



# QUICK FACTS ABOUT EXPERIMENTAL/AMATEUR-BUILT AIRCRAFT

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## **WHAT ARE AMATEUR-BUILT/HOMEBUILT AIRCRAFT?**

Amateur-built aircraft are built by individuals and licensed by the Federal Aviation Administration (FAA) as “Experimental.” The Experimental designation has been in existence for more than five decades. It defines aircraft that are used for non-commercial, recreational purposes such as education or personal use. Under FAA regulations, if an individual builds at least 51 percent of an aircraft, the aircraft is eligible to be registered in the amateur-built category. They are available in kits (where some of the airplane is already fabricated), or plans (where the builder purchases or manufactures all the parts and assembles them). These airplanes are also commonly known as “homebuilts,” for the obvious reason that many individuals construct these aircraft at home, often in their garages. Currently, more than 30,000 amateur-built/homebuilt aircraft are licensed by FAA. They represent proven aircraft designs that have been flown safely for many years.

## **WHO CONSTRUCTS AMATEUR-BUILT/HOMEBUILT AIRCRAFT?**

People from all walks of life, including astronauts, airline pilots, military jet pilots, machinists, welders, professional people and others.

## **WHY DO THEY BUILD THEM?**

A variety of reasons — a personal challenge; education; performance; or to invest “sweat equity” into the cost of an airplane. Costs range from under \$10,000 to more than \$100,000 based on desired performance characteristics and optional engine and avionics packages. By comparison, a new factory-built Cessna 172 costs more than \$250,000. Many amateur-built/homebuilt aircraft utilize composite materials that help create airplanes that are lighter, faster and more fuel efficient than similar production aircraft.

## **HOW LONG DOES IT TAKE?**

An average amateur-built/homebuilt aircraft will take between 1,000 and 3,000 hours to complete. Some individuals build their airplane in less than a year; others may take a decade or more.

## **HOW ARE THESE AIRCRAFT REGULATED?**

All amateur-built/homebuilt airplanes must be registered with the Federal Aviation Administration (FAA). These airplanes must be inspected by an FAA inspector or a designated inspector before an airworthiness certificate can be issued. This is a fairly rigorous process. The builder(s) must provide logs of when, where and how construction took place, along with supporting documents and photographs. If the aircraft passes this inspection, a pilot must fly between 25-40 hours of test flights in specific non-populated areas to make sure all components are operating properly. Only after that test time is flown may passengers be flown in the aircraft. In addition, an amateur-built airplane is subject to condition inspections every 12 months, the same scrutiny required of small production aircraft.

## **DOES A PERSON HAVE TO BE A LICENSED PILOT TO FLY THESE AIRPLANES?**

Yes. Pilots of amateur-built/homebuilt aircraft must earn and maintain the same federal pilot training and ratings as those who fly factory-built aircraft such as Cessnas, Pipers and Beechcrafts. They also must follow all appropriate federal regulations during each of their flights.

## **WHAT DOES THE TERM ‘EXPERIMENTAL’ MEAN REGARDING A HOMEBUILT AIRPLANE?**

The term ‘Experimental’ is actually a bit of a misnomer – it refers to the FAA category in which the airplane is registered, not the exclusivity or the use of the airplane. While there are a handful of homebuilt aircraft that are original designs, the vast majority of homebuilt airplanes are built using standardized, tried-and-true kits or plans that have been successfully constructed thousands of times. When the current homebuilt aircraft rules were first introduced in the early 1950s, there was difficulty finding a category where the finished aircraft could be registered. After all, the airplanes were not factory-built, such as Cessnas or Pipers, nor were they transport aircraft (airliners) or military aircraft. Federal officials saw the most practical category as Experimental, and created a new subcategory called “amateur-built.” FAA’s Experimental category also includes nearly 10 other subcategories, including aircraft used for crew training, air racing, and historic aircraft (such as World War II military aircraft) flown to air shows and exhibitions.

## **HOW SAFE ARE AMATEUR-BUILT/HOMEBUILT AIRCRAFT?**

Studies by FAA and the National Transportation Safety Board (NTSB) show that amateur-built/homebuilt aircraft have an accident rate less than one percentage point higher than the general aviation fleet. In fact, the accident rate for amateur-built/homebuilt aircraft is dropping. The total number of registered homebuilt aircraft is increasing by about 1,000 per year, while the total number of accidents has stayed virtually the same. Another good barometer of safety is insurance rates. Companies that insure both homebuilts and production aircraft charge about the same rates for owners of either type of airplane. That indicates a similar level of risk.

## **ARE THESE AIRCRAFT THE SAME AS ULTRALIGHTS?**

No. Ultralights are light, one-person flying machines that operate under a completely different set of federal regulations. All amateur-built/homebuilt aircraft are registered with the federal government in the same manner as production aircraft with corresponding “N-numbers” on the fuselage.

## **WHAT IS EAA AND WHAT DOES IT DO TO SUPPORT THE AMATEUR-BUILT/HOMEBUILT PROGRAM?**

EAA is an international 160,000-member association of aviation enthusiasts. EAA was founded in 1953 with a focus on amateur-built/homebuilt aircraft activities. Since that time, the interests of EAA members have grown to include virtually all of aviation’s broad and dynamic spectrum. The core of EAA activities continues to revolve around amateur-built/homebuilt activities. For more than 50 years, EAA has been educating builders and pilots so they may enhance the safety of their aircraft and their individual flying abilities. For instance, EAA technical counselors, who are experienced airplane builders, restorers and mechanics, volunteer their time to visit builders and review their projects. EAA flight advisors help pilots evaluate their flying skills so they are well suited to flying this particular type of aircraft. In some cases, the evaluation will point toward more flight training before a pilot flies a newly built or restored airplane. EAA also offers a full range of instructional books and educational videotapes, as well as a full-time Information Services staff that provides information on specific aircraft so people can embark on a project suited to their individual needs and abilities.

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