HOUSE TRANSPORTATION AND INFRASTRUCTURE COMMITTEE

SUBCOMMITTEE ON AVIATION

TESTIMONY OF:

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TEXTRON AVIATION

"BUILDING A 21ST CENTURY INFRASTRUCTURE FOR AMERICA: STATE OF AMERICAN AVIATION MANUFACTURING"

WEDNESDAY, FEBRUARY 15, 2017

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

Thank you for inviting me to testify this morning on the state of American aviation manufacturing. My name is Michael Thacker, and I am Senior Vice President of Engineering for Textron Aviation. Textron Aviation is part of **TEXTRON INC**, a $13.8 billion multi-industry company with 36,000 employees.

TEXTRON AVIATION is home to the iconic Beechcraft, Cessna, and Hawker brands, and continues to lead general aviation through two principal lines of business: Aircraft sales and Aftermarket. Aircraft sales include business jet, turboprop, and piston aircraft, as well as special mission and military aircraft. Aftermarket includes commercial parts sales and maintenance, inspection, and repair services. Textron Aviation currently has more than 11,300 US employees throughout ten different states. We have manufacturing facilities in Wichita and Independence KS, Columbus, GA, and Mesa, AZ. We also operate ten Service Centers in seven other states.

Most, if not all, of you are familiar with the challenges faced by general and business aviation in the years since the economic downturn in 2008. Despite some positive signs during the interim, business conditions have not dramatically improved. Many jobs were lost that have not been regained, and some of the industry members have vanished or been absorbed by others. Despite the challenges, America remains the world leader in general and business aviation and the industry remains a great example of American technical leadership leading to a positive balance of trade.

Our vital industry, however, appreciates and needs the continued support of Congress to remain strong and grow in the future. Numerous obstacles to efficient business operations remain. One of which is regulatory burden across our business.

Textron Aviation has remained at the forefront of our industry through a commitment to innovation and new product development in both strong and weak economic environments. Due the nature of our business, the ability to rapidly field new and improved products is critical to financial performance and the ability to preserve and grow US jobs. The certification process represents a significant portion of new product development time and expense, and is consistently on the critical path to completion of new products and delivery into customers hands domestically and globally.

Textron Aviation appreciates the efforts being made by FAA leadership and the support of Congress for streamlining efforts. While some progress has been made, opportunities remain to consolidate the gains and capture the full benefits of the changes mandated by Congress and initiated by FAA leadership. For aircraft manufacturers, the key to success in the certification process is a clear path to compliance. This allows appropriate management of risk to cost and schedule. A clear path to compliance consists of three basic elements:

1) Clear and stable aircraft requirements – without these the ability to deliver to customers in a timely manner as promised remains at risk, in some cases until late in the process
2) Clear and consistent documentation expectations – without these the content and amount of documentation is also uncertain, but generally continues to increase; over the last 10 years the number of pages required to document certification of a similar scope program has increased ~2 to 10 fold for Textron Aviation
3) Consistent and appropriate level of involvement – the pace and diversity of industry can outpace FAA bandwidth to successfully engage in every detail of a project; the full use of the Organization Designation Authorization (ODA) program is a readily available resource to minimize this bottleneck

In some form, these key drivers are being addressed by current initiatives, but to date actions have not had a sufficient impact on working level actions. Some recent positive actions that merit attention are the release of Amendment 64 to FAR Part 23 and the on-going transformation of the certification organization.

Textron Aviation would like to thank Congress for passage of the Small Airplane Revitalization Act. The resulting public law, P.L. 113-53, encouraged the timely completion of the Part 23 re-write effort and led FAA to execute a process, with both industry and international regulatory involvement, that ensures a more uniform transition to this new and streamlined set of regulations. Industry should see near term benefits from the continuum of safety approach to product categorization and over time should see more rapid incorporation of safety and efficiency enhancing technologies through the more streamlined process of using industry standards to achieve consensus on new means of compliance.

With the transformation of the FAA certification organization, FAA leadership has stated the intent to:

- Encourage early industry engagement and risk-based monitoring to eliminate unnecessary FAA involvement in “critical path” during certification
- Improve consistency and standardization
- Foster innovation
- Provide agility and adaptability to meet the challenges of the dynamic global aviation industry
- Establish business practices for utilizing metrics for determining efficacy of Industry/FAA associated with compliance/safety and time to market

Textron Aviation applauds the intent and appreciates the strong outreach and collaboration with industry to refine the implementation plan. While the top level reorganization helps establish a vision, the implementation will determine if real and tangible results come from the change. Textron Aviation is pleased to be involved in these efforts and looks forward to continued engagement going forward. The real challenge will be ensuring that the message of this transformation makes its way throughout the entire organization especially in the case of fuller utilization of ODA and other delegation efforts. Additionally, while AIR Transformation intends to improve the overall certification process, it fails to include Flight Standards in the

transformation which can be a stumbling block to the pace of certification programs since approving flight manuals and instructions for continued airworthiness is done by Flight Standards. Overall, the goal of AIR transformation must be to ensure that FAA lowers unnecessary barriers to incorporating safety technologies by fully delegating and utilizing ODA's and driving consistency across disparate FAA organizations.

Both of these efforts move in a positive direction, but leave work to be done, and done in an expeditious manner. Like in the Part 23 effort, Congress can play an important role in working with FAA and industry to advance certification and regulatory reform. The certification titles contained in both your Committee-passed bill and the Senate-passed FAA Reauthorization would have provided an important framework and direction for these reform efforts. In particular, language that supported fuller utilization of ODA, improved validation and acceptance of products globally, reduced the inconsistent application of regulations by FAA, and furthered reforms in the Flight Service Standards Office at FAA is strongly supported by Textron and other aviation stakeholders. We were disappointed these reforms were not enacted in the 114th Congress. Passing them in an expeditious manner this year would benefit safety, innovation, jobs, and our nation's competitiveness. These changes, if enacted, will have an immediate and lasting impact.

The new Part 23 also establishes a continuum of safety for product categorization for small aircraft matching product requirements to performance measures, passenger risk and system risk. The same concept is applicable to other parts for larger aircraft and rotorcraft where a great diversity of products is held to a single standard that may not be appropriate for the risk represented by all of the products in a category. The same benefits touted for Part 23 of more rapid incorporation of safety and efficiency technologies could be expected by expanding this philosophy across all aircraft product categories (Parts 25, 27 and 29).

The certification organization transformation aligns the organization to enable improved consistency and to shift the focus from sub-element compliance to system oversight. Both are appropriate directions. The key will be successfully transitioning the roles and expectations at all levels of the organization to achieve this change in focus. Some lessons may be learned from the manufacturing oversight side of the organization where the system oversight model has been established for many years. This should lead to full utilization of the competent organizations already recognized as capable by the FAA through ODA designation. Some in industry, including Textron Aviation, have made a substantial investment to implement ODA and have yet to see the full benefit expected when it was introduced in 2006 (granted to Cessna in 2008).

Two additional areas of opportunity I would like to highlight are regulatory creep and global acceptance of FAA certifications.

In my earlier comments, I mentioned one element of a clear path to compliance was clear and stable aircraft requirements. If a regulation remains unchanged, aircraft manufacturers should be able to assume that a prior applicable means, demonstration and documentation of

compliance should still be valid. Unfortunately, this is not always the case. The published Transport Aircraft Issues List for a new part 25 aircraft, many of which lead to Issue Papers, is 19 pages long. Some of the items on the list are more than 10 years old, but have not been incorporated into publicly vetted regulation. All of that is before consideration of any new and novel aspects unique to the airplane that might drive special conditions or other new requirements. Each of these is an additional product requirement not defined in the current amendment of Part 25. In addition, resolution of each issue paper requires a multi-step position process consuming critical time and resources for both the applicant and the FAA. Each of these contributes to a higher level of uncertainty and risk in the execution of the product development and certification program. A streamlined process for updating regulatory requirements for Part 25 along the lines of the Part 23 changes recently completed could have a significant positive impact.

Another opportunity area is global acceptance of FAA certifications. As mentioned earlier, general and business aviation have a positive trade balance. Many of our products have a strong global presence, meaning US manufacturers need to have products validated by foreign authorities to have permission to register and operate in those countries. Validation challenges to FAA certifications have been increasing in recent years impacting the competitiveness of US products abroad. This can be particularly painful for new products entering a competitive global marketplace, delaying deliveries and resulting in lost sales. We would like to see a move toward mutual acceptance between the FAA and their top tier peers eliminating the duplication of effort and accelerating global availability of new products.

We appreciate the support of Congress and the commitment shown by FAA leadership for continued improvement of our aircraft certification process and infrastructure. The economic and safety benefits of being the global leader in this area are tremendous. Significant opportunities remain in front of us. Together we can make a better future for the general and business aviation industry and for our states and nation.

Thank you again, and I look forward to answering your questions.

APPENDIX TO TESTIMONY

ADDITIONAL VIEWS ON THE STATE OF

AMERICAN AVIATION MANUFACTURING

PROVIDED BY

ADDITIONAL TEXTRON INC. BUSINESSES:

BELL HELICOPTER, LYCOMING ENGINES, TRU SIMULATION + TRAINING,
AND TEXTRON SYSTEMS UNMANNED SYSTEMS

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BELL HELICOPTER is an industry-leading producer of commercial and military vertical lift aircraft and the pioneer of the revolutionary tiltrotor aircraft. Bell Helicopter is globally recognized for world-class customer service, innovation, and superior quality. Approximately 13,000 Bell Helicopter manufactured and licensed aircraft are flying in more than 120 countries. Bell has nearly 6,000 employees in the US, a global headquarters in Texas, and manufacturing facilities in Texas, Tennessee, Alabama, and Louisiana.

- FAA's AIR Transformation is a step in the right direction. The real challenge will be ensuring that the message of this transformation makes its way throughout the entire organization especially in the case of fuller utilization of ODA and other delegation efforts. Additionally, while AIR Transformation intends to improve the overall certification process, it fails to include Flight Standards in the transformation which can be a stumbling block to the pace of certification programs since approving flight manuals and instructions for continued airworthiness is done by Flight Standards. Overall, the goal of AIR transformation must be to ensure that FAA lowers unnecessary barriers to incorporating safety technologies by fully delegating and utilizing ODA's and driving consistency across disparate FAA organizations.

- FAA's intent to reduce direct involvement in compliance activities and invest in up-front involvement in emerging technologies is the right focus and should help resolve the need to react by initiating lengthy exceptional certification processes (i.e., special conditions).

- Significant reductions in overall cost of certification could be realized if policy around FAA Conformity Inspections were revamped to more directly rely on reputable company's Quality System, as is the case with Transport Canada and EASA. FAA Conformity is a tax U.S. OEM's pay that our European and Canadian competition avoid.

LYCOMING ENGINES division of Avco Corporation, a wholly owned subsidiary of Textron, is the largest producer of purpose-designed piston engines for general aviation and unmanned aircraft in the world. With more than 40 active airframers today, their engines power a range of designs, from the most commonly used trainers for introductory professional pilot training to the high performance aerobatic racing aircraft used in the Red Bull Air Races; from the highest production small helicopters to the largest Goodyear blimps; Lycoming's footprint has spanned the world since 1929. Some of that footprint can be easily seen first-hand on display at the Smithsonian Institution, where the largest aviation piston engine ever designed is on display at the Udvar-Hazy center. Lycoming currently employs more than 400 employees at its manufacturing facility in Williamsport, PA; directly across the river from where the Little League World Series is played.

During the past few years, beginning with Administrator Babbitt and continuing with Administrator Huerta, Lycoming has seen some very positive and progressive initiatives started by the FAA that absolutely must continue toward completion. Eventually, these initiatives will drive more extensive and long-lasting cultural changes at the FAA and are key to securing its position as a leading Civil Aviation Authority in the World. Both Lycoming (as a manufacturer) and consumers are benefitting from these initiatives, which are also driving efficiencies within the FAA. Specifically, these examples are:

1) The realignment of the Aircraft Certification Service (AIR) into a new, functionally-aligned organizational structure. This re-organization enables a more holistic effort to increase the efficiency and effectiveness of the Service. Lycoming has already seen benefits of the risk based management approach that is part and parcel with the realignment.
2) Lycoming is one of two Textron affiliated businesses participating in the FAA manufacturing oversight prototype. Also a risk-based process in the end, in this model the FAA and Lycoming have collaborated to use the most modern thinking in quality controls from industry for oversight, as opposed to the decades old procedures long abandoned by other, more efficient and competitive manufacturers. Efficiency and improved methods for ensuring airworthiness will be the end result when this prototype moves to formal adoption.
3) The Piston Aviation Fuels Initiative, an active government-industry effort to remove tetraethyl lead from the last transportation fuel - AVGAS – is also an example of progressive thinking at the FAA. In our opinion it's also an example of a government-industry funded initiative that is tackling a difficult problem. We want to thank the Committee for their active support of this effort. This program would not be moving forward without the Committee's support and we hope that Committee language included in the FAA Reauthorization bill from the last Congress regarding fleet wide certification will be included once again.

None of the examples stated above have crossed the finish line yet, and Lycoming would like to see continued support from Congress and the FAA to push them toward completion. They are examples of progressive thinking targeting meaningful objectives with the full support of industry. Lycoming would like to see the FAA continue along these lines and use these examples to drive long-term cultural change, a change which would ensure our manufacturing competitiveness world-wide.

TRU SIMULATION + TRAINING delivers innovative, total aviation training solutions to the commercial and military markets while providing superior technical support and customer service. Employing more than 530 people throughout the US (with facilities in SC, FL, KS, and CA), TRU Simulation + Training is known for its high-fidelity training devices, pilot and maintenance training, military mission training, and aviation training services and support.

One issue which has a direct impact on TRU Simulation + Training's competitiveness involves scheduling the FAA National Simulator Program (NSP) team for an Initial Evaluation of its Flight Simulation Training Devices (FSTD)s in accordance with 14 CFR Part 60.
The FAA has a process for scheduling Initial Evaluations (Form - T-025). It begins with a request by the FSTD Sponsor for a specific FAA Initial Evaluation date. TRU Simulation + Training has observed instances when the Sponsor's requested date is not available (due to prior FAA commitments) and the next available date may be weeks or months after the requested date. If the delay between a requested date and FAA availability is long, it can have substantial direct and indirect commercial financial impact. There are a couple of ways to address this issue: Request an FAA Initial Evaluation date far in advance (i.e. 180 days) of the planned FSTD Readiness date at increased risk of readiness but higher probability of securing date; or Increase FAA NSP capacity and, if necessary, budget to be more responsive (less delay) to requested dates. TRU Simulation + Training encourages Congress and the FAA to consider the second of these two options as a way to increase efficiency throughout the evaluation process.

TEXTRON SYSTEMS UNMANNED SYSTEMS employs more than 1,000 people in Maryland and Virginia, although most are associated with the company's defense products and support. The company's Shadow TUAS (a US Army program) has surpassed the one million flying hour milestone, most of which have come in overseas combat operations. The Aerosonde is also being flown in support of US military combat operations overseas, but it has a remarkable history of success as a meteorological platform flying in some of the world's harshest environments. From more than 1,000 flight hours in the Arctic and Antarctica, to history-making transoceanic and hurricane-hunting expeditions, the system is proven and reliable with more than 165,000 total flying hours.

Textron Systems Unmanned Systems has opened a Service and Support Center at the Allen C. Perkinson Airport in Blackstone, VA, which is part of the FAA's Mid Atlantic Aviation Partnership (MAAP) UAS test site. As part of its flight training mission, the facility's UAS pilots have flown nearly 1,000 flights in the NAS totaling more than 1500 hours.

While Textron Systems Unmanned Systems appreciates the progress that the FAA has made in advancing UAS flights in the NAS, the Aerosonde is a Group 2 type UAS, and therefore not covered by the current FAA regulations for UAS under 55 lbs. From an economic development perspective, there are large commercial markets in the US that are being held back due to the Part 107 limitations for Beyond Visual Line of Sight flights and aircraft weight. Industries such as Precision Agriculture, Insurance, and Oil & Gas would realize significant economic benefits from using bigger unmanned aircraft with longer ranges. Currently, the use of Group 2 type UAS are not economically viable at scale. Textron Systems Unmanned Systems hopes that Congress, industry and the FAA can continue to work toward accommodations for Group 2 type UAS flights in the NAS.