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**BEFORE THE HOUSE COMMITTEE ON TRANSPORTATION AND
INFRASTRUCTURE – SUBCOMMITTEE ON AVIATION**

**ON
ATC MODERNIZATION AND NEXTGEN: NEAR-TERM
ACHIEVABLE GOALS**

MARCH 18, 2009

Chairman Costello, Congressman Petri and members of the subcommittee, thank you for inviting PASS to testify today on air traffic control (ATC) modernization and the Next Generation Air Transportation System (NextGen). The Professional Aviation Safety Specialists, AFL-CIO (PASS) represents approximately 11,000 FAA and Department of Defense employees in seven separate bargaining units throughout the United States and in several foreign countries. The largest PASS bargaining unit is the Air Traffic Organization (ATO) Technical Operations unit, consisting of technical employees (systems specialists, electronics technicians and computer specialists) who install, maintain, repair and certify the radar, navigation and communication systems making up the air traffic control system.

By introducing new technologies through NextGen, the FAA intends to move from a ground-based air traffic control system to a satellite-based system, which the FAA contends is vital to meeting future demand. PASS and the employees we represent welcome modernization of the system and advancements in technology, as long as it is accomplished in a manner that preserves the safety and integrity of the system. PASS has concerns that as the FAA moves into new territory, it is disregarding several key issues that have the potential to impact the successful implementation of NextGen. Among these concerns are recent changes the FAA has made to its time-tested certification policy, involvement of stakeholders in modernization efforts, and the staffing and training of the FAA technical workforce.

Automatic Dependent Surveillance–Broadcast (ADS-B)

According to the FAA, the Automatic Dependent Surveillance–Broadcast (ADS-B) system is a “crucial component” of NextGen designed to “improve the safety, capacity and efficiency of the national airspace system.”¹ ADS-B is supposed to provide surveillance and situational awareness simultaneously to pilots and air traffic control facilities. ADS-B can be a very useful tool for maintaining proper separation of aircraft while allowing more efficient use of our nation’s airways. However, the aviation industry will only realize the benefits of ADS-B if the system is developed and implemented with a primary focus on safety.

Unfortunately, in PASS’s view, the approach being used by the FAA to deploy ADS-B is flawed because it dismisses decades of responsibly ensuring the safety of the flying public and has the potential to negatively impact aviation safety. ADS-B will be entirely owned by a private corporation, which is a significant change from past practices. The Department of Transportation Inspector General (IG) has expressed concern that as a result the FAA “could find itself in a situation where it knows very little about the system that is expected to be the foundation of NextGen” and encouraged the agency to “take steps to ensure it effectively addresses this risk.”² Additionally, one must question the prudence of placing the heart of our air traffic control system in the hands of the private sector after watching the collapse and resulting bailouts of so many corporations in the past year. Aviation safety should never be at risk of being adversely affected by catastrophic economic upheavals.

¹ Federal Aviation Administration, “Fact Sheet: Surveillance and Broadcast Services,” February 5, 2008.

² Department of Transportation Inspector General, *Challenges Facing the Implementation of FAA’s Automatic Dependent Surveillance–Broadcast Program*, CC-2007-100 (Washington, D.C.: October 17, 2007), pp. 2–3.

Elimination of Certification

Certification is the process in which a certificated FAA technician checks and tests systems or pieces of equipment on a periodic basis in order to ensure that they can safely remain in, or be returned to service and not negatively impact any aspect of the National Airspace System (NAS). The FAA's certification process has been successful for decades and is a key element in maintaining the safest and most efficient air transportation system in the world.

Despite the success of its certification program, the agency is making radical changes to its policy that PASS and the FAA technicians it represents believe will impact the safety of our aviation system. For years, the criteria established by FAA policy for determining which NAS systems and services require certification stated, "NAS systems, subsystems, and services directly affecting the flying public shall be certified."³ However, in drastic change to its policy, effective September 28, 2007, just a few weeks before the agency awarded ITT a contract to develop and deploy ADS-B, the agency changed its policy to read, "*FAA owned* NAS systems, subsystems, and services directly affecting the flying public shall be certified" (emphasis added).⁴ In other words, the FAA has not only changed its criteria to allow systems and services to be deployed without requiring certification, it has changed the policy to actually *prohibit* certification of systems it does not own.

FAA policy has always maintained that certification of NAS systems, subsystems and services directly affecting the flying public must be certified when they meet *any one* of the following criteria:

- (1) Provide moment-by-moment positional information to pilots or air traffic control operations personnel during aircraft operations.
- (2) Provide necessary communication or communication control among pilots and air traffic control operations personnel during the above aircraft operations.
- (3) Provide decision support information that directly affects aircraft heading, altitude, routing, control, or conflict awareness.
- (4) Provide essential meteorological information for takeoff and landing aircraft at airports.
- (5) Provide short term, long term, continuous, and conditioned power to NAS systems requiring certification located at a Service Delivery Point (SDP).⁵

ADS-B meets criteria 1 through 4, which in the past would have required the system and services to be certified by an FAA technician. By altering its policy to specify that only *FAA owned* system, subsystems and services shall be certified, the FAA abandons its ability to provide the highest level of safety oversight to the flying American public. In fact, this change goes against the very definition of certification contained in FAA Order 6000.15:

³ FAA Order 6000.15D – *General Maintenance Handbook for National Airspace System (NAS) Facilities*, dated July 23, 2004.

⁴ FAA Order 6000.15E – *General Maintenance Handbook for National Airspace System (NAS) Facilities*, dated September 28, 2007.

⁵ Id.

Certification is a quality control method used by the ATO to ensure NAS facilities are providing their advertised service. The ATO employee's independent discretionary judgment about the provision of advertised services, the need to separate profit motivations from operational decisions, and the desire to minimize liability, make the regulatory function of certification and oversight of the NAS an inherently governmental function.⁶

It must be emphasized that the change in certification policy would apply not only to ADS-B but also to any system that is not owned by the FAA. In other words, certification for systems not owned or maintained by the FAA will be totally eliminated and there will be no way to independently determine if the systems are safe. The current strategy for developing and deploying ADS-B will leave the FAA without the capability to ensure that the safety of the flying public comes first, rather than the corporate bottom line. The contractors and subcontractors of ADS-B will no doubt be concerned about the safety of the system, but they are, after all, corporations focused primarily on a business strategy designed to maximize profits.

It is the job of the FAA to ensure that aviation safety is never given second billing. FAA employees possess detailed knowledge of the intricacies associated with all NAS systems and operations and are uniquely qualified to deal specifically with equipment or system failures and the complex intricacies associated with such a vast network. Furthermore, if FAA employees are certifying ADS-B, they will be knowledgeable in the operations of the technology and able to provide assistance in the case the vendors are changed. This is also extremely important when considering that while ITT is the primary ADS-B contractor, there is also a team of several other vendors. If the agency is completely reliant on the contractor, any problem with any vendor could result in a disruption to ADS-B service. With a knowledgeable and adequate FAA technical workforce, there would indeed be more of a safeguard in place to protect against service disruptions.

According to a 1991 memo from the FAA's own general counsel, certification is an "inherently governmental function which cannot be performed by a contractor."⁷ Since the process of certification is considered to be an inherently governmental function and vital to the oversight of the system, why is the FAA eliminating it? PASS believes that the FAA is using the deployment of new technologies, such as ADS-B, and the removal of certification as a way to begin the process of privatizing the NAS. Therefore, there will be *no oversight* provided by the federal government and the FAA will entrust responsibility for the safe operation of ADS-B and other systems not owned by the agency entirely to private contractors.

While the FAA transitions to NextGen, it is critical that new and current systems are properly maintained and certified, *especially* if the FAA does not own or maintain the system. Toward this effort, the FAA must ensure that products and systems obtained through a third party are held to the same certification standards as FAA systems and equipment. As such, PASS proposes that language be added to the FAA reauthorization legislation making it clear that the FAA will

⁶ Id.

⁷ Manager, General Law Branch, AGC-110, memorandum to Manager, Maintenance Engineering Division, ASM-100, "Contractor Certification of Navigational Systems in National Airspace System (NAS)," June 18, 1991.

make no distinction between public or privately owned equipment, systems or services used in the NAS when determining certification requirements.

Staffing and Training of the Technical Workforce

PASS believes that insufficient technical staffing continues to be a major problem at numerous facilities throughout the country, and an increasing attrition rate among the most experienced technical personnel in these safety-sensitive positions is worsening the critical staffing crisis. For the vast majority of time over the past several years, the FAA has been below its required minimum safe number of 6,100 technical employees. In fact, some facilities are staffed at less than half of what the facility's workload generates. The technical workforce understaffing is further exacerbated by the agency's inability to accurately determine the right number of employees and job skills needed to safely and efficiently maintain the NAS. Currently, the FAA does not have a staffing standard or model that can accurately determine the number of trained FAA technicians needed to maintain the legacy systems of today and the NextGen of tomorrow.

The argument has been made on several occasions that the FAA must continue to maintain existing systems as it transitions to NextGen. The GAO has noted that "more and longer unscheduled outages of existing ATC equipment and ancillary support systems indicate more frequent system failures."⁸ In fact, in a 2007 report, the GAO focused on the duration of unscheduled outages, citing an increase from an average of 21 hours in 2001 to about 40 hours in 2006 as a potential sign that "maintenance and troubleshooting activities are requiring more effort and longer periods of time."⁹ Most recently, the GAO emphasized that it will be critical for the FAA to ensure the safety and efficiency of the legacy ATC systems and recommended implementing a "robust preventive and regular maintenance strategy and to support the skilled personnel that will be required to implement the strategy."¹⁰

PASS is aware that a continued debate over the number of employees that the FAA needs to maintain the NAS safely and efficiently diverts attention away from more critical issues that must be addressed as the agency moves forward. For that reason, PASS is strongly in favor of requiring the FAA to develop and use a staffing model that takes into account the agency's current and future needs with regard to technical staffing. Establishing and implementing such a model would ensure that the FAA's request for technical staffing and training is based on the agency's actual needs rather than budgetary goals set by the Office of Management Budget.

PASS supports language included in the FAA Reauthorization Act of 2009 (H.R. 915) that directs the Government Accountability Office (GAO) to conduct a study of technical training and the National Academy of Sciences to examine the staffing needs of the technical workforce. In today's changing aviation environment, it is critical that there is a staffing standard in place

⁸ Government Accountability Office, *FAA Reauthorization Issues are Critical to System Transformation and Operations*, GAO-09-377T (Washington, D.C.: February 11, 2009), p. 1.

⁹ Government Accountability Office, *Next Generation Air Transportation System: Progress and Challenges in Planning and Implementing the Transformation of the National Airspace System*, GAO-07-649T (Washington, D.C.: March 22, 2007), pp. 10 – 11.

¹⁰ Government Accountability Office, *FAA Reauthorization Issues are Critical to System Transformation and Operations*, GAO-09-377T (Washington, D.C.: February 11, 2009), p. 2.

for the FAA technical workforce and that the FAA is required to abide by that standard to help ensure that it has an adequate number of professionally trained technical employees to maintain both the current and future ATC system.

Involvement in FAA Modernization

In the past, PASS was actively involved in many of the FAA's efforts to develop and modernize the NAS. The input provided by PASS bargaining unit members was invaluable, resulting in safer systems, smoother deployment and less cost. For example, PASS members were extensively involved in the development and deployment of the Standard Terminal Automation Replacement System (STARS). In 1996, the STARS program was introduced as a way to standardize air traffic control equipment by replacing older systems and controller displays with the updated systems designed to provide such benefits as high-resolution color displays and multi-radar tracking. PASS participated from the beginning with the STARS program and was an integral part of identifying major issues that would have rendered the system unusable if it had been deployed as the agency had planned. PASS involvement included a human factors study that identified 52 individual issues, all of which have since been incorporated into the final version of the system. PASS played a critical role in ensuring security of the system by insisting on the use of passwords, login screens, aural alarms¹¹ and the capability to load the software onsite. In addition, PASS was pivotal in designing a method to train employees with the prerequisite skills and STARS-specific training while also ensuring current onsite systems were fully supported during installation and testing.

Another collaborative effort between PASS and the FAA involved the Display System Replacement (DSR), which was scheduled to replace display channels and workstations in the late 1990s into the early 2000s. For example, the FAA agreed with a PASS recommendation that the video and power modules needed to be reconfigured for the DSR to facilitate troubleshooting and reduce cable and connector failures. Technicians, working with FAA experts, developed a new design for all 20 air route traffic control centers at considerable savings. With PASS's assistance, the DSR project was successfully implemented on time and within cost.

Despite the obvious benefits of involving the employees who use and operate the systems in the development of those systems, about six years ago the FAA abruptly eliminated PASS's participation. The major problems associated with the FAA's implementation of the FAA Telecommunications Infrastructure (FTI) highlight the costly inefficiencies of allowing the FAA to move forward without technician involvement through PASS. As the primary voice/data transport system for the FAA's modernization efforts, FTI is the basis of the communications infrastructure for NextGen. FTI, currently contracted with Harris Corporation, is envisioned to provide complete telecommunications service and support for the NAS. When completed, FTI will consist of approximately 25,000 telecommunications services at over 4,400 FAA sites.

Technicians represented by PASS identified numerous problems associated with implementation of FTI, including many delays, contractor errors and outages over the past couple of years. With these delays and numerous issues, the costs associated with the program have grown

¹¹ As originally procured by the FAA, STARS had no audible alarms to indicate a malfunction with the system.

considerably—a major concern since FTI was originally hailed as a cost-saving initiative. In a 2008 report, the Department of Transportation Inspector General (IG) expressed concern because the “FAA’s last program baseline reduced the number of services planned but still increased the overall program cost estimated by more than \$100 million. As costs escalate, FTI cost savings have eroded, with none achieved in FY 2007.”¹² PASS believes that many of these problems could have been avoided if technicians had been involved in the development and deployment of the system. However, PASS liaisons were summarily removed from the project and PASS was informed that its support on this program was not needed. In fact, PASS was told that the FAA program manager did not want people on the team who would point out potential problems.

Implementation of additional NextGen systems must include stakeholder participation—especially FAA technicians who are extremely knowledgeable of every aspect of the NAS and how each system affects every other system. At a 2008 hearing before the House Committee on Science and Technology, the GAO emphasized the importance of involving FAA stakeholders, such as FAA technicians, in the implementation of any new project, stressing that stakeholders will play a key role in implementing NextGen. The GAO specifically stated that FAA technicians are not playing a large enough role. “Although air traffic controllers and technicians will be responsible for a major part of the installation, operations, and maintenance of the systems that NextGen will comprise, our work has shown that these stakeholders have not fully participated in the development of NextGen. Insufficient participation on the part of these employees could delay the certification and integration of new systems and result in increased costs, as we have seen in previous ATC [air traffic control] modernization efforts.”¹³

PASS acknowledges that the FAA’s decision to halt the collaborative efforts with its unions regarding FAA modernization was a direct result of the agency’s unfortunate labor-relations policy under the previous administration. It is now time for the FAA to move forward and seek meaningful assistance from its unions and work together to successfully modernize the NAS. PASS appreciates the efforts of this subcommittee to address this issue by including language in H.R. 915 requiring the FAA to collaborate with its unions in the planning, development and deployment of air traffic control modernization projects.

Air Traffic Control Facility Conditions

As the FAA works to modernize the NAS, it is critical that there is a stable air traffic control infrastructure in place. To move forward with NextGen plans without first ensuring a solid infrastructure will only increase the likelihood of problems and dangerous working conditions in the future. For many years, the FAA has neglected its infrastructure, specifically the buildings and facilities that house NAS equipment and systems and the employees who operate and maintain the equipment and systems. Since the condition of the infrastructure has always been a low priority for the agency, employees work in conditions that are unsafe, sometimes significantly interfering with their ability to perform their jobs as effectively and efficiently as necessary to ensure the integrity of the aviation system. Leaking roofs, deteriorating walls and

¹² Department of Transportation Inspector General, *FAA’s Progress and Challenges in Meeting FTI Transition Goals*, AV-2008-089 (Washington, D.C.: September 30, 2008), p. iii.

¹³ Government Accountability Office, *Next Generation Air Transportation System: Status of Key Issues Associated with the Transition to NextGen*, GAO-08-1154T (Washington, D.C.: September 11, 2008), p. 7.

ceilings, and obsolete air conditioning systems are among the varied problems technicians encounter everyday—problems that potentially endanger the lives of these employees and the operations of the NAS.

The IG has indicated its concern with the FAA’s maintenance of aging ATC facilities in several reports. Most recently, the IG has identified that many FAA ATC facilities have exceeded their useful lives and their physical conditions continue to deteriorate. In fact, while the average facility has an expected useful life of approximately 25 to 30 years, 59 percent of FAA facilities are over 30 years old.¹⁴ During visits to a number of FAA facilities, the IG noticed clear structural deficiencies and maintenance-related issues, including water leaks, tower cab window condensation, deterioration due to poor design and general disrepair. “While the deficiencies we observed pose no immediate risk to the operations of the NAS, they could affect operations in the long term if they are not addressed.”¹⁵

The FAA must make improving FAA air traffic control facilities and working conditions a priority in order to ensure successful modernization of the system. PASS supports language included in H.R. 915 directing the FAA to create a task force on air traffic control facility conditions and that employees who work at field facilities will be included. The FAA should ensure that the NAS infrastructure is stable and secure in order to allow these workers to fulfill their very important responsibility of protecting the safety and efficiency of this country’s aviation system.

Conclusion: Roadblocks to Success

The FAA is approaching NextGen implementation with ambitious plans to modernize the NAS and PASS is eager to be part of this process. The FAA must examine the multiple obstacles that stand in the way of NextGen success, including maintaining its time-tested certification practices, inadequate staffing levels in the technical workforce and a lack of a staffing model to determine the appropriate level of technical staff needed. It is PASS’s hope that the union will be able to collaborate with the agency to address these and other issues in order to ensure the success of NextGen. However, in order to move forward, the issue regarding the dismal state of labor-management relations at the FAA must be also be addressed.

Over the past several years, labor-management relations within the FAA have been in a state of serious disrepair. This has resulted in low employee morale, difficult working conditions and overwhelming tension between labor and management—all of which threaten the productivity of FAA employees and the efficiency of the aviation system. Despite PASS’s recent efforts to restart negotiations, contract negotiations are at impasse with four of PASS’s five bargaining units, representing 3,500 employees in the Flight Standards, Aviation System Standards, Aviation Registry and Manufacturing Inspector District Office bargaining units. Negotiations over new contracts for these employees have been at impasse for *over six years*. In PASS’s fifth and largest bargaining unit, Technical Operations, the FAA showed little interest in reaching a mutual agreement with PASS. As a result, when the agency’s final proposal was submitted for a

¹⁴ Department of Transportation Inspector General, *FAA’s Management and Maintenance of Air Traffic Control Facilities*, AV-2009-012 (Washington, D.C.: December 15, 2008), p. 1.

¹⁵ *Id.*, p. v.

membership vote, it was rejected by 98 percent of the employees. It is unclear when the negotiations process will begin again due to pending legal proceedings initiated and unnecessarily prolonged by the FAA.

PASS firmly believes that establishing a fair contract negotiations process at the FAA is the first and most important step on the road to successful NextGen implementation. PASS appreciates the many efforts of this subcommittee regarding this issue and supports the language in H.R. 915 that clarifies that the Federal Service Impasses Panel (FSIP) has jurisdiction over the FAA and that binding arbitration before an impartial board of experienced arbitrators is the preferred method of resolving bargaining impasses such as those currently facing PASS and other FAA unions. Rectifying the contracts negotiations process at the FAA will go a long way toward improving labor-management relations, ensuring that the FAA has the very best men and women working together to protect the safety of the aviation system and tackle the challenges associated with modernizing the system.