

The following comments are provided by the Industry Partners of the Eliminate Aviation Gasoline Lead Emissions (EAGLE) initiative. EAGLE is a collaborative industry-FAA effort focused on eliminating lead (Pb) from aviation gasoline or “avgas.” The 10 dedicated voluntary industry coalitions representing aviation and fuel manufacturers are: the National Association of State Aviation Officials, the Aircraft Owners and Pilots Association, the National Air Transportation Association, the General Aviation Manufacturers Association, the International Association of Air Shows, the Experimental Aircraft Association, the National Business Aviation Association, the American Association of Airport Executives, Helicopter Association International, and the American Petroleum Institute.

EAGLE was formed in March 2022 in response to the 2021 National Academies of Sciences Consensus Report “*Options for Reducing Lead Emissions from Piston-Engine Aircraft*” to facilitate the successful transition to lead-free aviation fuels for piston aircraft by the end of 2030, without compromising the safe and efficient operation of the General Aviation fleet.

The General Aviation (GA) industry consists of some 220,000 aircraft, supports nearly 1.2 million jobs, and generates an estimated \$245 billion in economic impact annually. It does not include military or commercial airline aircraft, although it does support those industries in ancillary ways. GA supports many additional functions besides recreational flying including but not limited to air ambulance, law enforcement, charter, commercial transport, business, disaster response, aerial firefighting, and critical flight training activities. Civilian



Flight training is a key contribution to the national air transport system as the airlines are currently struggling to fill captain and first officer seats in the post-pandemic era.

The GA industry is intently focused on the need to remove lead from 100 low lead (100LL) avgas and is committed to do so by the end of this decade. Lead, specifically tetra-ethyl lead (TEL), is used in avgas as an additive to boost octane (fuel performance) and prevent engine knock (detonation) that could result in catastrophic engine failure and adversely affect operational safety. Octane is therefore especially important in high compression engines. It is estimated that 68% of the GA fleet can use lower octane unleaded fuels, such as 94 unleaded (94UL), which is currently available on the market in limited quantities. 100LL fuel may be used in both low and high compression engines; however, the remaining 32%, which also consumes 70-75% of all avgas sold in the US, **must** use higher octane avgas only to prevent catastrophic engine knock detonation. The total yearly consumption of all avgas in the US equates to approximately four (4) hours of automobile consumption in the US! Since the 1970s, lead emissions from avgas have been reduced by half. As stated, the GA industry is committed to eliminating lead entirely by the end of 2030 or sooner, without compromising the safe and efficient operation of the General Aviation fleet.

The aviation industry is focused on doing what it can until a proper unleaded substitute is widely available. One such unleaded 100-octane avgas was approved for use by a segment of the fleet in September 2022. General Aviation Modifications, Inc. (GAMI) received



FAA authorization in 2021, commonly known as an AML-STC, or Approved Model List-Supplemental Type Certificate, to begin dispensing its G-100UL avgas. At the time of this writing, it is not yet available commercially. Additional unleaded fuel candidates are currently going through various test and evaluation protocols under the Piston Alternative Fuel Initiative (PAFI) program or the STC program before they may be authorized for production and distribution. These include Swift Fuels, Inc., which is pursuing STC authorization, while collaborative efforts between Afton Chemical and Phillips 66, as well as LyondellBasell and VP Racing are going through the PAFI testing program currently underway at the FAA’s Hughes Technical Center.

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