STATEMENT OF
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SUBMITTED TO THE

Committee on Transportation & Infrastructure

Subcommittee on Aviation

United States House of Representatives

Hearing:

America Builds: The State of the Advanced Air Mobility (AAM) Industry

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Chairman Nehls, Ranking Member Carson, and members of the House Transportation & Infrastructure Committee, Subcommittee on Aviation:

Thank you for holding today's hearing to review how Congress can continue supporting innovation to enhance United States leadership in aviation safety. Through passage of the FAA Reauthorization Act of 2024, and the historic investment in air traffic control (ATC) modernization, this hearing offers a unique opportunity to discuss how we maximize these developments to eliminate accidents and accelerate innovation. My testimony will focus on the historic advancements in aviation safety-enhancing technologies that are here today and ready to be integrated into the National Airspace System (NAS). These technologies will prevent aircraft accidents and create a safer NAS for all users. Reliable Robotics is proud to be producing and certifying safety-enhancing products in the United States, and we appreciate the significant bipartisan efforts to complete FAA reauthorization. Our nation's leadership role in aviation is not guaranteed, and the focus throughout the FAA reauthorization bill on accelerating advanced air mobility (AAM), including aircraft autonomy, provides a forward-looking flight plan for the Federal Aviation Administration (FAA). Thank you for your commitment to public service and for including Reliable Robotics in this hearing.

Given the timing of today's hearing, I would like to recognize the significant efforts and personal sacrifices of all government employees, including air traffic controllers and those performing safety-critical functions at the FAA during the recent government shutdown. Reliable appreciates and supports the recent bipartisan efforts to introduce the *Aviation Funding Solvency Act,* which would ensure that during any future shutdowns, the NAS continues to operate safely, and the dedicated professionals who manage our nation's airspace continue to be paid. Certainty in the operations and funding of government are crucial to companies such as Reliable, and have a direct impact on United States leadership.

Reliable Robotics was founded in 2017 to develop and bring to market aviation safety-enhancing technologies, including auto-land, auto-taxi, auto-take off, automated collision avoidance, in the air and on the ground, fully automated contingency management and full aircraft autonomy. These technologies will prevent the most common causes of fatal aviation accidents and save lives. For the commercial aviation market the Reliable Autonomy System (RAS) will enable FAA-certified remotely piloted air cargo operations which will expand service to small towns and rural communities. The RAS also includes sophisticated collision avoidance technology, made possible by our in-house developed phased array radar that will provide significant safety benefits to all NAS users.

Thanks to the FAA's dedication and the leadership of Administrator Bedford and Deputy Administrator Rocheleau, we are making significant progress on bringing certified autonomy to the Cessna 208 Caravan and will deliver transformational safety benefits in the very near future. The agency has agreed to the certification basis, detailed plans and means of compliance for our project, and members of the FAA and Reliable teams are working together on a near-daily basis. The Caravan is an 8,000-pound turboprop that is manufactured by Textron Aviation in Independence, Kansas. More than 3,000 Caravans have been delivered. This aircraft is how

small communities and businesses across America receive next-day shipments, including critical medical supplies.

In addition to our work certifying the RAS and related technologies, we operate Reliable Airlines, a FAA Part 135 commercial air carrier based in Albuquerque, New Mexico that provides daily air cargo service to small and rural communities. The airline flies six Cessna Caravans, and over the next two years will become the first commercial air carrier in the United States to operate remotely piloted cargo flights that are fully integrated into controlled airspace.

Reliable is also incredibly proud to support the Department of War in its efforts to leverage dual-use aircraft autonomy for contested logistics. In his November 10 remarks announcing significant acquisition reforms to accelerate innovation, Secretary of War Pete Hegseth said:

> "We must be able to fight in this contested environment and these reforms will ensure that we can. We'll start by elevating contested logistics as a key prioritized operational problem. We're going to work side by side with our industry partners to come up with innovative solutions through experimentation and rapid prototyping and ensure that it's properly funded."

This focus on contested logistics is also shared by our military leaders in the Indo-Pacific. In testimony before the Senate Armed Services Committee, Admiral Samuel Paparo, Commander, U.S. Indo-Pacific Command said uncrewed logistics enables him to "never send a human to do something a machine can do." We are accelerating our efforts to deliver this capability to warfighters, and given that the Caravan is in-production today, Reliable is uniquely positioned to move quickly. Recently Reliable signed a $17.4 million United States Air Force contract to operate our autonomous Cessna Caravan with the Pacific Air Forces starting next year, and we are honored to support our warfighters with this transformative contested logistics capability.

The military is focused on Reliable's aircraft autonomy technology because it has a clearly defined certification path with the FAA and integrates seamlessly into all controlled airspace. Unlike costly and exquisite military UAS, the dual-use autonomous Caravan is ready to go right now and for a fraction of the cost. With a manufacturing and supply chain that is Made in America, Reliable is ready to meet the urgent need for contested logistics capabilities. The work of this Subcommittee to use FAA reauthorization as an opportunity to bring all agency lines of business together in certifying aircraft autonomy has a direct connection to United States national security, both close to home, and in the vast Indo-Pacific region.

Implementing FAA Reauthorization: Airspace Integration and Collaboration

Since passage of the 2024 FAA reauthorization bill, Reliable has seen significant progress in how the Air Traffic Organization (ATO) and Flight Standards (FS) are collaborating on our certification project. In addition to the FAA Aircraft Certification Service (AIR) certifying equipment such as Reliable's flight computers and actuators, ATO and FS must be engaged to enable remotely piloted aircraft operations in controlled airspace. In the past, the lack of this collaboration was often seen as an impediment to the FAA leaning into innovative safety

technologies. FAA reauthorization and the detailed focus on AAM and aircraft autonomy are having an impact and allowing companies like Reliable to move faster.

While there is more work to do on full implementation, sections 206 and 207 of the reauthorization bill provided the FAA with a detailed framework to improve the integration of remotely piloted and other AAM operations into the NAS. Standing up the Airspace Modernization Office (AMO) and transferring AAM responsibilities to the FAA's aviation safety organization are bringing leadership-level focus to innovation that was previously lacking.

As these organizational changes occur at the FAA, newly created integration functions must have leadership buy-in and the resources to succeed. Previous experiences have shown that creating stand-alone FAA integration functions for innovative technologies that are disconnected from leadership and not fully resourced will not succeed, potentially delaying certification activities. With the intense global competition the United States is facing, we cannot afford to be second in the race to high-reliability aircraft autonomy, and must remain focused on continuing to build an organizational structure at the FAA that is aligned with this goal.

This is why Reliable believes that standing up the AMO in the near-term is crucial to meeting congressional intent for the office to lead on all aspects of NAS modernization, especially those focused on the integration of innovative aviation safety technologies. To achieve its full potential, the organization must have the authority and budget to acquire and develop new capabilities, beyond the existing ATO and legacy NextGen portfolios.

In addition, under section 229, the reauthorization bill creates a leadership-level steering committee that brings together the agency lines of business responsible for integrating large uncrewed aircraft systems (UAS), like the Cessna Caravan into the NAS. Part of the group's mandate is creating or updating the FAA's strategy for integrating advanced aviation technologies. To date, the FAA has provided industry stakeholders with limited updates on this committee. We respectfully request that the agency establish a more robust process to communicate the status of this committee and identify opportunities for inputs from industry.

Finally, we appreciate the FAA's recent call for nominations to launch the "Unmanned and Autonomous Flight Advisory Committee" as required by section 916 of the reauthorization bill. This committee will provide a structured forum for industry experts to work collaboratively with the FAA executives on policy and guidance that supports safe autonomous aircraft operations. Reliable was honored to volunteer our expertise for this Committee and we are hopeful that the selection process can be completed in the very near future.

Taken together, all of these FAA reauthorization provisions clearly demonstrate that Congress understands the importance of building a culture at the FAA that fully supports innovative aviation safety technologies. Reliable is fully committed to certifying our products in the United States and we appreciate this Subcommittee's continued focus on oversight and implementation that will enable our team to move faster in reducing preventable accidents.

Implementing FAA Reauthorization: Aircraft Equipage

We applaud the significant focus and investments from Congress on pressing ATC staffing needs and the technology and infrastructure that supports controllers. The level of commitment from across government and industry stakeholders to these efforts underscores how critical a modern ATC system is to United States competitiveness and national security. The technologies Reliable is certifying, especially in the area of Detect and Avoid (DAA) will prevent mid-air collisions and have safety-enhancing benefits for all airspace users. However to achieve these benefits across the NAS, we must re-focus on the equipment (i.e. equipage) of all airborne vehicles operating in the system.

Starting in 2020, all commercial aircraft and those general aviation aircraft operating in Class A, B, and C airspace and certain class E airspace are required to be equipped with Automatic Dependent Surveillance Broadcast (ADS-B) technology. ADS-B Out is a system that broadcasts an aircraft's precise location to ground stations and other aircraft equipped with an ADS-B In capability, enabling precision tracking by ATC and directly enhancing safety.

Aircraft equipped with optional ADS-B In technology also benefit from the Traffic Information Service-Broadcast (TIS-B), which enhances traffic awareness by displaying the location of nearby aircraft being tracked by ATC radar but not equipped with ADS-B Out. In addition, the Flight Information Service-Broadcast (FIS-B) provides important aeronautical information to the cockpit, including graphical weather.

Despite these safety benefits, the Government Accountability Office [found](#) that only 71% of aircraft currently registered in the U.S. were equipped with properly functioning ADS-B Out technology. This means that approximately 65,000 aircraft in the U.S. are presently unequipped. While these aircraft cannot operate in airspace with ADS-B mandates, or require specific exemptions, the lack of broader equipage limits safety benefits, especially at thousands of non-towered airports in the United States.

In addition to unequipped aircraft, other vehicles in the NAS, including unmanned free balloons, ultralights, and gliders, are not required to be ADS-B Out equipped, either because they were not certified with an electrical system or because of the flight rules they operate under. Providing low-cost opportunities to equip these vehicles with ADS-B Out or electronic conspicuity technology will enhance safety and improve airspace integration.

We thank members of this Subcommittee recognizing the importance of ADS-B Out equipage in the FAA reauthorization bill. Section 808 requires the FAA to complete a detailed study on current equipage levels and develop recommendations based on the data. In addition, section 810 requires the agency to report on its progress in creating an approval path for lower-cost and portable ADS-B Out technology. Given the impact these provisions have on aviation safety, we respectfully request that this Subcommittee engage the FAA to make certain that all applicable deadlines are met.

Beyond these important provisions, there is more that Congress can do to rapidly expand ADS-B Out equipage across the NAS. For example, funds should be appropriated to reinstate the successful ADS-B Out rebate program. Leading up to the 2020 ADS-B mandate, this program delivered rebates to 20,000 aircraft owners. Reinstating the program to equip 50,000 aircraft with ADS-B Out at an inflation-adjusted value will incentivize operators to invest in safety-enhancing technology. In addition, FAA accepted standards for low-cost and portable versions of ADS-B Out and other electronic conspicuity technologies should be prioritized to ensure that we break down barriers to the increased adoption of this technology.

In addition, Reliable welcomes efforts such as H.R. 4146, the *Pilot and Aircraft Privacy Act of 2025* that provides robust privacy protection to ensure ADS-B data is used only for air traffic and aviation safety purposes. Advancing legislation or FAA policy that offers these protections will remove a barrier to broader ADS-B adoption.

Leveraging ATC Modernization to Enhance Safety

Reliable Robotics appreciates the historic $12.5 billion investment in ATC modernization and the crucial oversight work this Subcommittee is performing. The FAA operates the busiest and most complex airspace in the world with more than 45,000 daily flights operating to over 5,000 public use airports. Highly trained and skilled controllers manage 16 million flights each year and deserve the most current and innovative safety-enhancing technologies to perform their jobs. To maintain United States leadership in aviation, there must be a renewed focus on leveraging the tremendous innovation from the AAM industry to enhance safety for all airspace users. For example, Reliable is leading efforts on industry consensus standards for DAA and helping to chart a path forward for Digital Flight. Connecting these efforts to the momentum behind ATC modernization is crucial, and something Reliable is honored to be a part of.

The initial ATC modernization investment provided through budget reconciliation is a unique opportunity to focus not only on safety-enhancing technologies available today, but also future technologies that will enable a safer ATC system which can accommodate new forms of air transportation and connect more communities across our nation. Reliable believes that bringing safety-enhancing technology and autonomy to existing aircraft like the Cessna Caravan is the quickest path to connecting more rural communities with air service, leveraging our more than 5,000 existing public-use airports, and fully integrating these capabilities into the NAS.

One of the most important things aviation stakeholders should focus on to achieve these goals is completing the development of the FAA's Airborne Collision Avoidance System X (ACAS X) technology, which is a safety-enhancing replacement for the existing Traffic Alert and Collision Avoidance System II (TCAS), and must be a top priority.

ACAS X leverages next generation collision avoidance logic and algorithms to provide improved alerting to pilots while reducing unnecessary alerts. (Nuisance alerts limit TCAS effectiveness, especially on approach to a busy airport). The technology also features variants that provide enhanced collision avoidance technology to helicopters, electric vertical take off and landing aircraft, uncrewed aircraft systems and smaller general aviation aircraft.

For aircraft operations today, and remotely piloted operations in the near future, sophisticated DAA technology will enhance safety and enable airspace integration. Making investments in the technical standards and guidance materials needed to bring this technology to market, and carefully reviewing existing equipage requirements for future collision avoidance systems is crucial to enhancing safety.

While the FAA has been funding research and development work on ACAS X since 2008, and significant progress has been made, delays continue to occur due to shifting agency priorities. Leveraging the historic focus on ATC modernization, Congress should prioritize and adequately resource the FAA ACAS X program to complete the development, standardization and implementation of this safety-enhancing technology. Specifically, the development and standardization of ACAS Xr for rotorcraft and the enhancement of ACAS Xu will enable new forms of air mobility and provide improved collision avoidance capabilities closer to airports.

Recently, the FAA published draft Technical Standard Orders (TSOs) that will implement the latest industry consensus standards on ACAS X and provide a direct certification path for DAA capabilities that leverage air-to-air radar. The Reliable team includes recognized industry leaders in radar design and development, and with these TSO updates we can accelerate our work to certify the next generation of collision avoidance technology. We thank the FAA for working across lines of business to advance these crucial TSO updates.

We also respectfully request that this Subcommittee evaluate all policy options to accelerate ACAS X adoption across aircraft already equipped with TCAS II. The improved collision avoidance algorithms that are the foundation of ACAS X can leverage existing TCAS antennas installed on aircraft. This provides a direct upgrade path that will enhance aviation safety and deliver improved collision avoidance capabilities to all NAS users, especially closer to airports and in terminal areas where TCAS performance is limited.

Upgrading NAS Communications Infrastructure

The ATC modernization investments contained in H.R. 1 also include $4.75 billion for FAA telecommunications infrastructure and systems replacement. Completion of the FAA's work to transition to a Voice over IP Communications Enterprise (VoICE) for its ATC communications infrastructure should be a top priority.

Including a requirement for a modern ground-to-ground voice communications network that provides real-time, safety-critical, party-line-enabled communication between users on the ground, such as remote pilots and ATC should be included in the FAA's system requirements. This capability will improve safety and reliability for all airspace users by leveraging high-reliability telecommunications infrastructure and reducing frequency congestion.

We respectfully request that this Subcommittee work with the FAA to make certain that detailed requirements and schedules for replacing legacy voice switches used in the enroute and terminal environments include ground-to-ground capability. This type of focus will help "future proof" the FAA's investments, advance aviation safety, and enable AAM operations to scale. The

progress Reliable has made on certifying aircraft autonomy allows us to have detailed conversations with the FAA about how our technology will be operationalized, including ATC considerations. We appreciate members of this Subcommittee holding roundtables with stakeholders to identify ATC modernization priorities and were honored to participate in recent conversations with the AAM industry.

Enabling Early AAM Operations

Reliable applauds the U.S. Department of Transportation and the FAA for recognizing the importance of aviation safety-enhancing technology and aircraft autonomy in the Advanced Air Mobility Integration Pilot Program (eIPP). The inclusion of "automation technologies that are designed to enhance safety and/or efficiency and integrate into the NAS" as a focus area of the eIPP demonstrates how these capabilities will enable AAM.

If selected, the eIPP will enable Reliable to actively collaborate with all levels of government, including state and local partners, to conduct early operations that advance airspace integration, and demonstrate a direct path to commercialization. Including leaders from across the FAA and DOT in selected eIPP operations, and establishing clear policy objectives to be achieved will be crucial to the program's success.

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Testifying before this Subcommittee is an honor and I am inspired by the dedication that each of you and your staff members have to aviation safety. The United States is closer than ever before to safety-enhancing remotely piloted aircraft operations that will transform mobility. However, this is a competitive landscape and other nations are accelerating their efforts to develop aircraft autonomy for commercial and military use cases. The FAA Reauthorization Act of 2024, and recent ATC modernization investments provide us with the tools and resources to expand United States leadership in aviation, enhance national security and provide a safer aviation system for future generations. Reliable Robotics is committed to helping secure this future and looks forward to additional opportunities to work with the Subcommittee on Aviation.