

FAQ REGARDING FAA ISSUANCE OF SUPPLEMENTAL TYPE CERTIFICATES FOR 100 UNLEADED AVGAS

What is a Supplemental Type Certificate (STC)?

A supplemental type certificate (STC) is an FAA approval to modify an aeronautical product from its original design. Approval to use a new fuel could be one such modification. The STC defines the product design change, states how the modification affects the existing type design, and lists serial number effectivity.

What does the FAA issuance of STCs to General Aviation Modifications, Inc. (GAMI) for approval of G100UL mean for the GA community?

Through its issuance of the new STCs to GAMI, the FAA has approved the use of GAMI's 100 unleaded avgas (G100UL) in all spark-ignition piston aircraft and engines in the GA fleet.

When do the STCs take effect?

The STCs are approved as of now. However, the practical effect will be realized once GAMI's G100UL avgas is available at the airport. Distribution will phase in over time. Launch customers are likely to be certain flight schools and the airports at which 100LL has been forbidden or restricted.

Are the STCs the same as a "fleetwide approval" and is that difference important?

The FAA uses "fleetwide approval" with the quotation marks to mean a general approval by the FAA to use a replacement fuel, without requiring an STC or airframe or engine manufacturer approval. The FAA differentiates that from fleetwide approval without the quotation marks which means a fuel, like GAMI's G100UL, that has been approved, in this case by STC, for use in all aircraft in the fleet. GAMI uses the term "functional fleet-wide approval" to describe its Approved Model List STCs. To use GAMI's G100UL avgas in your airplane, you need to obtain their STCs for *both* your engine and your airframe. You can contact GAMI for the STCs.

What was the process for issuance of the STC?

In general, and in this case, the FAA does not approve fuels. Industry participants define a fuel by a specification, and the FAA certifies engines and airframes to operate on the fuel defined by the specification. For instance, 100LL was not approved by the FAA. Instead, thousands of different engine and aircraft model Type Certificate Data Sheets include "100LL" as an approved fuel for use with those engines and aircraft. FAA approval of a new fuel for aircraft engines is a significant undertaking that needed to be done carefully.

Does this solve the unleaded fuel issue for general aviation?

The general aviation community is now closer to a solution that will enable pilots to fuel their aircraft with unleaded 100-octane avgas. The phaseout of lead won't be complete until 100UL is available everywhere 100LL is sold today, and that rollout process will probably take several years. Regulatory restrictions could speed that up, but at present, which is not expected to be a short-term factor.

What other companies are working towards an unleaded avgas solution?

GAMI is not the only company seeking FAA approval for an unleaded avgas. In addition, Swift Fuels is seeking to obtain STC approval by next year, and PAFI/EAGLE participants Phillips66/Afton Chemical and Lyondell Chemical/VP-Racing continue working with the FAA toward certification of their candidate unleaded fuels. The Phillips 66 website suggests a 2025/2026 introduction.

When does GAMI expect a refiner(s) to join the process and begin making the fuel?

Now that GAMI has received airframe and engine STCs from the FAA, it is in a position to further engage with refiners and other blenders toward commercialization and production of the newly authorized unleaded 100-octane fuel.

When can pilots and aircraft owners expect to see G100UL avgas on their field?

The rollout will depend on location and logistics. 2023 is expected to be a year of logistics. G100UL avgas should appear more widely in 2024.

Will G100UL avgas be available nationwide at once, or will it be rolled out geographically? If so, who would get it first?

GAMI has stated that its plan is to select several fleet customers for early adoption, and to meet the need for 100-octane unleaded avgas where 100LL is no longer allowed. Nationwide availability will follow as logistics and commercialization are developed.

Does this announcement mean the end of EAGLE? Will EAGLE still be involved and how?

EAGLE is expected to continue. There are three other unleaded avgas contenders still pursuing their approvals, and EAGLE could assist GAMI with its logistics development and commercialization. Until a 100-octane unleaded avgas is well-established at the airports, EAGLE has a role in focusing industry collaboration to make that happen.

How much will the new fuel cost?

According to GAMI's George Braly, the small batch size of initial production will make the fuel cost slightly more than leaded avgas. We all hope that economies of scale will lead to more competitive pricing. Specific costs will be available through GAMI. We encourage pilots and aircraft owners to visit GAMI.com.

What will be the cost for an STC?

The cost of an STC is set by the holder, and we encourage you to contact GAMI for the price. Pilots and aircraft owners can visit GAMI.com.

Given this announcement, are other fuel developers still moving forward with their own work?

The process is still open for fuel developers to pursue one of the paths to certification and approval.