

AirVenture 2025 Audience Member Questions

1. **During the transition phase, if I load up with unleaded fuel in my aircraft at Airport A and fly to fuel at Airport B, I may have a safety issue if the fuels cannot commingle. What is EAGLE doing to test for mixing between the replacement unleaded fuels?**

Answer: All currently approved unleaded fuels and those in development are safely mixable with 100LL.

Pilots and operators should always check the fuel's specification or approval documents (i.e.- Supplemental Type Certificate, Pilots Operating Handbook, Owner's Manual, Airplane Flight Manual etc.) with their airframe and/or engine OEM to confirm which combinations are permitted, as well as any limitations on blending with other fuels.

The ability to combine these fuels safely is critical for aircraft owners, pilots, the aviation industry, and the FAA. The FAA and industry are evaluating options to ensure safety for these fuels.

2. **Two unleaded fuels are going through the STC process, and one is going through the FAA's Fleet Authorization process. What guidance is available for using these fuels in experimental aircraft?**

Answer: Owner/operators of Experimental Amateur-Built aircraft are responsible for reviewing available data and determining suitability for their individual aircraft.

- For those interested in using fuel(s) approved via the STC process, we recommend contacting the STC holder directly. These fuel developers own relevant data and plan to make it available to interested parties upon request.
- Guidance and data packages for the fuel being evaluated under the FAA's Fleet Authorization via PAFI program will be provided to the owners of E-AB aircraft by the FAA.

Please stay engaged with EAGLE and our partners for updates and resources. For more information, please see [The Two FAA Pathways to Approve the Use of Unleaded Aviation Fuel](#).

3. **Our small airport has two tanks—one for Jet A and one for 100LL—but lacks infrastructure for a new pumping system. What support is available to help us transition to unleaded fuel?**

Answer: As directed by Congress in the FAA Reauthorization Act of 2024, FAA is currently developing a transition plan to safely enable the transition of the piston-engine general aviation aircraft fleet to unleaded avgas by 2030. This includes consideration of early deployment of new unleaded fuels at airports that choose to bring an unleaded fuel in addition to 100LL as well as a national transition in which a viable unleaded avgas replaces 100LL within the current infrastructure.

Airports considering an early adoption of unleaded fuel(s) are encouraged to contact their fuel supplier to discuss infrastructure options. Some candidate fuel providers are working with airports to offer temporary or portable storage tanks during the transition period. Additionally, interested stakeholders might find the following information from the FAA Airports Office helpful:

- **Airports are encouraged to support transition-enabling infrastructure**
 - Infrastructure Investment and Jobs Act (IIJA) Airport Infrastructure Grant (AIG) allocated funds can be used on sponsor-owned revenue producing aeronautical support facilities

such as fuel farms. For additional info. see [IIJA page](#) and FAQs (note: FAQs are in the process of being updated as of Fall 2025 and will be shared with a wider audience once available).

- The FAA is authorized to provide funding for aircraft fueling systems, e.g. for fuel tanks and trucks.
- **Airports are also encouraged to include transition to unleaded fuels in airport planning initiatives and to identify it in Airport's Capital Improvement Plans.**

4. In which engines are the new unleaded fuel performing best (regarding what is being tested in the PAFI program)?

Answer: All unleaded fuels in both STC type certification and PAFI programs have performed well across all the engines tested, showing positive results such as reduced engine wear and cleaner operation, particularly in Continental engines. It is not practical nor possible to conduct testing on each make and model of piston-engine across the entire U.S. aircraft fleet. Therefore, FAA certification and authorization testing uses an "envelope" approach to ensure safety and compatibility across a wide range of engines. by identifying key performance and design characteristics that impact safe operation and specific engine which represent the corners of the envelope.

Based on a specific unleaded fuel performance and composition, the primary focus areas for testing to ensure safety of the fleet are detonation, materials compatibility, and engine durability.

- **Fleet Authorization Pathway** - Information about the PAFI test program, including specific engines identified for testing of detonation, performance and durability, as well as the current status of testing is available from the EAGLE website: www.flyeagle.org
- **STC Pathway** – The FAA type certification process is conducted between an applicant and FAA; all project details are proprietary, so please contact those companies for any additional information such as testing of specific make and model engines.

Note: The website answer will include a link to the document that will show the status of each engine.

5. What is FAA's role in fuel's approval?

Answer: The FAA approves the use of fuel under one of the two approval pathways, either under the Fleet Authorization via the Piston Aviation Fuels Initiative (PAFI) testing program, or under the traditional STC/TC pathway. Once the FAA approves the use of a new fuel, it is up to the open market to deploy the fuel in terms of production, distribution, airport/FBO availability, and owner/operator use. Ultimately, the open market will determine the commercial viability of new unleaded fuel or fuels that replace 100LL.

6. I am interested in using unleaded fuel in my airplane and providing my operational experience in response to the FAA SAIB to collect data, but unleaded fuel is not locally available. What is the current timeline for fuel availability, and are we on track?

Answer: We are currently in phase one of the four-phase transition plan, focusing on fuel approvals and authorizations, as well as deployment to and use of new unleaded fuel(s) by early adopters. Broader availability is expected as we move into phase two, currently targeted for mid to late 2027, when we anticipate increased access and opportunities. We remain committed to data-driven decisions and will continue to provide updates as more information becomes available.

7. What measures are in place to protect the supply of 100LL if an unleaded solution is not available by 2030?

Answer: We are actively monitoring fuel supply and working with stakeholders, including TEL producer Innospec, to ensure continued availability until a safe, acceptable alternative is in place. At this time, there is no legislative ban on 100LL in 2030; the date is a goal, not a cutoff. Ongoing data collection and coordination will inform future actions and necessary rulemaking, ensuring the fleet is supported and a smooth transition is achieved.

Congress recognized the importance of 100LL aviation gasoline remaining available during the transition phase until a suitable unleaded replacement is approved and widely available across U.S. airports. In 2025, FAA implemented a new grant assurance requiring continued availability of 100LL aviation gasoline at federally funded airports through at least Dec. 31, 2030 (December 31, 2032 in Alaska), or until an FAA-approved unleaded alternative becomes widely available. See the FAA [Questions/Answers on Grant Assurance 40, Access to Leaded Aviation Gasoline](#).

8. Will recent federal program terminations affect the EAGLE initiative?

Answer: No. Congress has reiterated a need for an orderly transition, and the FAA's role in EAGLE remains unchanged. The program was just reauthorized in 2024, which, via section 827 directs the FAA to continue to partner with industry and other Federal government stakeholders in carrying out the mission of the industry-government initiative, EAGLE, and take such actions as may be necessary to facilitate safe and orderly transition to the unleaded fuel by the end of 2030 (2032 for Alaska).

9. Given that UL94 is available, why not deploy it widely now and switch to UL100 when ready, for faster adoption?

Answer: Airport owners/operators, service providers (FBOs) and other stakeholders are free to deploy UL94 as soon as they choose. Airports can pursue support through federal and state grant funding, such as through the Airport Improvement Program (AIP), to install infrastructure for unleaded fuels like UL94. Some states and localities also offer incentives to offset fuel and STC costs, encouraging earlier adoption. FBOs and airports are working together, where FBOs have invested in the necessary infrastructure to implement unleaded fuels. These efforts help facilitate a smooth transition to unleaded fuel now, paving the way for UL100 deployment when it becomes available.

10. One of the three fuel providers is not pursuing an ASTM fuel specification. Will this exclude them from the process?

Answer: FAA guidance allows for both industry consensus specifications and independent specifications for the purpose of type certification; an ASTM specification is not required for FAA certification under the TC/STC approval pathway. An ASTM standard is however required for fuel pursuing FAA fleet authorization utilizing the PAFI testing, as per the 2018 FAA Reauthorization.

Although not required for FAA safety certification or authorization, ASTM fuel specification is the industry standard for independent peer review and understanding of a new fuel. As such, ASTM specification is widely relied upon by aircraft and engine manufacturers, fuel refiners and distributors, airports, and FBOs for risk assessment, warranty support, and market acceptance.

Fuels without an ASTM specification are not excluded from consideration as a potentially viable replacement for 100LL by FAA or government regulation; however, the developer of such a fuel will need to address additional considerations required by industry stakeholders to support business risk decisions for deployment and use.