COMMENTS OF THE GENERAL AVIATION INDUSTRY ASSOCIATIONS REGARDING THE EPA'S PROPOSED FINDING REGARDING LEAD IN AVIATION GASOLINE

Dkt. No. EPA-HQ-OAR-2022-0389

January 17, 2023

==========

The General Aviation Industry Associations comprising the Aircraft Owners and Pilots Association (AOPA), Experimental Aircraft Association (EAA), General Aviation Manufacturers Association (GAMA), Helicopter Association International (HAI), National Air Transportation Association (NATA), National Business Aviation Association (NBAA) and the American Petroleum Institute (API), hereinafter referred to as "the Associations"[1] respectfully submit the following comments on the Environmental Protection Agency's (EPA) proposed finding that lead emissions associated with the use of aviation gasoline[2] "cause or contribute to air pollution which may reasonably be anticipated to endanger public health or welfare."[3] The Associations represent general aviation aircraft owners, operators, and manufacturers, and the producers, refiners, and distributors of aviation gasoline that would be directly affected by any finding made by the EPA with respect to lead emissions from piston-engine aircraft, corresponding aircraft emissions standards, and related changes to the formulation of aviation gasoline.

The general aviation industry and related sectors support an estimated $247 billion in economic output and 1.2 million jobs in the United States,[4] and the sector is recovering. It provides a lifeline to many towns across the country and provides critical services in times of natural disasters such as hurricanes, flooding, and wildfires, and provided support for the nation's battle against COVID-19.

---

[1] Appendix A contains additional information about the Associations.
[2] For purposes of these comments, the term "aviation gasoline" refers to gasoline that powers piston-engine aircraft.
[3] *Proposed Finding that Lead Emissions from Aircraft Engines That Operate on Leaded Fuel Cause or Contribute to Air Pollution That May Reasonably Be Anticipated to Endanger Public Health and Welfare,* 87 Fed. Reg. 62753, 62754 (Oct. 17, 2022).
[4] PriceWaterhouseCoopers, *Contribution of General Aviation to the US Economy in 2018* (2019), *at* https://gama.aero/wp-content/uploads/General_Aviation_s_Contribution_to_the_US_Economy_FINAL_20200219.pdf.

Our nation is served by more than 5,000 public-use airports, more than 13,000 private airports and airstrips, and 5,500 heliports across the country. General aviation is an integral part of the transportation system that supports communities across the United States, especially in rural areas, by providing essential air travel options to businesses and the public, forging links between thousands of companies, their suppliers, and their customers. General aviation operations include emergency medical personnel and supplies delivery, disaster relief and recovery, search and rescue, agricultural aviation activities, recreational pursuits, and more. General aviation also protects our environment by providing the most efficient and cost-effective way to conduct such activities as wildlife surveys, aerial mapping of wetlands, and detecting pipeline leaks.

COMMENTS

I. BACKGROUND

A. THE PROPOSAL'S LEGAL AUTHORITY

On October 12, 2022, the EPA released for comment its "*Proposed Finding That Lead Emissions From Aircraft Engines That Operate on Leaded Fuel Cause or Contribute to Air Pollution That May Reasonably Be Anticipated To Endanger Public Health and Welfare*" (the "Proposal"). 87 Fed. Reg. 62753 (Oct. 17, 2023). If finalized, the Proposal would cover the majority of piston-engine aircraft operating in the United States.[5]

The Proposal was issued under Section 231(a) of the Clean Air Act, 42 U.S.C. §§ 7401 *et seq.*, ("CAA"), which allows the EPA to:

> from time to time, issue proposed emission standards applicable to the emission of any air pollutant from any class or classes of aircraft engines which in his judgment causes, or contributes to, air pollution which may reasonably be anticipated to endanger public health or welfare.

42 U.S.C. § 7571(a)(2)(A).

[5] EPA previously considered this issue in its 2010 "Advance Notice of Proposed Rulemaking and Related Materials on Lead Emissions From Piston-Engine Aircraft Using Leaded Aviation Gasoline" ("ANPR"). 75 Fed. Reg. 22440 (April 28, 2010).

Pursuant to the CAA, EPA has established National Ambient Air Quality Standards (NAAQS) for lead. 42 U.S.C. § § 7408; 7409. In 2016, EPA reviewed the lead NAAQS and adopted a rule maintaining the prior lead NAAQS standards, which were last set (and dramatically tightened) in 2008. 81 Fed. Reg. 71906 (October 16, 2016). In doing so, EPA noted that "[t]he CAA does not require [EPA] to establish a primary NAAQS at a zero-risk level or at background concentration levels . . . but rather at a level that reduces risk sufficiently so as to protect public health with an adequate margin of safety." *Id.* at 71907. The 2008 NAAQS tightened the standard by an order of magnitude, setting both the primary and secondary lead NAAQS at 0.15 micrograms per cubic meter in total suspended particles, measured as a 3-month average. 40 CFR § 50.16. During their adoption, EPA determined that these lead NAAQS levels reduce risk sufficiently to protect human health, with an adequate margin of safety, as required by the Clean Air Act. 73 Fed. Reg. 66964 (Nov. 12, 2008); 42 U.S. Code § 7409(b). Following the adoption of the more-stringent 2008 lead NAAQS, during the period between 2010 and 2020, EPA notes that "the national 3-month average concentrations of lead improved 86 percent."[6] At present, the vast majority of the country has attained the stringent lead NAAQS set in 2008, with a few limited exceptions.[7]

The Proposal discusses the two-part inquiry under section 231(a) of the Clean Air Act. 42 U.S.C. § 7571(a). The first step requires EPA to determine that air pollution—and a specific air pollutant—reasonably endangers public health or welfare. The second step is for EPA to make a finding that a particular class or classes of aircraft engines emits a pollutant that causes or contributes to that air pollution. In the Proposal, EPA addresses both the "endangerment" and "cause or contribute" prongs of the Clean Air Act. Ultimately, EPA proposes to find that (i) "lead air pollution may reasonably be anticipated to endanger the public health and welfare" and that (ii) engine emissions of lead from certain piston-engine aircraft operating with leaded fuel "cause or contribute" to that air pollution. Any final action by EPA on the Proposal must take into account the requirements of section 231, consider all relevant information, and take into

[6] https://www.epa.gov/lead-designations.
[7] https://www.epa.gov/lead-designations/map-nonattainment-areas-2008-lead-standards

account the overall regulatory landscape that includes both the lead NAAQS and FAA oversight of aircraft certification, including fuel use. In addition, the transition to lead-free fuels should occur within the confines of aviation safety.

B. EPA and FAA Regulatory Collaboration in Aviation Fuel Use and Safety

The EPA and FAA work together, in consultation, in relation to aircraft engine fuel regulation. The CAA expressly recognizes the importance of safety and efficiency with respect to aircraft operation, and roles of each agency. Once EPA has made both an endangerment and cause or contribute findings under Section 231(a)(2)(A), it may proceed with any related aircraft engine emissions standards only in consultation with the FAA. 42 U.S. C. § 7571(a)(2)(b)(i). And EPA cannot adopt or alter aircraft engine emission standards if that action would "significantly increase noise" or "adversely affect safety." 42 U.S. C. § 7571(a)(2)(b)(ii). These CAA requirements are intended to involve the FAA in any standards-setting process, and contain a clear mandate to focus on aircraft safety when issuing any emissions standards for aircraft engines.[8]

The FAA has exclusive jurisdiction over aircraft fuel under 49 U.S.C. § 44714 ("Aviation fuel standards"), which authorizes the FAA Administrator to prescribe -:

> (1) standards for the composition or chemical or physical properties of an aircraft fuel or fuel additive to control or eliminate aircraft emissions the Administrator of the Environmental Protection Agency decides under section 231 of the Clean Air Act (42 U.S.C. 7571) endanger the public health or welfare; and
>
> (2) regulations providing for carrying out and enforcing those standards.

49 U.S.C. § 44714.

As the agency responsible for overseeing aircraft and aircraft engine safety, the FAA has an important role to play with respect to aircraft fuels and emissions standards related to the

[8] As a backstop, the CAA further allows the President to disapprove any regulation adopted under Section 231 if such regulation would "create hazards to aircraft safety," based on a related finding by the Secretary of Transportation. 42 U.S. Code § 7571(c).

use of those fuels. The FAA manages aircraft safety through a system of type certificates, which cover a range of important airworthiness and safety items, including both noise and fuel. In short, a type certificate covers and indicates FAA approval of the aircraft's design and technical features, including which fuel that aircraft may use. For example, an aircraft not approved for 94UL fuel may not use it, and misfuelling an aircraft can result in significant performance and catastrophic safety issues. Once the EPA sets the aircraft engine emissions standard, FAA would then be required to prescribe regulations to ensure compliance with these emissions standards under CAA § 232 and trigger the FAA's statutory mandate under 49 U.S.C. § 44714 to prescribe standards for the composition or chemical or physical properties of aircraft fuel or fuel additive to control or eliminate aircraft emissions. Notably, the CAA's section 232 also gives the FAA—and not the EPA—primary authority for *enforcing* aircraft engine emissions standards EPA adopted under CAA Section 231. 42 U.S. Code § 7572(a).

II. THE GENERAL AVIATION COMMUNITY SUPPORTS REMOVAL OF LEAD FROM AVIATION GASOLINE

The general aviation industry remains firm in our collective support to remove lead from aviation gasoline and our position that any transition from leaded to unleaded gasoline must be effectuated with safety as the highest priority. The industry and the FAA have been working on this unleaded transition for many years. Congress has allocated more than $57 million to test and evaluate candidate fuels through the Piston Aviation Fuels Initiative (PAFI) program.

In 2010, the General Aviation Coalition of associations submitted comments on the importance of scientific data being available for EPA to make a determination and propose whether an endangerment finding with respect to lead emissions was reasonable based on what was then available.[9] We believe that it is in the public interest to eliminate lead from aviation gasoline. In our 2010 comments, we advised the EPA that "[t]here is no demonstrated unleaded replacement for 100LL avgas that meets the safety and operational requirements of

[9] *Comments of the General Aviation Avgas Coalition on the Advance Notice of Proposed Rulemaking on Lead Emissions from Piston-Engine Aircraft Using Leaded Aviation Gasoline,* Dkt. No. EPA-HQ-OAR-2007-0294.

the entire fleet."[10] In the intervening years, work toward development of such an unleaded replacement that meets the safety performance needs of the U.S. fleet of piston aircraft and FAA regulatory safety requirements has continued apace. And now, in 2022, potential high-octane unleaded replacement fuels are coming into frame, strongly supported by a collaborative industry/government initiative not only to facilitate development and deployment of a safe and market viable unleaded aviation fuel but also to eliminate lead emissions by December 31, 2030.

In an exhaustive 2021 report to the FAA on options for reducing aviation lead emissions, the National Academies of Sciences, Engineering, and Medicine recommended that the "FAA should continue to collaborate with the [general aviation] industry, aircraft users, airports, and fuel suppliers in the search for and deployment of an acceptable and universally usable unleaded replacement fuel," urging a "holistic process" to develop and deploy such a fuel.[11] Only through a government-industry effort that would involve the private sector, the FAA, and Congress could the aviation system eliminate lead emissions.

We agree with that conclusion, and accordingly the FAA, the Coalition, and other aviation stakeholders have launched a public-private initiative titled "General Aviation Commitment to Eliminate Aviation Gasoline Lead Emissions," or "EAGLE,"[12] which intends to achieve its firm goal—elimination of lead emissions from general aviation aircraft by the end of 2030, or sooner if possible — through development and deployment of a viable high-octane unleaded replacement aviation gasoline that can be safely operated by the U.S. fleet with minimum impact. EAGLE's work continues apace, and more information on the initiative is available at www.faa.gov/unleaded.

[10] *Id.* at 5.
[11] *Options for Reducing Lead Emissions from Piston-Engine Aircraft,* Nat'l Academies of Sciences, Engineering, and Medicine (2021), recs. 6.1-6.2, *at* https://doi.org/10.17226/26050/.
[12] Appendix B provides an overview of the EAGLE initiative framework.

III. PROGRESS TOWARD AN UNLEADED FUEL

Four high-octane unleaded fuels are currently in development and are moving toward FAA approval/authorization and market deployment. Each of these fuels attempts to address the critical safety need for high-octane aviation fuel using differing chemical approaches. As with all unleaded fuel technologies explored to date, each has unique advantages and disadvantages relative to one another. Aircraft and aircraft engines are type certificated by FAA as meeting all the applicable safety requirements for design, airworthiness, and operation. Each type certificated aircraft and engine, by make/model, must be FAA approved to operate on any new or replacement fuel to ensure their continued operational safety. There are two paths available to obtain FAA approval for the use of a new fuel: (1) the traditional FAA aircraft type certification process and (2) the FAA aviation fuel fleet authorization process established by Congress in sec. 565 of the FAA Reauthorization Act of 2018[13]. The second provides a pathway for fuel developers that are not traditional aviation organizations and as such do not have aviation experience and personnel to complete an FAA aircraft type certification program as prescribed in the Federal Aviation Regulations' type certification process under 14 C.F.R. part 21. These two pathways that allow FAA to approve engines and aircraft to use a new unleaded fuel amounts to significant progress toward deploying a potential replacement for 100LL. It also marks the beginning of the complex work that remains to identify a commercial pathway for production and distribution necessary for the fuel to be viable in the marketplace and become available at airports across the country for purchase and use by aircraft operators.

Two fuel developers are pursuing traditional FAA type certification approval of a high-octane unleaded fuel: General Aviation Modifications Inc. (GAMI) and Swift Fuels Inc. On September 1, 2022, the FAA issued an Approved Model List Supplemental Type Certificate (AML STC) to GAMI for G100UL unleaded avgas. This AML STC represents the first FAA approval for the use of a high-octane unleaded fuel for general aviation aircraft and moves the industry a step closer to an unleaded future. The GAMI AML-STC currently includes a very broad range of type-certificated piston-powered fixed-wing airplanes and engines and the company is

[13] Pub. L. No. 115-254 (2018).

currently working with FAA to expand the approval to include type-certificated piston-powered rotorcraft. According to its website, GAMI anticipates that the availability of G100UL will expand nationally over a period of a few years as supply chain and associated infrastructure can be put in place and that 2023 will be a year of logistics to ramp up production and distribution to airports with G100UL avgas appearing more widely in 2024.[14]

Swift currently produces and delivers a 94-octane unleaded aviation fuel to a limited but growing number of airports for those aircraft that can safely use a lower octane fuel. Swift holds an AML-STC FAA approval for UL94 fuel which each owner-operator can purchase and install on their individual eligible aircraft and engines allowing them to use UL94. Swift is also developing a high-octane unleaded fuel and has made application to the FAA and working through the type certification process to obtain an AML-STC for eligible aircraft and engines. Swift has publicly stated that it hopes to achieve FAA AML-STC approval and have a 100-octane unleaded fuel ready to deploy for North America by the end of 2024. The scope of what portion of the U.S. fleet of piston aircraft and engines that may be covered by the initial AML-STC is not publicly known.

Partnerships between fuel producers Afton Chemical/Phillips 66 and LyondellBasell/VP Racing are each developing a high-octane unleaded fuel as potential replacements for 100LL. Both partnerships are working through the FAA fleet authorization process and are participating in the PAFI collaborative industry/government testing and evaluation program to develop the data necessary to support ASTM consensus production specification and FAA fleet authorization of their fuels. Both fuels have completed multiple phases of the PAFI test and evaluation program and are expected to enter the final stage of full-scale engine and aircraft testing in Q1-2023. With successful demonstration of applicable safety and performance requirements, FAA fleet authorization is expected in 2024/2025.

[14] "What is GAMI's G100UL unleaded avgas?" https://www.g100ul.com/ and "How long will it take in order for G100UL to be widely or routinely available?" https://www.g100ul.com/faq.html. 1/13/2023

IV. THE TRANSITION TO A FLEETWIDE UNLEADED FUEL MUST BE HARMONIZED AT THE FEDERAL LEVEL, NOT STATE BY STATE OR COUNTY BY COUNTY

As EPA continues to determine whether to finalize the Proposal, and, recognizing that no level of lead in the bloodstream above zero is free of all risk, it is worth reiterating that the vast majority of the United States has attained the stringent lead NAAQS, which are set to protect human health with an "adequate margin of safety."[15] It is incumbent upon EPA not to come to premature conclusions and to follow the science and applicable statutory requirements during its consideration of the Proposal, and with respect to any related actions. EPA must also ensure a safe and orderly transition to unleaded aviation fuels. Many of the 220,000 piston engine airplanes and rotorcraft in the current fleet require high-octane 100LL fuel to fly safely. Putting the wrong fuel into an aircraft can cause catastrophic engine failure. Aircraft needing higher octane fuel to fly safely include those carrying out important missions -- such as search and rescue, disaster relief, and law enforcement. We must ensure that 100LL remains available at our nation's airports until an appropriate transition to a viable replacement.

UL 94 does not satisfy the octane requirements of high-performance engines and therefore is only approved for use in approximately 70% of the nation's fleet; it thus cannot be considered a 100% viable commercially available replacement for 100LL as it does not meet the operational requirements, nor is it approved for the entire spark-ignition piston engine fleet. As it is today with 100LL, the industry should expect multiple refinement and blending locations across the country to best support general aviation airports and the piston aircraft fleet. As this is not the case today, the current supply could result in adverse cost and supply impacts.

We have set an aggressive deadline for removing lead from aviation gasoline—and an equally aggressive work schedule to meet that deadline—because the general aviation industry recognizes the imperative for deployment of a replacement unleaded gasoline at the *national* level. Some well-intentioned but ill-advised local attempts to prematurely mandate removal of 100LL aviation gasoline threaten, at minimum, aviation safety and the success of collaborative

[15] The CDC also maintains a standard and uses a blood lead level (BLL) or blood lead reference value (BLRV) of 3.5 micrograms per deciliter to identify children with BLLs that are higher than most children.

FAA and industry initiative for a transition to an unleaded replacement that supports our national transportation system.

In 2022, there were 19,753 airports across the United States; 4,835 were public airports.[16] And already the sponsor of two of them—Santa Clara County, California—has attempted to arrogate to itself the authority to ban leaded aviation gasoline.[17] Similar efforts in other municipalities are likely, notwithstanding the EPA's and the FAA's strong field and express preemption with respect to regulation of clean air and aviation safety, respectively, as well as preemptive Federal requirements regarding the operation of airports and prohibition on discrimination among users.[18] The national airport system is based on a statutory scheme in which Congress has required the FAA to develop a national plan of integrated airport systems "to provide a safe, efficient, and *integrated* system of public-use airports adequate to meet the needs of civil aeronautics [and] to meet . . . national defense requirements."[19] Moreover, by statute, the FAA Administrator is charged with development and maintenance of a Federal aviation system.[20]

Our airport infrastructure is Federal in nature because aircraft cross county and State lines in flight, and pilots must be assured that, in the event of an unplanned or emergency landing at the nearest suitable airport, the diversion airport has not imposed a premature local restriction on the dispensation of leaded aviation fuel. Such a local restriction could have the unintended consequence of promoting poor decision-making and diversion to a more distant airport where an industry-standard fuel supply is assured.

---

[16] Fed. Aviation Admin., *FAA Fact Book, at* https://www.faa.gov/newsroom/faa-fact-book.
[17] *See, e.g.,* Gabriel Greschler, "'Jumping the gun': Pilots, flight instructors say Santa Clara County's switch to unleaded aviation fuel was just an ineffective ploy," San Jose Mercury News (Jan. 24, 2022), *available at* https://www.mercurynews.com/2022/01/23/jumping-the-gun-pilots-flight-instructors-say-countys-switch-to-unleaded-aviation-fuel-was-just-an-ineffective-ploy/.
[18] *See, e.g.,* 49 U.S.C. § 47107(a)(1).
[19] *Id.* § 47103(a) (emphasis added).
[20] *Id.* § 40101(d).

V. CONCLUSION

The general aviation community remains committed to removing lead from aviation gasoline by the end of 2030 – and it may be sooner. The general aviation community also recognizes that lead is detrimental to human health, and that the communities surrounding airports should not bear a disproportionate burden. But we cannot compromise the safe and efficient operation of the fleet of aircraft, or economically destroy the United States general aviation transportation infrastructure, by prematurely removing an essential fuel that many aircraft require for safe operation. In the absence of readily-available and safe substitutes, EPA, the FAA, and the general aviation community must work together to ensure safe and efficient transition to lead-free fuels.

The Associations therefore respectfully urge the EPA, in coordination with the FAA, to ensure that any final finding in this matter and follow-on regulatory actions to appropriately and responsibly address this issue does not invite or motivate State, local, Tribal, or territorial governments to take premature action by attempting to impose unlawful and preempted restrictions on the dispensation of 100LL aviation gasoline, pending the completion of the government-industry work described above and the deployment of a viable unleaded replacement for 100LL that meets the safety and operational requirements of the entire piston fleet.

The Associations appreciate the opportunity to provide our perspectives and look forward to further collaboration and partnership with the EPA and FAA in furtherance of our shared objective of eliminating lead from aviation gasoline.

Respectfully submitted,

Aircraft Owners and Pilots Association (AOPA)
Experimental Aircraft Association (EAA)
General Aviation Manufacturers Association (GAMA)
Helicopter Association International (HAI)
National Air Transportation Association (NATA)
National Business Aviation Association (NBAA)
American Petroleum Institute (API)

APPENDIX A
ABOUT THE GENERAL AVIATION ASSOCIATIONS

Aircraft Owners and Pilots Association (AOPA)
The Aircraft Owners and Pilots Association is a not-for-profit individual membership organization of more than 415,000 pilots and aircraft owners. AOPA's mission is to effectively serve the interests and needs of its members as aircraft owners and pilots and establish, maintain, and articulate positions of leadership to promote the economy, safety, utility, and popularity of flight in general aviation aircraft. Representing two thirds of all pilots in the United States, AOPA is the largest civil aviation organization in the world.

Experimental Aircraft Association (EAA)
The Experimental Aircraft Association is a non-profit individual membership organization of nearly a quarter million pilots and aircraft owners with a wide range of aviation interests and backgrounds. EAA's mission is dedicated to providing aviation access to all who wish to participate. As part of that, EAA is committed to protecting the right to fly and own recreational aircraft, promoting opportunities to experience and enjoy aviation, preserving aviation history and heritage, and preparing for tomorrow and future generations of aviators. EAA has chartered approximately 1,000 Chapters which promote local aviation activities in their communities and regions.

General Aviation Manufacturers Association (GAMA)
The General Aviation Manufacturers Association (GAMA) is an international trade association representing over 150 of the world's leading manufacturers of general aviation airplanes, helicopters, engines, avionics, equipment, and components. In addition to building nearly all the general aviation aircraft flying today, GAMA member companies also operate repair stations, airport fixed-base operations, pilot and maintenance training facilities and manage fleets of aircraft.

Helicopter Association International (HAI)
HAI is the professional trade association for the international helicopter industry and 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 the helicopter as a safe, effective method of commerce and to the advancement of the international helicopter community.

National Air Transportation Association (NATA)
The National Air Transportation Association (NATA) has been the voice of aviation business for more than 80 years. NATA is the leading national trade association representing the business interests of general aviation service companies on legislative and regulatory matters at the federal level, while also providing education, services, and benefits to our members to empower their safety and long-term economic success. Representing over 3,700 member locations, NATA membership consists of a broad array of aeronautical service providers requisite for a vibrant general aviation sector, ranging in size from large companies with international presence to smaller, single-location operators that depend exclusively on general aviation for their livelihood.

National Business Aviation Association (NBAA)
Founded in 1947 and based in Washington, DC, the National Business Aviation Association is the leading organization for companies that rely on general aviation aircraft to help make their businesses more efficient, productive and successful. The Association represents more than 8,000 Member Companies of all sizes and located across the country.

American Petroleum Institute (API)
API represents all segments of America's natural gas and oil industry, which supports more than 11 million U.S. jobs and is backed by a growing grassroots movement of millions of Americans. Our nearly 600 members produce, process and distribute the majority of the nation's energy, and participate in API Energy Excellence®, which is accelerating environmental and safety progress by fostering new technologies and transparent reporting. API was formed in 1919 as a standards-setting organization and has developed more than 800 standards to enhance operational and environmental safety, efficiency and sustainability.

APPENDIX B
Overview of EAGLE Initiative Framework

General Aviation Commitment to
ELIMINATE AVIATION GASOLINE LEAD EMISSIONS (EAGLE)

Aviation and petroleum industry stakeholders and the U.S. government fully support a comprehensive public-private partnership, with the goal of transitioning to lead-free aviation fuels for piston-engine aircraft by the end of 2030. The 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.

The EAGLE initiative will conduct its activities under four pillars:

- **Regulatory and Policy**: Work will focus on the government policies and processes needed in areas such as fuel authorization, certification, lead emissions standards, and infrastructure as well as conducting outreach to industry stakeholders and international partners.
- **Unleaded Fuel Testing and Qualification**: Work will focus on the research, testing, and qualification necessary for a viable, safe, high-octane unleaded replacement for 100 octane low lead (100LL)and issuance of an FAA eligible fleet authorization.
- **Research & Development**: Work will focus on research and testing, effective and timely certification of advanced technology designs, and evaluation of means of compliance and operational procedures to address the technical challenges associated with high-performance engines and unleaded fuels.
- **Business Infrastructure and Implementation**: Work will focus on supporting policy and regulatory proposals for maintaining 100LL availability and airport access to ensure safety during the transition and on supporting standards and regulatory pathways to market for the production, distribution, and servicing of the new unleaded fuel, including government incentive and policy programs.

The EAGLE initiative is ambitious and comprehensive. We are fully committed to its success. Activity under all pillars must and will start immediately. We ask other government entities, general aviation associations, airports, fuel suppliers and distributors, and industry stakeholders to join us in making EAGLE soar.

AOPA your freedom to fly
AAAE
API American Petroleum Institute
EAA THE SPIRIT OF AVIATION
GAMA General Aviation Manufacturers Association
Helicopter Association International
NATA National Air Transportation Association The Voice of Aviation Business
NBAA