

The Difference Between An Experimental Trike and An Experimental Glider-Trike



Brian Milton's Pegasus trike.

Many people have expressed an interest in the new glider-trike pilot's license. This is an FAA pilot license which allows a person to fly a trike that is certificated as an experimental self-launched glider (motorglider.)

For background information on the glider-trike project, see the November 2000 issue of *UltraFlight Magazine* (Tel: 727-327-7468) or read the following articles at Aero-News Network:

New Category: Glider-Trike at <http://www.aero-news.net/> and **Glider-Trike Instructor Ranks Grow Some More!** at <http://www.aero-news.net/news/archive2000/1200news/120500a.htm>



Experimental placard on a Pegasus trike.

Now that the FAA has approved the glider-trike project, some pilots are wondering if an experimental trike kit must be certificated as a "glider," and if one must have an FAA glider pilot license to fly any experimental trike.

Here's the answer.

When you place an aircraft into the "Experimental" category, the airworthiness certificate simply says, "Experimental." But for an exception noted below, there is no category or class designation for experimental aircraft.

For example, in addition to flying trikes, I fly an experimental Keuthan Buccaneer seaplane. The airworthiness certificate for the airplane does NOT say, "experimental-single engine sea." It just says, "Experimental."

Even a helicopter airworthiness certificate just says "Experimental."

For the lack of a better term, some people call the generic experimental designation as "experimental-nothing" (experimental dash nothing.)

However, there are two exceptions to "experimental-nothing." The exceptions are experimental-glider, and experimental-balloon. Gliders and balloons are specifically so designated because a pilot is not required to have an FAA medical exam to fly either one.

There has been some question as to whether or



Pegasus trike cockpit.



Pegasus trike on approach.



Pegasus trike getting ready for take-off.

not you can designate a trike as either experimental-nothing or experimental-glider.

The answer is "yes." You can designate a trike as either "nothing" or "glider," (but not as both at the same time.) If the airworthiness certificate of a trike simply says, "Experimental," it is presumed that the pilot must have an airplane single-engine land certificate (and a medical) to fly it.

How is it possible that a trike can be either a "nothing" (single-engine land) or a "glider?"

To understand the answer, one must look at the FAA definitions of "Airplane" and "Glider," which are found in the Federal Aviation Regulations (FARs) under Part 1:

Airplane means an engine-driven fixed-wing aircraft heavier than air, that is supported in flight by the dynamic reaction of the air against its wings.

Glider means a heavier-than-air aircraft, that is supported in flight by the dynamic reaction of the air against its lifting surfaces and whose free flight does not depend principally on an engine.

Unlike other countries, the United States does not define a glider by specific flight characteristics. For example, in England, a glider must have a specific maximum weight in relation to the glider's wingspan. In Korea, a glider must have a lift-to-drag ratio of at least 17 to 1. In other countries, a glider must not exceed a certain sink rate, such as a maximum sink rate of 150 feet per minute in still air.

As mentioned, the United States does NOT have any such criteria for an aircraft to qualify as a "glider." The defined criterion is that the aircraft's "free flight does not depend principally on an engine."

There is also an additional criterion which has been espoused by the FAA Aircraft Certification branch in Washington, DC. It is this: *that the pilot intends to use the aircraft to soar.*

Gliders with engines are commonly known as "motorgliders." (The FAA actually refers to them as "self-launched gliders," rather than motorgliders.) Regardless of the designation, these gliders are on the cusp between airplane and glider. Some have large capacity fuel tanks and can be flown on long distance flights solely under engine power. Some even have IFR instruments.

However, these so-called motorglider/airplanes are still referred to as "gliders" because they are intended to be used for soaring.

Therefore, if you intend to soar your trike from time to time, with the engine shut down, you should certify it as an experimental "glider." Remember, a trike wing is basically a large hang-glider wing, and it will soar in sufficient lift, despite a lift-to-drag ratio which is less than a traditional motorglider.

If you are not interested in soaring, and do not intend to do so, then you should register your trike as experimental "nothing."

If you already have an FAA single-engine land pilot license, you might prefer to register your trike as experimental-nothing. If you register it as an experimental-glider, you must obtain a glider pilot's license to fly it.

If you don't have any pilot's license, you might prefer to register your trike as an experimental glider (if you intend to soar), because the minimum flight time to obtain a glider pilot license is less than the minimum flight time to obtain an airplane pilot license.

Thanks to the new glider-trike program, it is now possible to obtain your FAA required flight experience in your own experimental glider-trike to qualify as a pilot. Plus you may also take your pilot flight check in the trike, without ever flying a traditional general aviation glider or airplane.

However, if your only experience is trike flying, your pilot logbook will be noted with a restriction that your piloting privilege is limited to weight shift aircraft. It is possible to have the limitation lifted if you subsequently receive training in a traditional glider, and receive an endorsement in your logbook by an FAA certified glider instructor who testifies that you are now competent to fly a traditional glider. You do not have to take another flight check with an FAA pilot examiner.

If you do not have a pilot's license the FAA prefers that you register your trike as a motorglider, and train for a glider pilot's license. The FAA does not want to you to train and test in a trike registered as experimental-nothing, because then you would be issued a "single-engine land" pilot's license, which the FAA feels is not appropriate for someone who has only flown a trike.

Scott Toland was the first and only student who trained and tested in an experimental-nothing trike.

He received a Recreational Pilot License —single engine land.

The FAA was concerned that Scott had a license which would allow him to fly a Cessna 172, when his only experience was in a trike. After months of discussions and negotiations with the FAA, it was decided that it was more appropriate to train future students into the glider category, and make a logbook endorsement limiting his privilege to weight-shift. Thus, was born what we affectionately call the "glider-trike project."

The **glider-trike project** refers to the entire process of placing a trike into the experimental-glider category. After a student pilot trains and tests the glider-trike, he becomes an FAA designated pilot. At present there are two active FAA glider-trike instructors, two pilot examiners, and about a dozen students in various phases of instruction. Hopefully, there will someday be a network of instructors and examiners throughout the country.

The ideal situation would be for the FAA to create a new aircraft "weight-shift" category for trikes. (A new category would also be appropriate for powered parachutes.) But until the weight-shift category is in existence, the best substitute is the glider-trike program.

For more information, contact glider-trike instructor Jon Thornburgh at JonThornburgh@pocketmail.com or voice mail 800-971-8710.

Web site dedicated to glider-trike project:

<http://www.egroups.com/group/ExpTrikes>