

IS ALCOHOL OK FOR YOUR ENGINE AND FUEL SYSTEM?



According to Terri Sipantzi, for EAA's *Light Plane World*, from a legal point of view, if you're flying a special light-sport aircraft (S-LSA), then you must use the fuel specified by the aircraft (not engine) manufacturer. In making the determination whether to allow alcohol (ethanol is what we're talking about here, not methanol), manufacturers will typically wait until the engine manufacturer determines the use of ethanol is safe and at what levels. In the case of Rotax engines, the engine manufacturer has stipulated that up to 10 percent ethanol is safe in their engines. (See Rotax service bulletins to determine if your engine has been determined ethanol safe. It will be based on engine serial numbers.) If the manufacturer is using fuel lines, a fuel tank, or any other components that haven't been tested for ethanol, then the manufacturer can't issue approval to use ethanol until those components are changed out or tested. But he writes "However, I always default to ethanol free when I can get it." Sipantzi wrote



that last spring, after he had been using ethanol-based gas for several months, he was trying to start his trike. It would start, run, and then die. After three of these false starts, I suspected I was having a fuel problem, and the first thing I checked was the fuel itself by draining a sample. The entire fuel sample cup looked like a filmy, almost jellylike substance. The alcohol in the fuel was completely saturated with moisture and had settled to the bottom. My engine was sucking this filmy, jellified mess into itself. Even if I'd drained the saturated content out, the fuel was still no good because fuel treated with ethanol derives part of its octane rating from the ethanol. Since all the ethanol had separated out with the water, my octane rating was below the safe level. I had to completely drain the tank.

What about certified aircraft with an STC for autogas? Or experimentals where you don't need an STC? At the June EAA 172 meeting, Kinsey Butler, club member and A&P who is now the manager of the Washington-Wilkes airport (KIIY) and owns Southern Air Repair LLC, indicated that ethanol in fuel for the "regular" Lycomings and Continentals is disaster for their seals, fuel lines, and engine parts. EAA national is more dramatic. It writes that the FAA has issued a special [Airworthiness Information Bulletin](#) (SAIB) warning aircraft owners and operators with auto fuel supplemental type certificates (STC) to ensure the fuel they use does not contain alcohol (ethanol or methanol). Here read the entire EAA article about alcohol (both methanol and ethanol) in autogas – and save your aircraft and/or life! [Alcohol - Mogas](#)

The FAA cites numerous reasons alcohol and airplanes do not mix. Alcohol:

- * Adversely affects the volatility of auto gasoline, which could cause vapor lock.
- * Is corrosive and not compatible with rubber seals and other materials used in aircraft, which could lead to fuel system deterioration and malfunction.
- * Is subject to phase separation, which happens when the fuel cools as an aircraft climbs to higher altitudes. When the alcohol separates from the gasoline, it may carry water that has been held in solution and that cannot be handled by the sediment bowl.
- * Reduces the energy content of fuel. Methanol has approximately 55 percent of the energy content of gasoline, ethanol 73 percent. More alcohol equals reduced range.

You can obtain alcohol test kits in many places. EAA national has a Web page discussing [Alcohol in Autogas](#) where you can buy their [EAA Alcohol Test Kit](#). You can also test the gasoline yourself using what you have in [Testing for Alcohol](#).

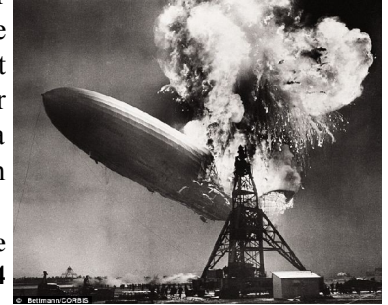
Locally (in the Augusta, Georgia, area) there are not many automobile gas stations that have alcohol-free gasoline. You can use the Website [pure-gas.org](#) to find gas stations with pure gasoline. The site for Georgia is [Georgia Pure-Gas](#) and the one for South Carolina is [South Carolina Pure-Gas](#). Note that you just change the state code at the end of the Website URL for any state. Then you should get an alcohol test kit from a number of vendors, including EAA (above), to make sure the gasoline is really pure. Gasoline at the J. C. Food Mart at the edge of the K Mart plaza at the corner of Dean's Bridge Road and Gordon Highway in August, Georgia, has been tested and found to be pure gasoline. If you know of any other places, and have tested the gasoline yourself (recall Reagan's "Trust, but verify"). E-mail the newsletter to let us know: [I have found pure gasoline](#) Think of it as a [Grail Quest](#)! (Information taken from information from EAA, the FAA, pure-gas.org, and actual gasoline tests, June, 2011)

GOODYEAR BLIMP BURNS, CRASHES. ONE DEAD



A Goodyear blimp burst into flames and plunged to earth in a weekend crash in Germany on June 12th.

The pilot, Michael Nerandzic, 53, was killed but three passengers managed to jump to safety when the airship caught fire as it was coming in to land at the Reichelsheim aerodrome near Friedberg. When the airship was just two meters from the floor, Mr Nerandzic told his passengers, all journalists, to jump to the ground while he tried to land safely. But once the three had leapt clear, the sudden loss of weight caused the blimp to soar skywards and burst into flames before crashing to the earth in a chilling echo of the Hindenburg disaster. The cause of the crash was not immediately clear but an investigation was underway.



As a comparison: **That Goodyear blimp was 192 feet long. The Hindenburg, which exploded and burned on May 6, 1937, at Lakehurst, New Jersey, was 804 feet long. It was filled with flammable hydrogen while the Goodyear blimps use non-flammable helium.** (Adapted from information from the UK *Daily Mail*, June 14, 2011)

See more photos and read the complete article: [Goodyear Blimp Burns](#)



GYROPLANES, ULTRALIGHT PILOTS CAN NOW LEGALLY OBTAIN FLIGHT INSTRUCTION *EXPERIMENTALS CAN NOW BE USED FOR PRIMARY FLIGHT INSTRUCTION*



The new FAA guidance for issuing a Letter of Deviation Authority (LODA) for flight instruction has changed the picture for some experimental light-sport aircraft (E-LSA) that were previously used for training but had to stop almost a year and half ago after the end of the transition period. There are also new provisions for training in experimental gyroplanes and for ultralight-only training in experimental aircraft flying under 87 knots.

In revised [FAA Letter of Deviation Authority](#) (LODA) guidance, publicly released on June 3rd, changes allow for primary flight instruction in rotorcraft gyroplanes, ultralight vehicles, and for sport pilot certificates in previously exempted Experiment light-sport aircraft. In addition, the LODA still allows for compensated transition training in Experimental category aircraft, which is an essential part of enhancing the safety record of amateur-built aircraft. It also fits into FAA Administrator Randy Babbitt's call for more transition training for pilots.

The LODA revision specifically allows:

* Rotorcraft gyroplane training at all levels. Essential for this class of aircraft since gyros cannot be certificated as S-LSA. Pilots receiving training no longer need "category and class" privileges to receive training.

* Sport pilot certificate training is allowed, which is a big win for the low-mass/high-drag community. The drawback is this training must be conducted in a previously exempted E-LSA, owned and operated by the LODA applicant.

* Ultralight vehicle training in low-mass, high-drag aircraft with an empty weight of less than 500 pounds and a VH (maximum speed in level flight at maximum power) of 87 knots. Any experimental aircraft meeting this definition can give training without a previously held exemption, but instructors must hold a CFI rating.

(Information adapted from EAA new 06/03/11, FAA, and other sources)

