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“The State of General Aviation”

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Chairman Larsen, Ranking Member Graves, and Members of the Subcommittee, I want to thank you for holding this hearing on the state of general aviation. I appreciate the opportunity to provide testimony today on the vertical flight industry.

I have been involved in aviation for more than 35 years and have flown more than 70 types of aircraft, both helicopter and fixed-wing, military and civilian. I began my aviation career in the US Army, with the majority of my flying done as a special operations helicopter pilot. I later joined the Federal Aviation Administration (FAA), where I most recently served as director of general aviation safety assurance.

I now serve as president and CEO of Helicopter Association International (HAI). As the professional trade association for the international vertical flight industry, HAI represents more than 1,100 companies and over 16,000 industry professionals in more than 65 countries. Each year, HAI members safely operate more than 3,700 helicopters and remotely piloted aircraft approximately 2.9 million hours. HAI is dedicated to the promotion of vertical flight as a safe,

effective method of commerce and to the advancement of the international vertical flight community.

Throughout my career, I have been dedicated to safety and the continued development and refinement of safe aviation operations.

Serving the Public Good

The unique capabilities of vertical flight—the ability to land and take off from practically anywhere, the maneuverability, and the ability to hover or fly at very low speeds—mean we can accomplish missions that no other aircraft can. Another way we differ from fixed-wing aircraft is that our operations are conducted at lower altitudes and at slower speeds.

Every day, vertical flight serves the public good. Our members perform services including air medical, law enforcement, firefighting, heavy construction, utility patrol and maintenance, urban air mobility, and more. And our industry is expanding, bringing onto the flight deck exciting technology such as advanced air mobility (AAM) and electric vertical takeoff and landing (eVTOL) aircraft.

All over the country, from densely populated cities to oil rigs 200 miles offshore, helicopters are used to save lives, serve and protect American citizens, and support critical industries in demanding environments—and many of those missions are conducted from start to finish without the use of airports.

As just one example of how vertical flight serves the public good, consider air medicine.

Helicopter air ambulance (HAA) operators transport roughly 1,000 injured or critically ill

patients every day. Up to 50,000 of the more than 300,000 people transported by HAA operators during 2021 were transported from off-airport or unimproved areas.

Commitment to Safety

Ensuring the safety of those who fly—whether pilots, crews, or passengers—is always HAI’s top priority. HAI has worked with safety advocates worldwide to address continued safety improvements for the vertical flight industry. We worked with the US Helicopter Safety Team to produce the award-winning “56 Seconds to Live” education program, and we have a long history with our own Land & LIVE program, which encourages pilots to make precautionary landings when flight conditions deteriorate. HAI’s Safety Management System (SMS) Program allows operators and maintenance providers to elevate their safety—effectively and affordably.

A safety management system (SMS) is a formal approach to managing safety and risk, including organizational structures, accountabilities, policies, and procedures to identify and control risk. The four components of an SMS—safety policy, safety risk management, safety assurance, and safety promotion—work together in providing a safety culture. An SMS is vital to reducing the number of accidents in our industry, ensuring that every person in an organization, agency, or business understands that they are responsible for safety.

HAI’s SMS Program services allow users to verify their compliance with current and future international and domestic regulations. While not all civil aviation authorities currently require SMS programs for all operators and maintenance providers, HAI and the National Transportation Safety Board (NTSB) have recommended the development and adoption of

safety reporting systems that allow for data to be collected and analyzed and corrective action taken where necessary.

HAI has partnered with providers to offer scalable SMS solutions to member businesses. Additionally, the association supports requiring SMS programs for all operations carrying passengers for hire. HAI strongly recommends that all aviation operations, not just those carrying paying passengers, implement an SMS program. HAI is pleased to have just recently expanded the scope of its SMS Program by partnering with the Aircraft Electronics Association (AEA) to provide the latter's SMS for aircraft maintenance at no additional cost to HAI members.

Last fall, HAI announced a partnership with the Air Charter Safety Foundation to make the foundation's aviation safety action program (ASAP) available to HAI members. An ASAP helps flight operators identify and reduce possible flight safety concerns and mitigate risks. It's an easy, open, self-reporting initiative offering third-party facilitation, tracking, and recommendations for corrective action so operators can enhance their overall safety culture.

In March, HAI announced a partnership with Swiss company NGFT Solutions to offer an all-new flight risk assessment tool (FRAT) module to HAI members. This safety tool's simple question-and-answer format is designed to help operators objectively and truthfully evaluate the potential risks of an upcoming flight and any aerial work sites. Once the possible risks are identified, mitigation prompts help operators think through strategies to reduce the risk and make flying safer.

Since introducing its scalable SMS Program for helicopter operators to members last year, HAI has expanded its tool chest of safety products to include the ASAP, FRAT, and now, the Maintenance SMS Program for aviation.

One of the most significant safety projects we've undertaken is co-leading the Vertical Aviation Safety Team (VAST). I'm honored to serve as a co-advisor for this group with Miguel Marin, representing the International Civil Aviation Organization (ICAO). VAST is a public-private initiative to enhance worldwide flight-operations safety in all segments of the vertical flight industry. Team members comprise international regional safety teams; safety authorities, including civil aviation authorities (CAAs); and other industry stakeholders that work to improve global vertical flight safety. VAST's vision is a global vertical flight community with zero fatal accidents achieved through cooperation and collaboration.

In the past, international aviation safety information has tended to stay within separate organizational and national silos. VAST intends to break down these silos so that aviation safety information can flow freely globally. To achieve this end, VAST is engaging its regional safety teams to receive, integrate, harmonize, and distribute aviation safety data, programs, and recommendations worldwide. Additionally, VAST serves as an arbiter between the regional safety teams to ensure collaboration on and coordination of these initiatives, as well as the sharing of final output.

International regional safety teams, which consist of national and industry stakeholders, are formed to improve the safety of civil vertical takeoff and landing (VTOL) operations in their respective national airspace systems.

In addition to national civil aviation authorities such as the US FAA and the CAAs of the United Kingdom, Sudan, and Colombia, aviation safety authorities include jurisdictional agencies, such as ICAO and the European Union Aviation Safety Agency (EASA), and nationally recognized safety organizations such as the NTSB in the United States, the Transportation Safety Board of Canada, and the Transport Accident Investigation Commission in New Zealand.

Other industry stakeholders include original equipment manufacturers (OEMs), training providers, aircraft operators, service providers, and vertical flight industry associations such as HAI, the European Helicopter Association, and the Association for Uncrewed Vehicle Systems International.

VAST has five chief goals:

1. Establish the organization as the world's most trusted source for vertical flight safety information and resources
2. Establish working groups to represent key segments and issues relevant to the global VTOL industry
3. Formalize leadership positions, working groups, and advisory roles for participating organizations and individuals
4. Identify, collect, harmonize, and deliver centralized access to safety information and resources from participating stakeholder entities
5. Provide and coordinate a forum where regional safety teams, safety authorities, and other industry stakeholders can work together on vertical flight safety issues.

Safety is at the heart of everything we do at HAI. Not only are our safety programs meant for our members operating helicopters today; our programs are designed for future aircraft, as well.

Technology

The vertical flight industry offers an invaluable societal benefit that AAM aircraft will only amplify once the necessary regulatory framework is implemented. HAI is excited to see the work our manufacturers are doing to develop the aircraft of tomorrow while they're building the helicopters that are conducting those futuristic missions today. Engine OEMs are working to develop powerplants for these aircraft, and there are a variety of companies looking at alternative fuel sources, from batteries to hydrogen.

HAI has been an early supporter of AAM and UAS (uncrewed aircraft system) technology and sees them as a new business opportunity for the helicopter industry. Our members have been and will remain heavily engaged in these operations in the coming years. Many have already established UAS business lines within their organizations.

Our members have been operating vertical flight missions for nearly 75 years. AAM is a new vertical lift mode of transportation, and it makes complete sense for our members to embrace and use this new technology. We strongly support the development, certification, and safe integration of AAM aircraft into the National Airspace System (NAS).

AAM can expand the unique capabilities of vertical flight and benefit many people. The FAA must have an effective yet flexible certification system that not only ensures flight safety but also enables the swift recognition and adoption of new technologies while facilitating a user-

friendly process that is economically viable. Investment in AAM infrastructure today along with improvements in the certification process will ensure that the United States is prepared to meet the transportation needs of tomorrow as well as remain a world leader in aviation.

Airspace

Today, helicopters are performing many urban air mobility (UAM) missions that future AAM aircraft will do. To evaluate future roadblocks for AAM, we must investigate current pinch points for vertical flight in terms of access to airspace and ground infrastructure. Airspace congestion resulting in reduced access to low-level instrument flight rules (IFR) routes is of serious concern for current helicopter operators. So, too, is access to heliports.

Multimodal transportation access points are vital for the future success of AAM. Using various forms of transportation, passengers must be able to easily access heliports or vertiports to, in turn, ferry them to the larger hubs of the airlines. Reducing access points either on the ground or in the air will have a detrimental effect on the success of AAM.

Additionally, not only AAM technology but all new aviation devices must be safely integrated into the NAS. Helicopter pilots use instruments, radios, and their eyes to avoid other aircraft, and remotely piloted aircraft or completely autonomous aircraft must have the capacity to detect aircraft operating around them. Our members' flight profiles and the missions they fly place them all over the nation in varied environments at various altitudes. From corporate helicopters flying out of high-density urban metroplexes to remote heli-logging operations, utility repair work, or firefighting missions, helicopters perform operations in a variety of situations and locations.

UASs must be able to avoid other aircraft, both crewed and uncrewed, while facilitating the ability of those aircraft to see, sense, and avoid the UASs. Additionally, all aircraft in the NAS need to conform with the fundamental principles of “right of way” and not deflect all responsibility and liability to crewed operators. Altering the right-of-way hierarchy is not, and never should be, a mitigation for an uncrewed system’s inability to detect other aircraft in the airspace.

Community Compatibility

Whether it is the helicopter of today or tomorrow’s AAM, vertical flight operations should always consider our responsibility for community compatibility. HAI’s Fly Neighborly initiative is a voluntary noise reduction program that seeks to create better relationships between communities and helicopter operators by establishing noise mitigation techniques and increasing effective communication. Just flying safely and in compliance with regulations is not enough. We must also Fly Neighborly; it is in the best interest of everyone.

As part of HAI’s work on Fly Neighborly, we also work with other stakeholders to help mitigate helicopter noise. On Jun. 24, HAI, partnering with the Eastern Region Helicopter Council (ERHC), introduced a new helicopter noise initiative for the Washington, D.C., metro area. We established a helicopter noise complaint system for individuals in and around the region to share their concerns. HAI and ERHC aim to work with the D.C. community to review and process noise complaints and use this data to help mitigate helicopter noise. We understand that affected residents desire immediate answers to their noise questions and complaints. Using available flight tracking data, the system will accurately identify likely aircraft generating

concerns and all associated data. The new initiative focuses on airport and aircraft noise complaint–management solutions, noise abatement–procedure compliance monitoring, and related government and community affairs.

Sustainability and Environment

HAI is dedicated to reducing greenhouse gas (GHG) emissions from aircraft, and the development and use of sustainable aviation fuel (SAF) offers a promising opportunity to reduce the aviation sector’s environmental footprint. SAF remains a more expensive option than conventional jet fuel and is not yet commercially viable at scale in the current market. Government incentives are needed to boost the commercial viability of SAF and establish the United States as a global leader in aviation sustainability. Imposing a long-term performance based SAF tax credit will accelerate production and use of SAF across the general aviation industry. Incentivizing greener alternatives to conventional jet fuel and investing in sustainable aviation initiatives are essential steps in building the aviation industry of tomorrow.

Another important environmental issue is the transition to lead-free aviation fuel. In February, HAI joined leaders of aviation and petroleum groups in committing to an initiative laying out a clear plan to transition piston-engine aircraft to lead-free aviation fuels by the end of 2030. The Eliminate Aviation Gasoline Lead Emissions (EAGLE) initiative calls for an industry and government partnership to expand and accelerate the actions and policies necessary for a viable high-octane unleaded replacement for the current 100 octane low-lead aviation gasoline (100LL), without compromising the existing US transportation infrastructure system, aviation safety, and the economic and broader public benefits of general aviation.

This initiative is the right thing to do for the environment and the economic health of our industry. HAI is committed to this partnership and applauds the broad public-private partnership that has come together enabling industry and government to accelerate a solution. The vertical flight industry is eager to work with all stakeholders to advance the EAGLE initiative.

National Parks Overflights Advisory Group (NPOAG)

HAI has grave concern with how the FAA and the National Park Service (NPS) is handling the implementation of the air tour management plans (ATMPs) for the 23 eligible national parks. Our concerns relate specifically to the transparency of the completion process, operational safety, and economic considerations of the plan.

On May 1, 2020, the US Court of Appeals for the DC Circuit ordered the FAA and the NPS to file a proposed plan within 120 days for bringing all 23 eligible parks into compliance with the National Parks Air Tour Management Act of 2000 (NPATMA) within two years and submit quarterly updates on the two agencies' progress.

On Aug. 31, 2020, the FAA and the NPS submitted the proposed plan to the Court. The plan outlines the approach and steps the agencies will take to meet the Court order and comply with the NPATMA. Throughout the plan, the actions reflect coordination of government-to-government Tribal consultation and other interagency coordination but excludes the National Parks Overflights Advisory Group (NPOAG).

The plan makes no mention of the NPOAG's role. The NPOAG was established in the NPATMA to provide advice and counsel with respect to commercial air tour operations over and near

national parks. The FAA's proposed schedule to accomplish the plan, with its heavy focus on interagency coordination while omitting the NPOAG, creates a concern regarding the transparency of the overall process.

Excluding critical stakeholders like the NPOAG in this process resulted in plans for the initial parks that contain clear safety concerns. The plans for the first parks lack consideration of very basic aeronautical safety factors. If this flawed process produces such results for parks with less traffic, we have significant concerns regarding the plans yet to be released for the other parks with more complex airspace activity.

While it is the Court that imposed the two-year deadline on the FAA, the agency cannot sacrifice its first priority of maintaining safety in the NAS. Rushing to complete the project, without the NPOAG's input on safety considerations, has already produce shortcomings that will compromise the NAS. While the proposed plan allows for notice and comment, not involving the NPOAG to help develop the best framework possible for the plan is extraordinarily problematic.

The draft plan severely curtails the economic viability of the air tour industry by limiting flight allocations. To our knowledge, there have been no economic studies undertaken to determine the impact on the industry and broader aviation community. Air tours offer a low-impact approach to experiencing the beauty of our nation's national parks. Additionally, air tours provide those with disabilities an opportunity to interact with the parks in ways they could not otherwise. Cutting air tours without regard to economic considerations will cripple a fragile industry trying to recover from the pandemic.

Congress established its vision and intent for air tours over the nation's parks by enacting the NPATMA. This legislation was a product of the consensus work performed and recommendations made by the National Parks Overflights Working Group. Congress and stakeholders, working together, created the road map for the development of the ATMPs, which is now being ignored in the rush to complete all the plans within two years.

It is clear from the plans already introduced that the overall strategy is to cut back flights to such a degree that it is no longer economically feasible for air tour companies to stay in business. This shortsighted process ignores the opportunities that exciting new technologies that promise quieter flights, such as electrical aircraft, can deliver. By removing airspace access for today's aircraft, the FAA and NPS are removing airspace access for future generations using quieter technologies.

This process has shut out the voice of safety experts and excluded important economic considerations. I strongly urge the FAA and the NPS to immediately engage with the NPOAG on the development of these plans. The industry is willing to work with other stakeholders, the FAA, and the NPS to develop a plan that benefits all involved.

Workforce Development

Due to pandemic-related economic disruptions, many seasoned pilots and technicians retired early over the past year. This has only exacerbated the shortage of the skilled personnel the industry needs to operate safely and efficiently. Congress, the FAA, and industry must stay focused and recognize that developing the next generation of pilots and maintenance technicians requires a long-term commitment.

We appreciate Congress setting up the Aviation Workforce Development Grants programs in the 2018 Reauthorization Act and likewise express gratitude for the funds made available for the programs. The grants have encouraged collaboration between schools, aviation companies, unions, and government to find new solutions to overcome the existing skills gap and help more Americans pursue aviation careers. That, in turn, will contribute to the long-term efficiency of the nation's aviation system, the industry's global competitiveness, and the nation's overall economic health. HAI strongly encourages continued support of the grants programs.

HAI also encourages congressional support for innovative state programs that enable outreach and education to students to get started in the aviation industry. The Utah Rotor Pathway Program (URPP) serves as a first-in-the-nation model for education and training programs preparing high school students for STEM careers in rotary-wing aviation. We provide students with an avenue to earn college credits and learn skills specific to rotary-wing aviation while participating in technical classes and hands-on learning experiences at the secondary-school level.

The URPP connects rotorcraft industry professionals with high schools, flight schools, and universities to offer benefits such as mentoring, internships, and job interviews upon students' completion of their rotary-wing aviation programs. The URPP also connects the next generation of helicopter pilots and mechanics with the exciting world of vertical flight. HAI is working to expand this program into other states.

5G

On June 17, the FAA identified a path forward for part 121 aircraft operating in the current 5G environment. Airlines, manufacturers, and suppliers have been urged to retrofit radio altimeters on the current US fleet by July of 2023. As part of the arrangement, Verizon and AT&T have agreed to extend some of the voluntary mitigations that have been in place since 5G was deployed in January of this year. These mitigations will expire in July of 2023, as new wireless providers enter the 5G market. Part 121 aircraft without the necessary filter retrofits or radio altimeters replacements will lose access at airports around the country.

As mentioned in the House Transportation and Infrastructure Subcommittee’s hearing on “5G Deployment and Aviation Safety” earlier this year, FAA has placed primary focus on developing near-term solutions for the airlines because of the generally higher level of criticality on certain part 121 operations. Shortly after 5G was deployed, FAA partially granted HAI’s petition for exemption which allow air ambulance operators to use safety-enhancing night vision goggles in areas where the aircraft’s radio altimeter could be unreliable due to 5G C-band interference as identified by NOTAMs. Operators must comply with specific conditions and limitations. Similar to aircraft operating under part 121, helicopters can perform day and night operations that do not require the use of a radio altimeter. The FAA has also made progress on alternative means of compliance (AMOCs) for rotorcraft, but much work remains to be done to ensure all rotorcraft operations can safely continue unimpeded by 5G-related restrictions.

HAI is pleased to participate in the FAA’s regularly occurring 5G Roundtable discussions, which bring together aviation and telecommunications stakeholders with the intended purpose of identifying and implementing solutions that lead to a safe coexistence. HAI also appreciates the

ability to participate in weekly, FAA-hosted meetings that are focused exclusively on solutions for rotorcraft.

It is HAI's understanding that the FAA has received a low number of verified 5G incident reports from helicopter operators. Nevertheless, we understand that new towers will go live each month and that new entrants will also add to the complexity of an already difficult situation. We remain committed to working with this committee, FAA, FCC, as well as other aviation and telecommunications stakeholders to identify workable solutions that maintain safety and minimize disruptions to the national airspace system. Respectfully, we request the members of this esteemed committee consider reforms to spectrum management policy that provide enhanced transparency, efficiency, and interagency coordination on long-term solutions that do not require multiple costly retrofits or replacements.

While the US rotorcraft fleet has not been tasked with meeting the FAA's ambitious retrofit schedule for part 121 aircraft, new minimum operational performance standards (MOPS) for radio altimeters are being considered that could have significant implications for helicopters. HAI firmly believes it is imperative for FAA to consider performance-based solutions that account for the broad range of rotorcraft mission and safety profiles. As FAA continues to develop near- and long-term solutions and requirements to mitigate the safety concerns related to 5G interference with radio altimeters, there must be complete transparency, ample timing for industry adoption, and sufficient resources for implementation.

Conclusion

I thank the committee, again, for the opportunity to provide the perspective of the vertical flight industry and look forward to continuing our work together on these important issues. I welcome any questions.