

## GENERAL AVIATION MODIFICATIONS (GAMI)

### Ada company's lead-free general aviation fuel awaits FAA certification

A new fuel that might power the future of the world's general aviation industry filled a small jar in a hanger at Ada Municipal Airport, looking as if it could have been a mug of amber ale.

Tim Roehl, co-founder and President of General Aviation Modifications Inc. (GAMI) placed the jar of newly developed fuel on a table next to a jar of current aviation fuel. The current fuel was tinted blue to indicate it contains lead.

The new fuel was developed solely by Ada's GAMI and is called G100UL for GAMI's 100 Motor Octane Unleaded. It is awaiting certification by the Federal Aviation Administration and is lead-free.

The general aviation world is the final transportation industry holdout still using leaded gasoline, called 100 Low-Lead, as its primary fuel for piston-engine aircraft.

However, the exemption for the use of a leaded fuel allowed by the Environmental Protection Agency (EPA) for general aviation aircraft is expiring. That deadline prompted an industry-wide consortium to begin working on development of an alternative fuel about a decade ago.

"We became very frustrated with where we saw the industry going in terms of the inability to come up with a successful solution," Roehl said. "So, we began to try to formulate a successful replacement fuel on our own. And after only about six months we seized upon a formulation and some chemistries that looked to us to be a viable replacement for the 100 Low Lead."

GAMI patented the formulation and began working on the process to gain FAA certification – called a Supplemental Type Certificate (STC) -- for the fuel. Roehl expects to gain initial certification within six months.

"And that will be big news," he said.

So, how did a tiny general aviation company located at a municipal airport in this Southeastern Oklahoma community of 17,000 people become a leader in development of aviation fuel?

GAMI's footprint across the general aviation world is much larger than the three hangars and 45 employees it maintains at Ada Municipal Airport. Over the past 20 years it has developed some of the industry's most innovative engine power management technologies.

Founded in 1996 by Roehl and business partner George Braly, the company quickly made an impact with development of its patented GAMIjector fuel injectors, which are replacement fuel injectors for piston engine aircraft.

The GAMIjectors allow pilots to fine tune the performance of their engines to run "lean of peak," which means engines run cooler and use less fuel.



“We have continued to enjoy good sales with the GAMIjectors, with our 25,000th set recently sold,” Roehl said. “We sell them all over the world. We invented it, we patented it and basically wrote the book on it.”

Roehl is a long-time pilot and Oklahoma native who opened an Ada-based aviation manufacturing business called Dynamic Flight Structures in the late 1980s before selling the company.

Braly is an Ada native and is GAMI’s chief engineer who has been a certified flight instructor since he was 19 years old. He earned an aeronautical engineering degree from Brown University in 1970, just as NASA was winding down the Apollo space program and laying off hundreds of engineers.

So, Braly returned to Oklahoma, earned a law degree and began practicing law while continuing to fly. Braly and Roehl connected in the early-1990s and decided to partner in the venture that became GAMI.

“The fuel injector project turned into a springboard and got us going,” Braly said. “We kept expanding the business. Tim kept reaching out and finding things to bring in.”

The aviation business partners eventually opened a second successful Ada business in 1998 called Tornado Alley Turbo that builds and installs advanced turbonormalizing systems for piston engine aircraft.

A third company called Advanced Pilot Seminar, brings pilots from all over the world to Ada for three days of classes to learn how to operate aircraft engines in the safest manner and protect them from adverse operating conditions.

“We are well recognized in the pilot community for the unique things we do,” Roehl said. “We certainly enjoy being located in Ada. We have good support from the city and are on the airport with good access.”

If and when GAMI’s unleaded fuel is certified by the FAA for fleet use, Roehl anticipates licensing the formulation to major fuel producers such as Phillips, Shell and Exxon.

“We are quite confident that our fuel has all the characteristics that are key to becoming a successful fuel,” he said. “We are hoping for big things and thinking that may occur.”

And that’s big news for Oklahoma, as well as the general aviation world.

[See the story in the 8-10-16 Oklahoman](#)

[Watch the video](#)

[Go to the GAMI website](#)