In the United States, aviation is regulated by the Federal Aviation Administration (FAA). The rules are published in the Federal Aviation Regulations, commonly referred to as the "FARs."

Ultralights are regulated and defined in FAR Part 103. Part 103 delineates what airplane can qualify as an "ultralight." The FAA actually refers to an ultralight as a flying "vehicle," rather than an "airplane." However, most normal people (which is everyone except an FAA bureaucrat) refers to ultralights as "airplanes."

The FAA defines a powered ultralight as a single seat "vehicle," which weig less than 254 pounds, carries 5 gallons of fuel or less, and is capable of fly as slow as 24 knots and no faster than 55 knots. That's all there is to the definition.

According to FAR Part 103 a pilot is not required to have an FAA pilot's license to fly an ultralight. Nor is he required to undergo an FAA medical exam. The airplane does not need to be inspected by the FAA nor is it required to be maintained by an FAA certified mechanic.

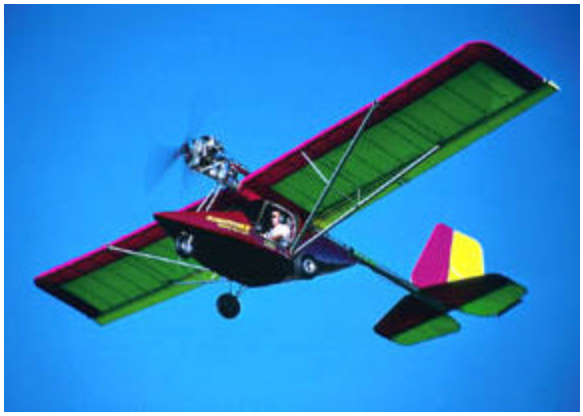
The United States is the only country with such lenient ultralight regulations We are truly fortunate to have such freedom to fly in the US.

There are, however, some additional limitations. The philosophy of the FA/ that it's O.K. to endanger yourself in a single seat airplane, as long as you don't put others in harm's way. Therefore, an ultralight can only be flown ov uncongested airspace, where the unlicensed pilot will be less likely to hurt someone on the ground if he comes tumbling out of the sky.

In addition, the ultralight can't be used for commercial purposes, such as banner towing, crop dusting, fish spotting, or television traffic reporting. Oth than a few other restrictions, such as not flying at night, it's pretty much an unregulated sport.

WHY WOULD SOMEONE WANT TO FLY AN UNTRALIGHT, INSTEAD O A "REAL" AIRPLANE?

First of all, an ultralight is a real airplane. It's just smaller and lighter than traditional general aviation aircraft. But an ultralight is much more sophisticated than you'd think. It can carry more payload than traditional



airplanes. Many ultralights can carry more than their own weight. For example, an ultralight that weighs 250 pounds can typically carry a 300 pound load—more than a 100% increase in weight. Try that with your Cess 150!

Some ultralight wings were designed using NASA specifications. The Dacr fabric which covers the wings of many ultralights is especially engineered t withstand the stress of air loads and environmental pollutants.

So why fly an ultralight?

Mainly because it great fun. Really fun. Mankind has dreamed of flying sinc the caveman days. We're very fortunate to live in an era in which the technology allows us to take wing, and enjoy the thrill of seeing our neighborhoods from above.

Cars and houses look like little toys when you're a few thousand feet abov the ground. The airplane responds to the wind with little dips and bounces if it were a living being. You can climb and descend, and turn and jog with incredible versatility and freedom. How fun it is!

Flying an ultralight is less complicated than flying a general aviation airplan The rules and regulations are minimal. You don't need to take FAA written and oral tests, or a flight check. The instructors are friendly and truly love flying; they're not trying to build up time to get hired by the airlines.

If you own your ultralight, it's much cheaper to fly than a general aviation airplane. Ultralights use only a few gallons of gas per hour of flight. You ca do your own maintenance on them. Many have folding or removable wings so you can store your plane in your garage, and you don't have to keep it i hangar at the airport.

Ultralight pilots are sociable. There are many clubs that you can join, plus three nationally recognized ultralight organizations. These organizations ar many local clubs have "fly-ins" with contests and cookouts. The contests consist of spot landings and dropping bombs of colored cooking flower. Everyone has a great time at these fly-ins and his flying skills are improved as well.

WHAT TRAINING IS REQUIRED TO FLY AN ULTRALIGHT?

Even though the FAA does not require that you have an FAA pilot's license fly an ultralight, it doesn't mean that you can fly it safely without training. Anything that gets more than a few feet off the ground requires training, ev a pogo stick.

As mentioned earlier, according to FAR Part 103, the FAA defines an ultralight as a single seat "vehicle." But it's pretty difficult, and dangerous, t try to teach yourself to fly.

In the old days people did learn (or try to learn) to fly in a single-seater. The instructor would talk to the student over a walkie-talkie, and tell him how to maneuver. Needless to say, there were a lot of unsuccessful landings. Tha how ultralight flyers originally got an undeserved reputation for being dare-devil pilots. Actually, you did have to be pretty bold to takeoff for the first tir in your life with only a walkie-talkie to guide you back to earth.

So the FAA decided to grant a waiver to formally organized ultralight group to train students in two-seat ultralight-type airplanes. These two-seat traine have restrictions similar to the single-seaters: they can only be flown in rura areas, and they have certain speed and weight limitations. Most importantly the two-seat trainers must only be flown for the purpose of student training. It's not legal, for example, for a pilot to give "sightseeing" rides in a trainer a an airshow.

The FAA does not designate ultralight instructors, like they do general aviation CFIs, called Certified Flight Instructors. Instead, the FAA has delegated the authority to create instructors to three national ultralight organizations. These organizations have very specific requirements to become an instructor, and it's a fairly rigorous process, although not as extensive as the training for FAA CFIs. A list of the three ultralight organizations is presented at the end of this article.

Strangely, an FAA CFI is not allowed to teach ultralights, unless he also ha an ultralight instructor's license. The reason is because the ultralight flying characteristics are so different from general aviation trainers.

It's actually quite unusual for a CFI to also be an ultralight instructor, or vice versa. The two aspects of aviation seem to be worlds apart, which is unfortunate. Flying is fun, whether it's in an ultralight or a general aviation airplane, and more aviators should fly both types of aircraft.

Is a pilot allowed to fly a two-seat trainer ultralight if he is not an ultralight instructor? Yes, but only if he is a student who is flying under the direct supervision of his instructor.

Is a pilot allowed to take a passenger flying in a two-seat trainer if he is not an ultralight instructor? No, absolutely not! The only people allowed to fly a two-seater are:

(1) an ultralight instructor flying for proficiency,

(2) an ultralight instructor who is training a student, or

(3) a student who is practicing his solo flight under the supervision of an instructor.

HOW MUCH TRAINING DOES IT TAKE IN A TWO-SEAT ULTRALIGHT TRAINER TO FLY A SINGLE SEAT ULTRALIGHT?

The amount of training varies, depending on the aptitude of the student, his previous experience with airplanes, the weather conditions during training, how frequently the student can take lessons, the type of trainer he's learnin in, and to some extent, the teaching skill of his instructor.

As a rough guideline, it takes about 10 hours before a student can fly solo, he has never flown before. If he's already a general aviation pilot, it may tal from 2 to 5 hours for him to get used to the ultralight's flying characteristics

HOW MUCH DOES IT COST TO LEARN TO FLY AN UNTRALIGHT?

Although it's fairly economical to fly an ultralight if you own it yourself, it's pretty expensive to go through the training process. That's because you wi

be renting the ultralight and the instructor from a profit-oriented business.

An ultralight business has all the same expenses as a general aviation business, such as: business license, business insurance, aircraft tie-down fees, hangar or workshop space, advertising, telephone bills, maintenance, gas, oil, personal property taxes on the airplane, and utilities (maintaining t rest room, etc.)

A two-seat trainer can cost as much as $25,000 to buy, so the ultralight school has to recoup the purchase price of the airplane. Expect to pay from $40 to $60 per hour to rent the trainer.

The instructor's fee will range from $20 to $30 per hour. Remember, the instructor is a professional who spent many hours flying and learning his craft. Just the instructor's ultralight organization dues and the required recurrent training will cost him almost $200 per year.

One aspect of ultralight training which is less expensive than general aviati training is that there is no minimum number of hours required by the FAA t become an ultralight pilot. For example, the FAA requires 40 hours of fight time, plus a check flight, for a student to become an FAA licensed Private Pilot.

In ultralighting, it's not unusual for a brand new student to experience his fi solo flight in only 10 hours of flight time. Why? Because the ultralight trainir is less complicated.

The FAA rated pilot must learn to use a host of radios and electronic navigation systems. He must have some training to see what it's like to fly i the clouds. He must have training to fly to distant airports, called "cross-country" flights. He must have training to fly at night.

The ultralight pilot doesn't have to have any of this training. All he has to dc basically, is learn to control the airplane, and make it behave the way he wants it to. This still takes several hours; an ultralight can be tricky sometimes. But the training is not as extensive as general aviation training.

WHAT KIND OF TRAINING SHOULD AN ULTRALIGHT STUDENT HAVE

As mentioned above, the ultralight pilot will learn how to control and maneuver the airplane. Of course, this includes how to takeoff and land. It also includes turns, climbs, descents, slow flight, recovery from "stalls" (a condition in which the airplane loses lift), and how to taxi.

The pilot also practices emergencies and simulated engine failure procedures. He learns how to glide the airplane to a designated point, in ca he's ever required to so do if his engine quits running during flight for some reason.

Speaking of engines, the ultralight student must learn how to operate the engine, including how to preflight it and perform maintenance. The engines are quite different, from general aviation engines, so even the experienced pilot must learn the unique characteristics.

All of this sounds like a lot of trouble, but it's really no different from the effc required to learn any sport. You certainly don't learn how to play golf

overnight. Besides, it's fun to learn all these new things you never thought about before.

Kids especially enjoy ultralight training. They can start training at any age. The age limit to solo a two seat trainer is 16 years old, but there is no FAA age limit to solo a single seat ultralight. Kids suddenly become more interested in science, mathematics, and meteorology when they start ultralight flying, since these skills are helpful. Many kids who have had problems in school make a complete turn around after they get interested i flying. It's a good way for a parent and son or daughter to get closer togeth

CAN WOMEN LEARN TO FLY ULTRALIGHTS?

Certainly women and girls can fly ultralights. Please forgive me for referrinç to pilots in the masculine in this article. It's a little awkward to continuously say "he or she" can fly ultralights, so I just use the generic word "he." But, c course, women are welcome. It is not a "macho" sport, which general aviat was in years past.

As a matter of fact, the 1998 ultralight champion is a woman! Her name is Dina Romero, and she did an excellent job in the ultralight contests that sh entered throughout the year. Her husband, Dan, is also an instructor, so thi is definitely a flying family.

WHAT'S THE DIFFERENCE BETWEEN AN ULTRALIGHT AND AN EXPERIMENTAL AIRPLANE?

For an airplane to be placed in the Experimental category, it must be inspected by the FAA, and the owner must submit a certain amount of paperwork, including a request for certification. He must also register the airplane with the FAA, after which he will receive a designated registration identification.

In North America, this aircraft identification always starts with the letter "N." That's why experimental airplanes are sometimes referred to as being " 'N' numbered airplanes."

If the proscribed procedures are followed, anything that flies can be placed the Experimental category. This includes ultralights.

The advantage of having an "N" numbered ultralight is that you can fly it ou of city airports. You are no longer relegated to flying it in rural areas. However, since you now have the privilege of flying it over populated areas the FAA requires that the pilot must have an FAA pilot's license. So you mu go through the same training to fly an Experimental ultralight that you woul go through to fly a general aviation airplane, such as a Cessna or a Piper.

On the other hand, as a licensed pilot you can take a passenger with you i your two-seater, and you don't have to be an ultralight instructor. You also can add equipment to your ultralight which would make it too heavy to qua as an ultralight under the weight restriction of FAR Part 103.

For example, you can install lights, and fly at night. You can install a larger fuel tank, bigger wheels, a more powerful engine, and extensive flight and engine instruments.

So there is a trade-off between ultralights and experimental airplanes. Ultralights have restrictions and must be flown in rural areas, but the trainir is less extensive. A person must have a pilot's license to fly an experimenta airplane, but he is accorded many more privileges.

IS THERE ANY WAY TO FLY AN EXPERIMENTAL AIRPLANE WITHOUT BECOMING AN FAA CERTIFIED PRIVATE PILOT?

Yes, there is. The license is called a "Recreational Pilot's License." It's a fu certified FAA pilot's license which is easier to obtain than a Private Pilot's License.

The Recreational Pilot's license is ideal for ultralight-type experimental airplanes. However, it's not widely promoted by flight schools. There are le than 300 "Rec" pilots in the United States. This is really a shame, because it's a great way to get into the FAA flying world.

THE RECREATIONAL PILOT'S LICENSE

The Recreational Pilots license is governed by FAR Part 61.96 through 61.101. It's a much easier license to obtain than a Private Pilots license. No only does the license require less flight hours than a Private license, the student does not have to fly a long distance ("cross-country") flight, he doesn't have to fly at night, he doesn't have to learn electronic navigation, and he doesn't have to learn to communicate on the radio.

Basically, all the Rec student has to do is learn to fly the airplane, which is exactly what an ultralight student has to learn. So the Recreational Pilot's license can be thought of as sort of an "FAA Ultralight license." Remember however, a Recreational Pilot is not entitled to fly a two-seat ultralight. Only an ultralight instructor is allowed to fly a two-seater.

The Rec pilot can, however, fly a two-seat experimental airplane, without a ultralight instructor's license, even though the experimental airplane is essentially identical to a two seat ultralight. Welcome to the strange world o FAA experimental and ultralight regulations.

HOW DO I GET MORE INFORMATION ABOUT ULTRALIGHTS AND EXPERIMENTAL AIRCRAFT?

For information you may contact the ultralight organizations listed below:

UNITED STATES ULTRALIGHT ASSOCIATION (USUA)
P.O. Box 667, Frederick, MD 21705
Tel: 301-695-9100,

EXPERIMENTAL AIRCRAFT ASSOCIATION (EAA)
P.O. Box 3086, Oshkosh, WI 54903-3086
Tel: 920-426-6527,

AERO SPORTS CONNECTION (ASC)
P.O. BOX 589, Marshall, MI 49068-0589
Tel: 616-781-4021,

ABOUT THE AUTHOR

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To see his previous articles in ULTRAFLIGHT