

**STATEMENT OF ALI BAHRAMI, ASSOCIATE ADMINISTRATOR FOR AVIATION SAFETY, FEDERAL AVIATION ADMINISTRATION (FAA), BEFORE THE HOUSE COMMITTEE ON TRANSPORTATION & INFRASTRUCTURE, SUBCOMMITTEE ON AVIATION: STATE OF AVIATION SAFETY, FEBRUARY 27, 2018.**

Chairman LoBiondo, Ranking Member Larsen, Members of the Subcommittee:

Thank you for inviting me to appear today to discuss the current state of aviation safety. Aviation safety is the FAA's top priority. We are in the safest period in commercial aviation, and we just experienced the safest year in general aviation. We are actively leveraging our experience from commercial aviation to advance safety in other domains. We remain committed to working with industry and other stakeholders to identify and address risks. With the support of this Committee, we have worked tirelessly to take a more proactive approach that instills a culture of safety – both in the industry and inside the FAA. Additionally, industry's commitment to engage early on innovative ideas, embrace systems safety, place value on compliance, and work collaboratively with us to develop tools and measures, has been critical to our efforts.

The result is the safest, largest, most complex, and most efficient air transportation system in the world. Indeed, there has not been a fatal U.S. commercial passenger accident since 2009. I am proud of the hard work that has gone into providing a basis for achieving this level of safety. Our success in addressing risk and improving safety in aviation during these past two decades is the result of strong and mature safety partnerships between government and industry to pursue safety improvement collaboratively and in a proactive manner.

We have made significant progress, which I would like to share with you today.

## *Fostering a Culture of Safety*

As the aviation system and its components have become increasingly more complex, we know that our oversight approach needs to evolve to accommodate the future state. In the last few years, the FAA has been shifting to a risk management based approach for its safety oversight responsibilities. A key part of this has been safety management systems, or SMS. With SMS, the FAA is taking a smarter, risk-based, comprehensive approach to managing aviation safety. It requires an organization-wide safety policy. It has formal methods for identifying hazards, mitigating and controlling risk, and continually assessing performance.

Under SMS, the FAA is a more data-driven agency. We are leveraging this approach in many areas, particularly runway approaches and landing procedures, and air carrier oversight. Following runway events at San Francisco International Airport last year, in addition to the NTSB investigation, the FAA quickly took action and established a Safety Risk Management Team. The team is composed of members from across FAA and external stakeholders, and was tasked with identifying the causes of the incident, and taking steps to mitigate and prevent similar occurrences.

In 2016, the FAA replaced its air carrier oversight system for aviation safety inspectors. Previously, inspectors used a calendar-based, non-scaling tool to conduct oversight. The FAA is now transitioning to a risk-based, scalable tool that relies on data collection to drive decisions for adjusting oversight plans. We are also working to incorporate the tools needed for inspectors to identify and adjust surveillance during times of rapid growth, or downsizing into guidance and training materials. These steps demonstrate FAA's transition from its legacy oversight model to a data-driven approach – a key part of SMS.

SMS allows operators to structure a system that matches the size, complexity, and business model of its organization. The requirement for part 121 commercial carriers to have an SMS comes into effect on March 9, 2018. SMS gives airlines a set of business processes and management tools to examine data gathered from everyday operations, isolate trends that may be precursors to incidents and accidents, take steps to mitigate the risk, and verify the effectiveness of the program. SMS stresses more than compliance with technical standards. It puts an increased emphasis on the overall safety performance. Most importantly, SMS creates a safety culture that assures hazards are identified, that actions are taken, and that results are measured. Then the process repeats itself. In the business of aviation, safety cannot be an “add-on” – it must be built in. Our stakeholders understand that and we thank the Committee for its support.

Another part of our evolving oversight model is our embrace of a new compliance philosophy, which emphasizes accountability of all stakeholders. It clearly distinguishes between compliance, which is the goal; and enforcement, which is one of our many tools. To emphasize, compliance is expected and required of everyone who operates in the airspace. We recognize our role in assuring the public of a safe system, and we will not hesitate to use strict enforcement where necessary.

I am very encouraged by the results thus far. Communications are now more open and working relationships with certificate holders has improved. Certificate holders are now more likely to call when they have questions; whereas in the past, they were might have been more reluctant to contact the FAA for fear of enforcement action. We are also seeing industry take a proactive approach to address deficiencies, even before being contacted by an FAA inspector. We know that it takes collaboration, communication, and common safety objectives to allow the FAA and the aviation community to come together, to identify system hazards, and to implement

safety solutions. Safety culture is not just a set of programs that can be “established” or “implemented.” It is a way of living and working, and it requires the open and transparent exchange of information. That, in turn, requires mutual cooperation and trust.

### *Transforming the FAA*

We are actively working to facilitate policies and management processes that promote a broad safety culture transformation both within and outside of our organization. Two of our biggest service offices, flight standards and aircraft certification, have undergone major realignments to better meet the needs of a changing industry.

Flight Standards Service (FS) plays a vital role in making the U.S. aviation system the world’s safest. We want to make sure we maintain that high level of safety. We are in the process of restructuring the FS organization. By moving away from an organizational structure based on geographic locations to an organization built around functions, FS will operate with greater accountability and greater flexibility to adapt to change. The FAA expects the restructuring to yield benefits to both the agency and the aviation community by strengthening our ability to keep pace with changes in the aviation industry. We will also be able to increase our ability to maximize fixed resources, and better ensure that our employees develop and interpret regulations and policies consistently.

Additionally, in July 2017, the Aircraft Certification Service (AIR) was realigned from a product-based structure to a functional alignment. The new organizational structure is designed to enable transformation. The newly created Organizational Performance Division will oversee AIR’s roadmap to transformation, and establish and track effectiveness metrics for both the FAA and industry.

With respect to aircraft certification process improvements, the FAA is moving beyond the initiatives that were driven by the FAA Modernization and Reform Act of 2012. The Aircraft Certification Service is transforming to meet the demands of today's dynamic aviation environment by moving to a systems approach. Emphasis will be placed on up front planning for new technologies, risk based level of involvement in certification programs and a robust oversight program. For example, in December of 2016, the FAA issued a complete overhaul of 14 CFR part 23, the rules for small aircraft certification. Instead of prescriptive standards that limit innovation, the new rules define performance-based objectives and give industry the flexibility to determine the best and safest way to meet them. On the international front, we signed agreements with the European Aviation Safety Agency and Transport Canada to accept each other's approvals of Technical Standards Orders and to validate basic approval with no technical review.

In previous hearings, there was discussion about the effectiveness of the Organization Designation Authorization, or ODA, and our use of metrics. Working closely with industry, we developed the ODA Scorecard. The scorecard is used to define mutually agreed measures, identify areas that need greater focus, and identify issues and concerns with respect to FAA and ODA holders' performance. We piloted the program in 2015, and set up a joint FAA/Industry Continuous Improvement team in 2016. In 2016, 40 companies participated. The goal is for our measures of success to show a year-to-year improvement. I am pleased to report that in just over a year, we have realized performance improvements in both FAA certification offices and ODA holders. The results are published on our website. By measuring appropriate indicators and developing action plans to continuously improve joint industry and FAA performance, we are positioned to optimize our involvement with no adverse impact on safety.

## *Working with stakeholders*

With the advent of new entrants such as unmanned aircraft systems, commonly referred to as UAS or drones, and commercial space operations, a balanced approach that involves collaboration between government and industry is needed. We strive to engage stakeholders throughout the lifecycle of policymaking. For example, the FAA's commitment to the safe, secure, and efficient integration of drones and the expansion of routine drone operations requires resolving several key challenges to enable this emerging technology to safely achieve its full potential. Because drone technology is evolving at such a rapid pace, we involve stakeholders in framing challenges, prioritizing activities, and developing consensus solutions. By leveraging this expertise, we ensure that the FAA maintains its position as the leader in aviation safety.

The Drone Advisory Committee (DAC), formed in 2016, is a prime example of stakeholder engagement. Its members include representatives from industry, government, labor, and academia. The DAC allows us to look at drone use from every angle, while considering the different viewpoints and needs of the diverse unmanned aircraft systems community. Our collaborative working relationships with groups such as the DAC will help inform and prioritize integration activities, ensure we remain engaged with industry trends, and maintain clear channels of communication to convey expectations and solicit feedback.

The impressive gains in safety are due in part to the aviation industry and government voluntarily investing in the right safety enhancements. The work of the Commercial Aviation Safety Team (CAST), along with new aircraft, regulations, and other activities, reduced the fatality risk for commercial aviation in the United States by 83% from 1998 to 2008. The CAST model uses data to develop an understanding of the best actions or interventions to prevent

accidents. The goal was to collaborate on identifying the top safety areas through the analysis of past accident and incident data, charter joint teams of experts to develop methods to understand the chain of events leading to accidents, identify effective interventions to address these safety areas, and remain focused on implementing these critical interventions.

CAST has been extremely successful. It has moved beyond the historic approach of examining past accident data to a more proactive approach that focuses on detecting risk and implementing mitigation strategies before accidents or serious incidents occur with a disciplined, data driven focus. Using data from non-accident sources and voluntary reporting programs, CAST has adopted nearly 100 safety enhancements. CAST aims to further reduce the U.S. commercial fatality risk by 50% from 2010 to 2025.

In a related effort, the FAA is working to reduce safety challenges in general aviation (GA) as well. Much like CAST, the General Aviation Joint Steering Committee (GAJSC), which was formed in the mid-1990s, established a data-driven, aviation-safety strategy to reduce fatal accidents in GA. The FAA, industry, and the general aviation community are working together to mitigate the risks that lead to fatal GA accidents. One result of this collaboration is the FAA's policy on non-required safety enhancing equipment referred to as NORSEE. NORSEE encourages GA aircraft owners to voluntarily install equipment to provide pilots with better overall situational awareness.

Working with the GA community alongside industry, the efforts have been successful. We have targeted, and have been working toward, a yearly 1% reduction in fatal GA accidents to bring a cumulative 10% reduction by the close of fiscal year 2018. I am proud to say that we

have already exceeded our original goal, making last year one of the safest years we have had in general aviation.

The collaboration between government and industry, at all levels, has been instrumental to the success we have achieved in the improvement in aviation safety. Our continued success in advancing aviation safety depends on these strong safety partnerships built on trust and the ability to share and protect voluntarily provided safety information. As the work of CAST and the GAJSC has evolved, so has the agency's ability to collect and analyze safety information.

In 2007, the FAA launched the Aviation Safety Information Analysis and Sharing, or ASIAS, program to help transform safety analysis from a forensic approach, looking at accidents and incidents after they occurred, to a risk management approach, allowing for proactive discoveries of safety concerns before they lead to significant events. It took years to establish voluntary safety programs and build trust within the community. Congress has been an important advocate in helping us protect vital safety information. These safety information protections are imperative so that we can continue to provide the environment in which safety personnel are voluntarily providing safety information. This, in turn, provides carriers and government with valuable insight into potential systemic safety issues.

ASIAS partners with CAST and the GAJSC to monitor known risk, evaluate the effectiveness of deployed mitigations, and detect emerging hazards. There are currently 46 part 121 member air carriers, 63 corporate/business operators, five manufacturers and two maintenance, repair, and overhaul organizations participating in ASIAS. The program continues to evolve, and has matured to the point that the FAA and industry can leverage voluntarily provided safety data from operators that represent 99 percent of U.S. air carrier commercial



operations. ASIAS has established metrics that enable CAST and the GAJSC to evaluate the effectiveness of mitigations. It is also expanding to support other areas in aviation, such as rotorcraft.

We also regularly engage with our Federal and international partners to improve safety. Along with our law enforcement partners, the FAA maintains a multi-layered oversight of the aviation system, including its aircraft and airmen registry. This includes a team of special agents from the FAA who work with domestic and international law enforcement partners to investigate cases involving fraudulent aircraft registrations. The agency is constantly working to enhance the integrity of registry information, and is developing a plan to significantly upgrade and modernize the aircraft registration process to make the system more effective.

The online pilot record database is an example of the FAA's and Congress' commitment to establishing an electronic database for pilot records. In December of 2017, the FAA released a beta version of the database. We are deploying the database in phases to ensure minimal disruption to air carrier and operator access to existing pilot records. Initial feedback of the database has been positive. When complete, the database will enable air carriers to easily check the qualifications and background of pilots as part of the hiring process.

As safety management systems mature, our reliance on sound safety analysis to identify risks to the aviation system, mitigate hazards and track safety enhancements, will be key to sustaining a safe and efficient airspace. This type of capability is achieved only through sustained safety partnerships and the reporting of critical safety information among stakeholders. We must collaborate on safety analysis and best practices, and monitor safety performance and implementation of mitigation strategies. SMS, risk-based decision-making, and collaborative

transparent information sharing will be the cornerstone for future FAA oversight and industry's management of the safety risks that affect their operations.

Before I conclude my remarks, I would be remiss if I did not acknowledge the support of Chairman Shuster and Subcommittee Chairman LoBiondo. You have been instrumental in providing the FAA with the direction and necessary resources to maintain our position as a global leader in aviation. I thank you both for your leadership and wish you well as you retire from Congress.

### *Conclusion*

We have been diligent in our efforts to address what is at the heart of your direction: that the system be safe, responsive, and flexible. We have made significant progress in restructuring our organization to adapt to the new business models, while keeping safety at the forefront of any decision. It is because of the collective hard work of the men and women of the FAA, the work of Congress, and stakeholders that aviation is the safest it has ever been. Aviation safety is, and must always be, our number one priority. There can be no compromise on safety. Yet, we do not want to stifle innovation. Working together with all interests, we are confident we can balance safety and innovation. The Administration is committed to working with Congress to foster American innovation and solidify America's role as the global leader in aviation.

This concludes my statement. I will be happy to answer any of your questions at this time.