STATEMENT OF MARGARET GILLIGAN, ASSOCIATE ADMINISTRATOR FOR AVIATION SAFETY, FEDERAL AVIATION ADMINISTRATION, BEFORE THE COMMITTEE ON COMMERCE, SCIENCE AND TRANSPORTATION, SUBCOMMITTEE ON AVIATION OPERATIONS, SAFETY, AND SECURITY, ON FAA REAUTHORIZATION: PERSPECTIVES ON IMPROVING AIRPORT INFRASTRUCTURE AND AVIATION MANUFACTURING, MARCH 23, 2017.

Chairman Blunt, Senator Cantwell, Members of the Subcommittee:

Introduction

Thank you for the opportunity to appear before the Subcommittee on Aviation. I look forward to providing you with updates on our progress about the aviation manufacturing industry. As you will see, even though the system and its components have become increasingly more complex, working together with industry and Congress, we nevertheless have been able to raise the safety bar.

As my career in federal service draws to a close, I look back with pride and a great sense of accomplishment knowing how far we have come. I would be remiss not to mention the role of Congress in helping us operate and maintain what has become the world standard for safety and efficiency. Government needs to be a catalyst for innovation; we cannot put industry in the place where it must sit on its hands while the bureaucracy catches up. Thankfully, that is not the case.

The Federal Aviation Administration (FAA) has testified before Congress a number of times on manufacturing and certification issues. We made commitments, and today we come before this subcommittee having kept those commitments. We have accomplished much, and in fact, have moved well beyond what this committee contemplated as we strengthen our efforts to work with industry. The FAA Modernization and Reform Act contains provisions requiring that the FAA work more closely with industry. We are, and I would like to highlight briefly a few examples.

Keeping Our Commitments

We set the policy for expanding delegation to companies regarding the processes by which aircraft are maintained. We expanded the framework to delegate noise and emissions compliance findings. We eliminated the delay in certification project initiation by developing a new resource management process. We've also created a new training program to minimize subjectiveness in our audits of industry.

We are also taking steps to allow applicants that have demonstrated a history of technical competency in certain aspects of a certification program to be allowed to work through certification approvals without a specific finding by the FAA. This policy gives applicants greater control over their business schedules and highlights their responsibility to design and produce safe compliant products.

We have previously highlighted an initiative where, under specified conditions, the FAA and EASA would accept each other's approvals without further review. We concluded the agreement with EASA in 2016, thereby reducing time to market and fees associated with validation of the approvals by EASA. We have also reached an agreement with Transport Canada Civil Aviation for similar improvements and savings in time. We are looking to expand this agreement with Brazil. With these agreements, parts made by U.S. manufacturers move more quickly and easily in international commerce.

AIR Transformation

The FAA Modernization and Reform Act also highlighted the need for government to work better and smarter. As part of our commitment to keep pace with industry, we are transforming our Aircraft Certification Service. As you know, the Aircraft Certification Service (AIR) works to continuously improve within today's dynamic aviation environment, which is heavily

characterized by change. Aviation products are designed and produced in locations around the world, and an international web of networks and complex business arrangements challenge AIR's traditional regulatory model. Technological advances and business model changes are precipitating higher rates of change and increasing the need for organizational agility as the environment shifts. The industry is both expanding and contracting much faster than the FAA can ever respond. Meanwhile, the expectations of industry, government and the flying public continue to increase, demanding we do things faster—and with greater levels of safety.

The FAA Modernization and Reform Act sought to review and reform the certification process and make it more nimble, but we are moving beyond simple reform to transformation.

To meet these demands AIR is undergoing a transformation focused on 3 goals:
- Refresh the certification strategy,
- Invest in management systems to improve performance, and
- Improve our organization and invest in our people.

Refreshing the certification strategy means FAA will take a systems approach, relying on industry's processes and competencies based on risk management. This minimizes our involvement along the certification path to those areas of higher risk.

We cannot move to managing risk unless we have systems that will focus on the use of data. Information technology will allow us to adjust our level of involvement based on risk, and assign our resources accordingly.

Investing in our people is the most important aspect of our ability to improve the organization. Our geographically based approach was established in the early 80's and was organized around the products we certify. Over the last 40 years, the industry's expansion and diversification has made that structure outdated and unable to keep up with rapidly changing global market. By

moving to an organization built around the functions we perform we will better match industry's demands and global needs. Our emphasis will be placed on up front planning on new technologies with industry, development of reusable compliance techniques adaptable to industry and a shared risk-based oversight program with industry.

As we work with industry to implement our transformation, we must establish metrics to measure our success. AIR recently created a new Organizational Performance Division that will oversee our roadmap to transformation, tracking outcomes expected by both FAA and industry. The new division will establish with industry agreed upon metrics and effectiveness measures for both FAA and industry. Then we will hold each other accountable to meeting these metrics. We encourage you to visit our AIR Transformation webpage (www.faa.gov/go/AIRTransformation) to obtain regular updates.

Industry Collaboration

Safety is a shared responsibility, not a solitary journey. The last foundational element in our strategy recognizes that successful transformation requires 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 to improve both FAA and company performance.

Working with industry, and leveraging the expertise that resides in the aviation community, continues to be advantageous to us both. In 2013, the International Civil Aviation Organization (ICAO) established a requirement for organizations that design and manufacture aircraft to have a Safety Management System (SMS). U.S. companies, looking to remain competitive on the global market, wanted a way to be recognized as having an SMS to meet the ICAO requirement. The FAA turned to industry to develop a standard that met the requirements of ICAO Annex 19. A government-industry team under the auspices of the Aerospace Industries Association and the

General Aviation Manufacturers Association collaborated and published National Aerospace Standard 9927 on May 31, 2016. Less than a month later, the FAA determined the standard to be consistent with our SMS regulation and that it could be used as a voluntary means to satisfy the ICAO SMS requirement. We have developed a process to accept applications from companies that seek recognition for their design and manufacturing systems. This is just one more example of where the agency and industry are striving to reform and streamline certification in a global market.

We've also been successful working with industry to address the environmental impact of leaded fuels. Thanks to Congressional support, FAA and industry established the Piston Aviation Fuels Initiative (PAFI). Under that initiative, the FAA has made significant progress in qualifying and testing potential unleaded fuels for general aviation use. But that is just the first step. FAA will need continued Congressional support to streamline the process to approve the use of the new fuels in the more than 160,000 general aviation aircraft. We are working with aircraft and engine manufacturers, fuel producers, the Environmental Protection Agency (EPA) and industry associations to overcome technical and logistical challenges to ensure the supply of aviation gasoline is not interrupted.

Congress has shown unwavering support to our effort to streamline certification of small aircraft by rewriting Part 23 of our regulations. A major endeavor in conjunction with our Part 23 revision is streamlining the cost and timelines associated with getting safety enhancing equipment into the general aviation cockpit. We are trying to "right size" the level of certification rigor, based on the overall risk posed by the new technology, balanced by the potential safety enhancement introduced. We have certified angle of attack equipment allowing the use of an industry-developed standard. This technology helps address loss of control, which is the most prevalent accident category in general aviation. We've gone on to streamline the process of installing other non-required safety enhancing equipment (or NORSEE) in the general aviation cockpit. Now we are beginning a prototype program with industry that looks at

replacing required equipment with more modern equipment with better, safer features. As we gain more experience in weighing risk and safety value, we will rely more and more on industry to help identify the next technology that will enhance general aviation safety and save lives.

Measuring Success

We are taking steps to measure the success of our efforts to work with industry. In 2015, FAA worked with industry and developed a set of metrics aimed at measuring the overall performance and health of the Organization Designation Authorization system called ODA. The objectives were to define mutually agreed measures, identify areas that were in need of greater focus and identify issues and concerns with respect to FAA and ODA holders' performance. In collaboration with industry, the FAA initiated an ODA Scorecard Prototype to resolve implementation issues and obtain data to support implementation of the metrics nationwide. Twenty-four companies participated in this pilot project, which was concluded in December 2015.

The results of the ODA Scorecard indicated that the initiative was successful. Privately and publicly, industry leaders endorse this approach. Our industry stakeholders agree that this is the right thing to do and the right way to do it. Over 80 percent of participants indicated they experienced value in the pilot and recognized the greater potential the scorecard could present to all stakeholders. With overwhelming support and encouragement from industry, the FAA implemented the metrics nationwide for 40 ODA design approval holders in 2016.

National rollup of the Scorecard data demonstrates that FAA and industry are successfully working together to meet each other's needs. We are also identifying actions to improve how we work together. For example, over 75 percent of the companies rated the FAA as "green," or "meeting their expectations," and the trend is improving. Over 75 percent of the companies were also rated "green" by their overseeing Aircraft Certification Office, and the trend is improving

there as well.

Together, we have identified areas in which additional work is needed and have developed joint action plans to improve those areas. In 2016, we completed 97 percent of the local joint action plans from the 2015 Prototype. We have chartered a joint ODA Metrics FAA-Industry Certification Improvement Team to move this initiative forward. The team's goal is to improve the reliability and accuracy of indicators. That, in turn, will help decrease the involvement of the FAA in lower risk areas and maintain industry's compliance expectation.

The ODA Scorecard is both a tool and a process to help the FAA and industry institutionalize how we improve our relationships at the local and the national level. Going forward, it is important to keep an open, constructive dialogue to be successful in this common effort. Industry and FAA need to work together to improve the product approval processes and define the timing for transition to more advanced methods of product approval.

International

As you know, our efforts to partner with industry must acknowledge the nature of the global marketplace. To that end, we continue to work toward an improved validation process, placing greater reliance on the certification systems of our bilateral partners. These improved processes are beneficial to the FAA and our international partners such as EASA when streamlining the acceptance of repairs, parts and modifications to aircraft through supplemental type certificates. Reliance on these types of agreements with emerging aviation authorities requires an up-front investment to be successful and allow U.S. industry to succeed in the global marketplace. This translates directly to enhancing the safety of the flying public.

We would also like to extend this reciprocal approach to the approval and use of foreign state-of-design continued operational safety information. As the state-of-design for U.S. manufacturers,

we issue Airworthiness Directives (ADs) when there is an unsafe condition on a U.S. product. Many foreign countries that own or operate U.S. products use our ADs and immediately adopt the corrective methodology that they describe. As the certifying authority, we work with the manufacturer to develop the corrections for the unsafe conditions and have the best information to assess the risk, the corrective action, and proper timeline for implementation. The foreign equivalent of our AD is a mandatory continued airworthiness information (MCAI), from a foreign State of Design. Just as we have the best insight into the continued safety of our products, foreign manufacturers and their certifying authorities have the best technical knowledge of their products and how to maintain the intended level of safety. Unfortunately, our rulemaking process makes it impossible for us to simply adopt corrective actions from other aviation authorities, like EASA. Instead, we have to conduct repetitive assessments and issue our own corrective action. This repetition costs FAA time and money that could be working on the next safety issue for the U.S. fleet. It also delays the implementation of the safety fix, resulting in a U.S.-operated foreign product that could be less safe than the same product operated by foreign users. Allowing the FAA to leverage the work done by a competent foreign authority would result in a safer global aviation system.

The industry is changing rapidly, and the threats that face it are evolving equally quickly. To counter one such threat, we are working with industry on cyber security.   We have taken allegations of successful cyber vulnerabilities to civil aircraft very seriously.

Since 2005, we have been addressing cyber vulnerabilities during the design and certification process using two Special Conditions. These Special Conditions, which carry the weight of regulations, were first applied to the Boeing 787 program. The 787 was the first "e-enabled" aircraft, meaning that it had internet protocol-based (IP-based) systems that are accessible from within the airplane and externally. Our two Special Conditions focused on those access points, both inside and outside the aircraft. Since the certification of the 787, these Special Conditions have been applied to other certification programs, as well as to aircraft that are being updated to

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add passenger features, like internet access and Wi-Fi.

Realizing that we potentially needed more protection for important aircraft systems, the FAA tasked the Aviation Rulemaking Advisory Committee (ARAC) to form a working group to provide recommendations on cybersecurity. ARAC answered our request and the Aircraft Systems Information Security and Protection (ASISP) working group was formed in 2015. The working group membership was comprised of a wide range of domestic and international industry and government experts. We also invited three international aviation authorities to be observers—Transport Canada, EASA, and ANAC, the Brazilian authority. The working group delivered its report to the ARAC in mid-September and the ARAC forwarded it to us in early October.

There are 30 recommendations that range from rulemaking to developing best practices. The recommendations were aimed at the full spectrum of civil aviation products—from transport aircraft to general aviation aircraft to engines. We will take the working group's recommendations and work together to establish an internationally harmonized basis to protect civil aircraft from cyber vulnerabilities. We need to work as one to establish a set of common requirements that can be institutionalized globally, so that aircraft designers and operators are confident that their aircraft are protected in domestic and foreign airspace.

We also intend to engage ICAO and its membership to help inform a regulatory framework for cyber protection. ICAO provides a unique ability to leverage foreign expertise and an invaluable forum that fosters international acceptance. We are sending a delegation to Montreal later this month to initiate this effort. Cybersecurity of civil aircraft is a priority for us.

Conclusion

We have been diligent in our efforts to address what is at the heart of your direction: that the

system be responsive, flexible and safe. We are making sure that our own organization is among the first to adapt to the new world market. AIR is transforming to improve its efficacy to meet the needs of industry while advancing the FAA's mission to provide the safest, most efficient aerospace system in the world. As a result, to respond to the drivers of change, we are moving forward with a *comprehensive* approach to increasing efficiency and effectiveness, known as [AIR Transformation](#).

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