers of air traffic control technology – all committed to ensuring a successful transition to NextGen. This public-private partnership venue is addressing the critical policies and priorities for NextGen implementation, working to reduce delays in implementation, define ways a positive business case can be made for all who must invest in NextGen, and to provide a venue for tracking progress and sustaining joint commitments. The NAC provides advice on policy-level issues facing the aviation community in implementing NextGen (modernizing the aviation system). The NAC is tackling issues that are broader than air traffic management, including safety, airports, the environment and global harmonization.

In addition to willingness to collaborate across the industry and with the FAA, stakeholders must look internally as well to identify ways to improve their individual efficiencies. For example, if airlines could reduce airline-caused delays to 2003 levels, nationwide flights delays would be reduced by 4%.

## **FUNDING**

What about funding this system?

This basic measure of smart business spending — return on investment — should be the same in government and industry. The challenge often lies in determining where the waste is and what will bring a good return. As the budget debate rages in Washington, everyone, from the President to the most conservative member of Congress, should agree we need to cut programs that aren't providing a decent return on our investment and support the ones that bring back more than we put in — those that grow the economy and create jobs. These are decisions that businessmen and women make in companies large and small every day. It's fundamental to long-term success.

Commercial aviation, directly and indirectly, contributes more than \$1.3 trillion to the U.S. economy each year — or 5.6 percent of gross domestic product. Aviation generates nearly 10 million jobs. The value of air travel — leisure and business — is almost inestimable. Hotels and resorts, conference centers, rental car companies, tourist attractions, and just-in-time deliveries are not viable without reliable, efficient, affordable, and *safe* air travel. In today's economy — and even more so tomorrow's — millions of jobs depend on keeping the air travel system healthy.

Today's US air transportation system is the safest in the world. The commercial aviation accident rate is on the order of 0.0007 per 100,000 departures for passenger airlines. In other words: you are about 40 times safer in an airliner than on the safest highway system in the world. But we are at a crossroads. The US ATC system is the most complex ATC system in the world and performs well above average in comparison to other industrialized countries. Throughput is consistently 97% of capacity or demand, which is higher than most countries including the EU. The US has reduced the percent of flights delayed by ATC and the US system currently has fewer ATC-related delays than in the EU. The US has the best workers in the world and employee productivity is among the highest in the world.

However, our ATC system is getting older and while NextGen improvements are being implemented, there are many systems on our aircraft that we as pilots are unable to use to their fullest capabilities. As a result we are not as efficient as we could be and not taking full advantage of the safety potential that these systems bring. Delays in implementing new procedures and technology as well as setbacks with NextGen are impacting pilots and the customers we serve. Our colleagues in Europe have also recognized these issues and have begun localized implementation of many NextGen concepts that are still being discussed, developed, and implemented in the US. While there is collaboration between the U.S. and Europe, we risk falling behind if we do not maintain focus.

Just like the development of the transcontinental railroad in the 19<sup>th</sup> century or the interstate highway system during the 20<sup>th</sup> century, NextGen is a major step forward for the 21<sup>st</sup> century. ALPA believes that the success of NextGen requires a national aviation policy and the national resolve to support Congressional efforts to provide a long-term sustained funding stream for research, development, and implementation of NextGen components. While it may appear costly, it represents a sound investment in our future as a nation and our leadership in the

transportation world. If we expect to maintain the safety and efficiency we have come to expect, we are left with no alternative.

There is little debate over modernizing to sustain the growth in aviation and the concurrent demands on capacity. The problem is how to pay for it and who pays for it. In 1997, while a member of Congress, former Secretary of Transportation Norm Mineta chaired the National Civil Aviation Review Committee (NCARC). NCARC recommended the FAA's funding and financing system receive a federal budget treatment that ensured revenues from aviation users and spending on aviation services were directly linked and shielded from discretionary budget caps. This would ensure that FAA expenditures would be driven by aviation demand. While some movement has been made on this issue, this recommendation has not been fully implemented.

The technology components are not the biggest challenge. We have the expertise to innovate, design, build, and install the equipment. The business case – for airlines, manufacturers and suppliers – is the critical element. Airlines currently have no financial incentive to pay huge sums to retrofit fleets with state-of-the-art equipment needed only for procedures that are still being developed. Currently commercial airlines pay 17 unique taxes and fees for every ticket sold. Many of these taxes and fees collected go to FAA and to TSA but a few go to neither. Government ultimately must make the decisions on equipage requirements and timing, but is sometimes forced to develop solutions that only go part of the way in an attempt to satisfy competing objectives.

As the aviation community continues to move from planning NextGen to implementing NextGen the issue of a sustained adequate funding stream is even more urgent and the need to maintain the ability to equip aircraft with the technology necessary to realize the full benefit of NextGen becomes increasingly acute. Without a commitment from and leadership by Congress, the funding of NextGen is uncertain, and will most certainly cost even more and take much longer to implement.

Initial technological advances, e.g., Automatic Dependent Surveillance-Broadcast, or ADS-B, are key enabling technologies in the progress toward full NextGen implementation; the early benefits (ADS-B out) go to the FAA. Our industry simply cannot afford to continue to equip thousands of aircraft with expensive avionics and support the maintenance and training requirements that that implies without a funding mechanism to ensure the FAA provides the ground- and space-based infrastructure. The economic return on such airline investments (e.g. ADS-B in) will not be realized for several years, even in the best of situations. The value of the nation's air transportation system as an economic engine must be protected by ensuring a means to prevent modernization from being an investment without adequate return while the system matures.

In 2010, the FAA, following the rulemaking process, mandated ADS-B. By 2020, aircraft flying in controlled airspace in the U.S. must be equipped with ADS-B avionics that broadcast their position. Industry provided input into the selection of the 2020 date. However, industry has been slow to install ADS-B equipment in preparation for the mandate. A DOT Inspector General report, "FAA Faces Significant Risks in Implementing the ADS-B Program and Realizing Benefits." (AV-2011-002, Oct. 12, 2010) noted "The greatest risks to successfully implementing

ADS-B are airspace users' reluctance to purchase and install new avionics and FAA's ability to define requirements for the more advanced capabilities," The reluctance by users to install the required avionics is not the FAA's fault. Delaying the mandate date will not necessarily improve industry's installation schedule but will push the benefits for the FAA and users further into the future. Commercial airlines pay the majority of the cost to operate and maintain this country's ATC system and infrastructure. Funding must be comprised of a combination of Federal funds and user fees that require all airspace users to pay "their fair share." The airlines cannot afford to pay the cost of operating and maintaining our current system and for the additional expense to purchase avionics equipment that may not realize its full benefit for many years. Long term, sustained, adequate funding must pay for both operating the existing ATC system and modernizing the National Airspace System without driving our airlines out of business. As such, ALPA believes that any review of the ATC structure must also include a complete review and overhaul of the tax and fee structure imposed on commercial airlines. In addition, ALPA opposes any new commercial aviation user taxes, disguised as fees, and calls on Congress to level the playing field for airline taxes.

This reliable, sustained funding is not possible if Congress continues to legislate by continuing resolutions. The series of two dozen continuing resolutions that were passed before Sequestration forced the government shutdown in 2013 must not be repeated, and we appreciate the commitment already exhibited by this Committee to insure that the 2015 reauthorization bill is completed on time. It is our goal to be partners to help make that happen.

In 2011 and 2013, funding issues twice forced the shutdown and/or furlough of FAA employees. These two funding issues could have been avoided if a sustained funding stream was in place. Let me illustrate the impact of these two shutdowns.

The summer 2011 furloughs arose as a result of a lapse in authority for the FAA to collect Airport and Airways Trust Fund (AATF) revenues, the sole funding source for FAA's facilities and equipment (F&E) account, the Airport Improvement Program (AIP), and research, engineering, and development activities. When short-term extensions of FAA authority under the Airport and Airway Extension Act of 2011, Part III (P.L. 112-21), expired on July 22, 2011, employees working for FAA's office of airports and funded under AIP were immediately furloughed. Other employees paid from the facilities and equipment and research, engineering, and development accounts were also furloughed, as the sole funding source for those FAA programs, the AATF, could no longer collect revenue. Certain employees funded from the facilities and equipment account who inspected FAA navigation and communications equipment were ordered to stay on the job without pay because they were deemed to be essential to the safety of the air traffic system. About 4,000 FAA employees in total, roughly 9% of FAA's total workforce, were affected. As general fund moneys were available to continue paying employees, including any air traffic controllers paid out of the FAA's operations account, these employees were not immediately furloughed. A subsequent short-term extension of AIP expenditure authority and AATF revenue collection authority (P.L. 112-27) was enacted on August 5, 2011, ending the furloughs for affected FAA employees and eliminating the need for possible additional furloughs of other employees paid through the operations account.

In 2013, the budget Sequestration automatically occurred when Congress was unable to agree to a budget. In September 2012, the Office of Management and Budget (OMB) released a guiding memo to help agencies and departments understand how budgets were to be implemented. Across-the-board cuts meant Sequestration would affect each budget line in the FAA's budget. Specifically, each nondefense discretionary budget line would be cut by 8.2 percent according to the OMB. This included cutting \$792 million from the FAA's Operations budget line, which includes the controller workforce, \$229 million from Facilities and Equipment line, which maintains towers and tools such as navigation beacons, and \$14 million from the Research, Engineering, and Development line, which funds research on improving aviation safety and operational efficiency, as well as research on reducing the environmental impact of aviation.

To prioritize the required Sequestration budget cuts, the FAA used a five step process:

1. Cut travel, training, and administrative expenses as well as instituting a hiring freeze.
2. Cut contracting costs. This included the 238 contract towers as well as closing 73 towers at night.
3. Mothball on-going NextGen implementation efforts such as the Metroplex projects.
4. Defer maintenance on ATC and nav aids as well as drawing down its nav aid parts inventory.
5. Instituted furloughs for every employee (except those funded under the AIP) one day every two weeks.

Furloughs can have other effects. Air traffic controllers and other safety professionals eligible to retire are more likely to take advantage of early retirement options rather than face a situation where 8.2 percent fewer controllers are being asked to maintain the NAS with the same safety and efficiency standards as the entire workforce. Between September 2006 and July 2008, 3,312 controllers left the FAA's controller ranks. These losses were more than the natural outgrowth of an aging workforce -- of 3,312 that separated, only 35 controllers, one percent, had reached their mandatory retirement age, while 419 left the workforce before they were even retirement eligible. This mass exodus of controllers left the system staffed at only 71% of the acceptable level with the lowest number of certified professional controllers (CPCs) in 16 years.

Understaffing caused a significant increase in controller workload and a subsequent need to increase the use of overtime, resulting in a dangerous and unsustainable rise in controller fatigue. Additionally, the FAA was relying far too heavily on trainees to control traffic which resulted in delays and a slowing down of the training process, creating additional safety risks.

FAA funds the NextGen modernization program are primarily funded through the Facilities and Equipment line, which would be cut by 8.2 percent, resulting in cuts of about \$160 million. Core NextGen programs include Automatic Dependent Surveillance-Broadcast (ADS-B), System Wide Information Management (SWIM), Data Communications (DataComm), and NextGen Network Enabled Weather (NNEW). Sequestration slowed down NextGen at a time when the FAA and the aviation industry were finally seeing progress on programs such as En Route

Automation Replacement (ERAM) and OAPM (Optimization of Airspace and Procedures in the Metroplex). These efforts all came to a halt at a time when significant forward progress could have been made.

A NextGen slowdown also affects the economy. If research, planning, and construction spending is reduced, not only will essential modernizations be delayed, less money will be invested in the U.S. economy. An Aerospace Industries Association (AIA) study found that a reduction of 30 percent in NextGen funding could result in up to \$40 billion in lost economic output by 2021. It could cost 700,000 jobs by 2021, and as many as 1.3 million by 2035 (AIA July 2012 Report).

NextGen's enormous price tag significantly increases the economic risk of mistakes in development or implementation. In January 2009, the Government Accountability Office (GAO) removed the FAA's air traffic control modernization program from its High Risk List (HRL) for the first time in 14 years. The HRL identifies Federal programs and operations that the GAO deems as high risk due to their greater vulnerabilities to mismanagement. The FAA was initially placed on the HRL in 1995 due to its poor track record of program deployment and cost overruns. The GAO noted that management focus and willingness to attack and rectify their shortcomings were the reasons that it felt comfortable removing FAA modernization from the High Risk List.

The fact that partisan politics led to the FAA curtailing projects, furloughing employees, and the loss of hundreds of millions of dollars in tax revenue is unacceptable and must not be repeated. The safety of our air transportation system and the companies and workers who rely on it for their livelihood underscores the need for a sustained funding stream. Operating from continuing resolutions does not provide the FAA with the ability to allocate money for needed ATC system improvements in a timely manner. For the past 10 years, ALPA, during Congressional testimony, speeches, press conferences and releases has pressed for the long-term funding of the NAS and ATC infrastructure. We must get to the business of doing what's best of our country and our citizens. Every day we delay we fall further behind other regions of the world that have moved ahead without us and our airlines and their employees suffer in the global marketplace.

I began my remarks with a focus on collaboration. As we discuss varying ways to make improvements in the way ATC services are delivered, we should reflect on the value of that collaboration in achieving immediate improvements. Our experience has shown that if the FAA and industry improve communication and coordination to work collaboratively to make improvements, we achieve improvements in efficiency and effectiveness that result in benefits being delivered with no other changes necessary.

## SUMMARY

- **A sustained Long Term NextGen funding stream is required:** Funding is what the FAA needs to modernize and operate the NAS while giving all users access to a stable, safe, efficient aviation system. Funding must be stable and long term.
- **FAA and the FAA Air Traffic Control Organization have the leadership required for the job:** The current FAA leadership is doing a great job. The FAA Administrator has brought together a solid team to move NextGen from concepts

to implementation. FAA leaders like Administrator Huerta, Deputy Administrator Whitaker, Assistant Administrator for NextGen General Bolton, and Teri Bristol, FAA ATO Chief Operating Officer all have solid backgrounds and expertise managing and implementing complex systems.

- **The FAA is doing a good job of moving NextGen forward in a timely manner with industry input and coordination:** Once an implementation date is agreed to by industry and the FAA, both sides must be held responsible for meeting the implementation schedule.
- **The NextGen Advisory Committee (NAC) is providing industry input and coordination on key, timely NextGen decisions:** NextGen is the plan — but an architect’s plans tend to work out best when the people building the house are actively engaged with the planners. The NAC fosters industry collaboration with the FAA in an open and transparent manner. It includes a cross section of executives from the airlines, airports, general aviation, pilots, air traffic controllers, the Department of Defense, environmental interests, international interests and providers of air traffic control technology – all committed to ensuring a successful transition to NextGen.

We must have a fully-funded plan that offers a systematic approach that builds on better science and improved decision support tools, advanced air traffic procedures, enhanced aircraft technology, sustainable alternative fuels, and policies to address environmental challenges. Advances in aircraft technology and renewable fuels are essential if we are to provide solutions for the energy and climate challenges for the U.S. aviation system. In aviation, this entails a commitment to the flying public to continue to focus on the safety, convenience, and confidence of the traveling public, with minimal environmental impacts on our communities.

We urge Congress to work with industry to developing an appropriate NextGen airspace management system funding mechanism and stand by to be part of the solution. We look forward to working with this Committee and to be a resource as the debate about FAA reauthorization continue.