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"FAA Reauthorization: Enhancing America's Gold Standard in Aviation Safety"

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Chairman Sam Graves and Ranking Member Rick Larsen, on behalf of the General Aviation Manufacturers Association (GAMA) and its member companies, thank you for convening today's hearing which focuses on Federal Aviation Administration (FAA) reauthorization and how to reverse current trends that are tarnishing the U.S. as the gold standard in aviation safety. All aviation stakeholders need to adopt "an all-hands on deck" approach as we work together to plot and navigate the industry's future path for safety and innovation. The goal should be to ensure a robust FAA oversight process that builds on the strength of every participant in the certification and regulatory process to deliver safety and technology improvements in the most effective manner possible.

GAMA represents more than 140 of the world's leading manufacturers of general aviation airplanes and rotorcraft, engines, avionics, advanced air mobility aircraft, components, and related services and technologies. GAMA members are also providers of maintenance and repair services, fixed-based operations, pilot and maintenance training, and aircraft management companies. GAMA companies have facilities in 48 states and 27 countries. A recent economic

impact study determined that the general aviation industry supports $247 billion in economic output and 1.2 million jobs in the U.S.[1]

We want to state the deep appreciation we have for this Committee and the U.S. Congress for their commitment to improving aviation safety and fostering innovation and growth in the aviation industry. Chairman Graves and Ranking Member Larsen, we look forward to working with you, House Aviation Subcommittee Chair Garret Graves and Ranking Member Steve Cohen, and the entire membership of the full committee on these issues. We want to commend you for moving quickly on this hearing given the importance of reauthorizing the FAA by the September 30, 2023, deadline. Your timely work on reauthorizing the FAA is essential as this is a transformative time for the aviation industry and U.S. transportation system, the likes of which has not been seen since the dawn of the Jet Age.

ACSAA and Safety Management Systems

GAMA recognizes the congressional engagement and work that culminated in the December 2020 passage of the Aircraft Certification, Safety, and Accountability Act (ACSAA)[2]. In the aftermath of the Boeing 737 MAX accidents, GAMA engaged with aviation stakeholders to examine the issues raised by these accidents and find solutions to improve the safety and strength of the aviation system. Many of the provisions included in ACSAA bolstered efforts long championed by GAMA and were touted by GAMA when the legislation passed. These include increasing resources for the FAA safety workforce and oversight activities, improving safety

[1] General Aviation's Contributions to the U.S. Economy, 2018 Price Waterhouse Coopers Study on behalf of Aircraft Electronics Association (AEA), Aircraft Owners and Pilots Association (AOPA), Experimental Aircraft Association (EAA), General Aviation Manufacturers Association (GAMA), Helicopter Association International

[2] Aircraft Certification, Safety, and Accountability Act (P.L. 116-260)

decision-making for new technologies, and facilitating the FAA's international engagement in safety promotion and improvements in safety cooperation.

Of critical importance to GAMA was the ACSAA direction to FAA to promulgate a rulemaking to implement safety management systems (SMS) for manufacturers. For years, GAMA has been a strong supporter of the development of SMS standards for aviation manufacturers and maintenance organizations. We participated as the industry co-chair of the Part 21 SMS Aviation Rulemaking Committee, which submitted its recommendations to FAA in 2014. Since then, SMS standards and best practices have been developed and voluntarily implemented by manufacturers on both sides of the Atlantic Ocean, including the European Union Aviation Safety Agency's (EASA) SMS rules for manufacturers that will become applicable in March of this year. SMS improves safety and fosters a robust and continuous safety and oversight culture that permeates from top to bottom in an organization and across lines of business which positively impacts a company's management, employees, products, and services. We strongly endorse appropriate implementation of SMS standards and look forward to reviewing and commenting on the FAA's long overdue, recently proposed SMS rule as it moves to final publication.

As the Committee approaches FAA Reauthorization, GAMA believes that we can build on areas identified when the ACSAA legislation was being considered, and with it now law, ensure it is successfully implemented. Your work on FAA Reauthorization will play a crucial role in furthering the goals of ACSAA's intent by helping to address regulatory delays that are significantly hindering safety and industry innovation; strengthen the FAA's technical

capabilities and leverage industry expertise; improve U.S. engagement and activity internationally; and provide the framework for continuous improvement in the FAA's certification process.

Today, I want to outline each of these areas in more detail and show how FAA reauthorization can address them with some policy ideas for your consideration.

Regulatory Process Improvement

Unfortunately, despite the good work of thousands of dedicated FAA employees, delays in the promulgation of rulemaking, policies, and guidance have inhibited the progression of safety-enhancing aeronautical products through the certification system. Contributing to these delays is a large backlog of technical standards, policy memos, orders, and advisory circulars. Improvements are needed to the overall process to address development of safety standards such as those covered under ACSAA, cybersecurity and pilot training standards, as well as to facilitate advances in new technology. Another reminder of this backlog happened last month when the 14th anniversary of the Miracle on the Hudson was observed while the flocking bird test requirement developed in the aftermath of that accident still has not been issued as a final rule. Finally, the status of processing regulations and guidance for certification lacks the degree of transparency, including with other aviation authorities, and most importantly, the accountability within the FAA and the Department of Transportation (DOT), necessary to ensure progress in maintaining safety, security, and U.S. leadership and competitiveness.

Industry actively supports the FAA and the Department of Transportation (DOT) through the development of industry standards and participation in federal aviation rulemaking and advisory committees (ARAC). The FAA's comprehensive consultative process should be the source of envy of all and the model for gathering comments from the public, industry, and safety experts. However, the FAA and DOT internal administrative process has resulted in significant delays to promulgate and implement the results of these consultative efforts which negatively impacts this collective strength. This has slowed progress in safety and innovation and forces the FAA and industry to go through administratively burdensome and time-consuming alternative processes such as exemptions, special conditions, and issue papers. Ironically, this also impacts the FAA's global leadership, as other aviation authorities move forward with promulgating and implementing the technical safety work completed by the U.S. advisory groups. This leaves the FAA and U.S. aviation industry behind due to these procedural delays.

As an example, an FAA ARAC working group submitted recommendations to the FAA in 2016 for the establishment of aircraft system information cybersecurity and protection requirements. Pending rulemaking, cybersecurity is currently addressed by the FAA through project-by-project special conditions and issue papers whereas EASA promulgated and adopted cybersecurity requirements based on the ARAC recommendations in July 2020.

Part of the delay for the cybersecurity rule is because it is part of a larger package focused on modernizing transport airplane requirements, which has not been able to move through the rulemaking bureaucracy. Ironically, this failure has led to more delays and heavier administrative burden on the agency and industry because rather than having updated rules that

apply to all projects, every single certification project is instead subject to a series of rulemakings that consider the same special conditions, exemptions, and equivalent level of safety for each project again and again.

GAMA proposes that the FAA, with DOT participation, immediately establish an internal regulatory process review team. The team should be tasked with developing recommendations within 90 days to improve the timeliness, transparency, and performance accountability in the promulgation of rules, regulatory policies, guidance, and other materials necessary for certification and approval of new aircraft, equipment, training, and operations. The team should base these recommendations on the comprehensive review of the regulatory processes referenced earlier, including consideration of streamlining processes and eliminating redundant or unnecessary review by certain FAA and DOT offices, and others given the apolitical and technical subject matter of these regulatory, safety, and compliance materials.

The review should also consider the potential need for hiring additional FAA safety personnel and others whose focus is moving forward new and revised regulatory policy and guidance documents in a more expeditious fashion. The review team should also propose how to put in place quarterly scorecards on progress – to include data on the number of rules, policy, and guidance documents in process each quarter along with "elapsed time" from start to publish, as well as the number of documents still in the queue waiting to start the process. These quarterly scorecards could be used to measure actual progress and identify bottlenecks that need to be addressed to speed up the process moving forward. FAA should be directed to brief the

Committee on these recommendations and an action plan to implement them within 30 days of completion of the review team's work.

Looking forward to the emerging advanced air mobility (AAM) sector, it is critical that the FAA, DOT and the Office of Management and Budget complete the rulemaking they call the "powered-lift" special federal aviation regulation (SFAR) to establish the necessary regulatory requirements for commercial operations and pilot certification for electric vertical takeoff and landing (eVTOL) vehicles no later than December 2024. This is the FAA's announced completion date which is necessary to enable the expected entry into service of initial AAM aircraft. The Committee should hold the FAA to that commitment. However, as previously discussed, there are significant concerns about DOT's administrative process for rulemaking, so we also propose that Congress puts in place an interim solution that would allow for this new category of "powered-lift" aircraft (e.g., the new certification path for eVTOL) to operate commercially under specified existing regulations if the FAA fails to publish these rules by the deadline. This proposed interim path would not be used or go away once the FAA issues the final SFAR. Congress should also direct the FAA to continue activities and actions to enable certification and entry into service of other types of AAM vehicles and technologies and operations not addressed by the "powered-lift" SFAR such as simplified vehicle operations, autonomy, instrument flight rules, and airspace integration.

FAA Technical Capabilities

Tied closely to ACSAA's focus, the FAA needs a strong and capable workforce to meet the safety expectations of the flying public. According to FAA, 40% of the engineers in the FAA

Aircraft Certification Office have less than two years of FAA certification experience, which underscores the urgency of the current workforce challenge. GAMA believes an emphasis must be placed on the workforce responsible for aircraft certification at the project level to ensure the FAA has an adequate level of staff resources, including for necessary training. There have also been recent departures in key certification management positions and those must be filled with strongly capable, effective managers with deep technical expertise especially given the overall inexperience in the workforce. Given these staffing challenges, the FAA should consider whether their current work from home policy is conducive to the successful training and integration of these new employees. Additionally, the FAA should detail their efforts to ensure the current policy does not present obstacles to timely agency decision-making.

The FAA has recognized the ongoing challenge to identify and attract talent into key safety positions and has maintained an Aviation Workforce Plan in the hope of addressing these needs. However, the agency needs to continue to explore training opportunities and financial incentives as well as partnering with industry to facilitate the effectiveness of the FAA's safety workforce. This effectiveness can also be enhanced by holding FAA certification and flight standards employees accountable to agreed-upon certification and validation plans and processes.

Finding highly qualified individuals to tackle evolving technology such as flight crew interface (human factors), system safety, autonomy, propulsion methods, software, and artificial intelligence is challenging. Other government agencies have addressed similar problems by establishing partnerships with industry without ceding or compromising, in any respect, their regulatory authority. For example, the Securities and Exchange Commission (SEC) has a

Professional Accounting Fellows Program that allows the appointment of highly qualified industry individuals to positions requiring specialized or unique skills within the SEC.

In FAA reauthorization, the Committee should direct the FAA to conduct a new review of its engineering, pilot, and inspector staffing needs related to aircraft certification compliance and system safety and designee oversight activities, including a comparative industry compensation and benefits analysis to identify competitive salaries which will bolster retention and attract experienced industry engineers and inspectors to the FAA. This analysis should include consideration of special pay or hiring incentives for hard-to-fill positions such as flight test pilots, software experts, system safety engineers, and autonomous systems specialists and how personnel reforms the agency was given in the 1990s could help achieve this end.

Additionally, the Committee should provide clear authorization for the establishment of a training exchange program for the FAA and industry workforce responsible for safety certification activities. This should facilitate the FAA providing detailed technical training to company employees and designees on aviation safety regulatory requirements, policy, and guidance. The program should also authorize the provision of detailed technical training by companies, without cost, to FAA employees on company engineering, analysis, test, modeling methodologies, compliance processes, and aviation products and technologies. The FAA should also establish a demonstration fellowship program like the one at the SEC, with appropriate safeguards, permitting the appointment of highly qualified individuals from industry to temporary positions within the FAA or from FAA to industry. We believe these initiatives can provide critical understanding about new technologies and processes while recognizing the need

to ensure impartiality. The review should also consider the minimum training necessary for FAA employees who conduct examinations and tests, perform oversight, and determine technical compliance and approvals for the issuance of design approvals and certificates.

Within both these exchange programs and other areas, to be successful in its safety and oversight mission, the FAA must rely on the best available expertise and experience. This expertise is facilitated by using industry professionals, where appropriate, to conduct examinations, perform tests, determine compliance, and issue approvals and certificates. The FAA delegation program makes available to the FAA the world's leading expertise and experience across all aviation technical disciplines and with FAA and global certification processes. In addition, this also includes industry involvement in technical boards to provide expertise and knowledge to support development of necessary safety standards and the better utilization of groups like the congressionally created Safety Oversight and Certification Advisory Committee (SOCAC).

Validation and International Engagement

Aviation is a global industry and to promote safety and maintain U.S. leadership, the FAA must place a priority on working with other aviation authorities and policymakers. This includes engagement with key international partners at the International Civil Aviation Organization (ICAO) as well as ensure compliance and strengthen the effectiveness of bilateral safety agreements.

GAMA's membership faces impediments with validation in the international marketplace. Congress rightfully focused on international leadership and engagement in the 2018 FAA

Reauthorization[3], and we believe that a renewed attention is merited. The FAA certification office has created an International Validation branch to improve this activity, but the office has been slowly ramping up and lacks the full-time employees with the training, understanding and relationships necessary to effectively manage the implementation of validation programs under bilateral agreements with foreign authorities. It is critical that this branch be given the resources and tools it needs to be successful, and Congressional support will help ensure the effectiveness of bilateral agreements and validation programs essential for the global export of U.S. products.

GAMA proposes that Congress requires an annual report from the FAA evaluating type validation program performance under bilateral agreements and outlining plans and recommendations for improvement. The report should include an evaluation of the following: outgoing and incoming validation program data such as number and type of projects, timeline milestones and related metrics; analysis of the use of implementation tools such as validation workplan and risk-based involvement safety emphasis items; stakeholder perspectives and data on validation performance to include FAA aircraft certification offices, FAA International Validation Branch, bilateral authority, and industry applicants; delineation of FAA training to employees on validation and outreach conducted to improve processes; and a description of engagement with international certification authorities to maximize safety cooperation and the use of another certifying authority's approvals.

More broadly, the Committee should also direct the FAA to develop a plan, in proactive coordination with the aviation industry, to enhance U.S. aviation safety leadership and activities

[3] FAA Reauthorization Act of 2018 (P.L. 115-254)

internationally on areas including but not limited to safety enhancing technologies, automation, general aviation innovation, uncrewed aircraft systems (UAS) and AAM. This plan should consider the future direction and strategy of U.S. engagement with ICAO; how to facilitate acceptance of mandatory continuing airworthiness information (MCAI) such as airworthiness directives and other safety documents; and promotion of standards harmonization and adoption. In addition, better alignment of FAA technical assistance and training in countries or regions with U.S. certified aircraft operations and industry activity to enhance aviation safety should be considered including resolution of any issues hindering the provision of this technical assistance. Reauthorization should also make it clear that the FAA Administrator has authority to approve any international travel requests for FAA employees to support these critical activities.

Continuous Certification Improvement

GAMA also believes emphasis should be placed on examining the future enhancement and continuous improvement to FAA certification processes. When the certification process is efficient, effective, and predictable, it fosters investment in safety innovation and strengthens the U.S. aviation system and economy. The current certification process was developed in the 1960s and reflects an era when aircraft were simpler. This process takes a document-centric approach that is very transactional in nature. In this traditional approach, each regulatory requirement is mapped to a document that demonstrates compliance. Each document "shows" compliance to individual airworthiness requirements and is then reviewed for an additional check, and compliance is "found." In the 1960s, the processes did not envision the extent of computer modeling and simulation that the industry is capable of today. Nor did it envision the highly integrated complex aircraft that achieve today's safety standards.

The use of modern computer systems would allow the regulator and industry to access models in real time as the project evolves, providing a more accurate and timelier picture of the program and better matching performance demands of today's complex aircraft. Similarly, in lieu of extensive flight-testing that may pose risks without compensating benefits, tools exist today that allow these activities to be conducted through integrated labs, and computational models and simulation. However, the FAA lacks the requirements, policy, and even a vision for a future state of aircraft certification where these capabilities are leveraged to their greatest extent.

It is GAMA's recommendation that the Committee direct the FAA to contract with a federally funded research center or other qualified entity to evaluate how best to foster continuous improvements in the certification system. This should include examining model-based systems engineering techniques and new means to validate and verify aircraft designs, particularly with software. The study should also review other countries' certification processes to identify the best procedures, practices, and tools that could be adopted by the U.S. and evaluate policies to enable the increased use of simulators/integrated test facilities to reduce use of high-risk flight testing. The review should include input from FAA certificate holders and also be focused on fostering advancement of safety management systems. To further this critical review, the FAA should be directed to utilize the SOCAC to help facilitate implementation of ACSAA as well as look at other improvements for the certification process.

While I have focused my testimony to this point on these critical certification issues and regulatory improvements, the Committee also can take action on the following issues that will benefit safety and the aviation system:

Advancing Workforce Development in the Aerospace Sector

An important complement to efforts to enhance FAA's technical workforce is to attract and retain a competent and capable workforce for the aviation industry and at our member companies. Our industry is currently struggling to fill technically skilled jobs to operate, maintain, and manufacture aircraft. This workforce challenge will become even more acute as aviation evolves through innovation, which will require a workforce that is more diverse and with broader competencies and new skill sets. We appreciate the leadership shown by the Committee in this area.

The 2018 FAA reauthorization provided DOT with the authority to provide up to $10 million in grants to facilitate workforce development of pilots and maintenance providers.[4] We appreciate and thank members of this committee and the Congress for the important funding provided to date.

Our membership believes the scope and funding for these programs should be significantly expanded, particularly given our understanding that demand for this funding has been significant. We also believe the program should specifically include manufacturing workers as an area of focus to complement the prior focus on pilots and maintenance. In addition, the upcoming reauthorization should include a provision to measure results and provide feedback from participants, engage school counselors more directly in aviation workforce efforts, and facilitate training to teachers on how to start and conduct a successful aviation education program. Attention should also be paid to track how a program applicant will connect students with either

[4] FAA Reauthorization Act of 2018 (P.L. 115-254), Sec. 625

jobs or the next step in the education process (for example, from high school to college or a technical school) to sustain a pipeline of talent to the industry long-term and emphasize activities that engage, educate, and equip participants to directly feed into the aviation sector and provide the next generation of safety-focused aviation professionals.

Managing and Coordinating Spectrum Use

Our membership utilizes spectrum and supports efforts to ensure its availability to meet aviation's operational and safety requirements. There has been a clear lack of coordination amongst industry and government stakeholders to consider all impacts of spectrum use and facilitate desired outcomes. This ultimately has significantly negative impacts upon aviation and broader stakeholders, including those in the telecommunications sector seeking to deploy and utilize spectrum. While we know there are limits to how this issue can be addressed in an FAA reauthorization bill, we believe that there are still some steps that can be taken in the legislation to ensure the protection of aviation safety and enhance coordination while efforts continue more broadly.

We suggest policymakers require the FAA to coordinate with a reputable third party (such as the National Academy of Science) to report to the Committee on a strategy for protecting aviation equities in the radio spectrum. The strategy should include a process for the FAA and the aviation community to properly and thoroughly review proposed spectrum reallocations (including through auctions) to ensure that any comments, objections, or technical concerns from aviation stakeholders in any FCC proceeding are definitively assessed and addressed at a technical level to those stakeholders' satisfaction. The report should also develop an improved

spectrum process and road map that could help meet the future needs of the aviation system in a way that also supports other private sector applications that are rapidly expanding and have societal value.

Addressing Piston-Engine Aircraft Fleet Fuel

The FAA has joined with aviation and petroleum industry stakeholders to work toward transitioning to lead-free aviation fuels for piston-engine aircraft by the end of 2030. The Eliminate Aviation Gasoline Lead Emissions (EAGLE) initiative will expand and accelerate government and industry actions and investments as well as establish the necessary policies and activities to permit both new and existing general aviation aircraft to operate lead-free, without compromising aviation safety and the economic and broader public benefits of general aviation. We recognize that this is very ambitious, and each of the organizations involved is fully committed to EAGLE's success with work well underway.

The importance of this initiative to general aviation and U.S. transportation infrastructure cannot be overstated. There are more than 13,000 different airports which service a U.S. fleet of roughly 170,000 piston-engine general aviation aircraft. This year, the Environmental Protection Agency is moving forward with an endangerment finding which will trigger a process under the Clean Air Act for regulatory activity to eliminate lead emissions and ban the current 100-octane low-lead (LL). The clock is ticking, and we need to move quickly to facilitate deployment of a viable unleaded replacement fuel or fuels. The fuel or fuels should be FAA approved as meeting the safety requirements of the existing fleet of aircraft and should also be economically produced and distributed to reach the market of airports across the U.S. In the interim, the safety and

viability of general aviation depend on ensuring the continued, uninterrupted availability of 100-octane LL fuel at airports until an unleaded solution is identified and widely available. Additionally, the EAGLE initiative is currently looking at areas for potential federal investment to facilitate this transition and we would like to work with Congress as these initiatives are developed.

Aviation Funding Stability

GAMA recognizes that this Committee has supported legislation in the past to provide targeted stability for the aviation system to function in the event of a U.S. government shutdown. This initiative is important for protecting the air traffic system and critical elements of aviation safety.

Prior legislative efforts proposed enabling the FAA to tap into the Airport and Airway Trust Fund (AATF) during a lapse in appropriations, to ensure no FAA employees are furloughed or work without pay. We know from experience that shutdowns are harmful to the FAA, the economy, small business, and safety. As a result, we encourage policymakers to work together in a bipartisan manner to ensure that FAA is sufficiently authorized and funded so it can provide, without interruption, its critical safety oversight and management and operation of the air traffic control system.

Air Traffic and Strategic Plan

The FAA should also be directed to revitalize their strategic plan and vision for the modernization of the air traffic control system. The past modernization effort placed a milestone in 2025, but this should not be the end of efforts to make the National Airspace System (NAS)

safer, increase its capacity, or improve the efficiency of the NAS to realize environmental, operational, and financial benefits. The FAA needs to be challenged as part of the reauthorization to look to the future and present a clear plan.

The new plan must continue to build on past successes in deploying Performance Based Navigation (PBN), especially for departures and arrivals; shifting strategic air-to-ground communication from voice to data communications; and deploying a second-to-none surveillance infrastructure. It must also address emerging challenges including the operation of new entrants like UAS and powered-lift aircraft or AAM, as well as commercial space operations. The FAA should collaborate with stakeholders on this long-term vision and strategic plan to develop the future flight plan but also ensure near-term initiatives for sustainment and modernization within the agency's budget horizon are fully addressed.

Closing

As I have discussed in this testimony, the aviation manufacturing sector's advancement of safety and substantial contribution to the U.S. GDP depend on the FAA functioning at 100% of its capability; the FAA's ability to undertake in a timely manner the regulatory actions, approvals, and engagement to bring aircraft, engines, avionics, and other new technologies and products to the U.S. and global marketplace; the FAA's effectiveness in working with industry to strengthen its safety oversight and technical expertise; and the FAA's global leadership and engagement to foster regulatory cooperation among aviation authorities. The actions of this Committee are essential in the success of these efforts, and we appreciate your consideration of GAMA's views

on FAA reauthorization today. We look forward to working with you to ensure the FAA and the aviation industry represents the gold standard.