

Your EAA Staff Resources:

Jennifer Bork
 Safety Programs Administrator
 safetyprograms@eaa.org
 888-322-4636 ext. 6864
 920-426-6864

Joe Norris
 Sr. Aviation Specialist
 jnorris@eaa.org
 888-322-4636 ext. 6806
 920-426-6806

Charlie Becker
 Director - Aviation Services
 cbecker@eaa.org
 888-322-4636 ext. 6530
 920-426-6530

Member Line
 888-322-4636
 info@eaa.org

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Message From Headquarters

Joe Norris, EAA Staff

Welcome to "The Safety Wire", the rebirth of the Technical Counselor/Flight Advisor News, or for those who have been around long enough, the Designee Newsletter. This publication is intended to be an avenue for two-way communications between EAA staff and our volunteers in the field. It will be published four times per year.

I want to emphasize "two-way" communications. **In order for this newsletter to be of value to all of us, we're going to need input from all of you. Tell us what you're seeing in the field, and what you're hearing from the members. Pass along your tips and tricks.** Don't be shy! We're happy to hear from you and eager to share your input with your fellow Technical Counselors and Flight Advisors, who will in turn share the knowledge with the EAA members they talk with.

The deadline for conversion of ultralight trainers and "fat ultralights" to experimental light-sport aircraft (E-LSA) is rapidly approaching. One question that's been asked quite frequently is whether it would be better to certificate the aircraft as ELSA or amateur-



Joe (right), a DAR, issuing an airworthiness certificate to Al Beyer's Zenith Zodiac.

built. In this issue you'll find a table that compares the two certification categories. This should help when offering advice on the subject.

I hope you enjoy this issue of "The Safety Wire". I look forward to hearing from many of you, and sharing your input in future issues!

Amateur-Built Fatal Accidents in FY05 & FY06

The following information was provided to EAA from the FAA Office of Accident Investigation. Not surprisingly, most fatal accident occurred during VMC during warm weather months.

- First & second flights accounted for 6% of fatal accidents
- Loss of control was the most com-

mon cause for each year

- 17 (40%) in FY06
- 34 (55%) in FY05
- 25% of accidents in amateur-builts were fatal vs. 18% for all of GA

This data drives home the need for the Flight Advisor program and transition training.

10 Common Problems to Look For During A Technical Counselor Visit

Chuck Burch, TC #1093

After serving as an EAA Technical Counselor for some twenty-five years, I'd like to share my experiences and the most common problems found. I have to say I've looked at a lot of great looking projects of both plans built and kit type. The problems I've mentioned below are from over twenty-five years of visits and these problems are not the norm. The bottom line is our goal to have safe, airworthy airplanes and not to cut up someone's project. The project is a learning experience with the end product suitable for safe flight. The ten most common problems that I have found over the years are:

1. Not enough threads exposed out of an elastic stop nut.
2. Elastic stop nuts used on drilled bolts that are intended for castle nuts.
3. Weight and balance not complete and no idea how to calculate it.
4. Landing gear or tail wheel mounted out of alignment.
5. Unapproved changes on restoration of certified vintage aircraft.

6. Bolts pointing up instead of down.
7. Plywood gussets on wing ribs that curl up at the edges. Builder used weights instead of staples or aircraft nails to attach gussets during glue set time.
8. The use of Teflon tape on fuel system pipe threads instead of approved pipe dope.
9. The use of non-aircraft hardware, hoses, etc.
10. Aircraft paperwork. This includes a builder's log with project construction photos, material and kit receipts and your Technical Counselor visit reports. Please remember that they are documents that belong in the aircraft records and are important for registration and airworthiness certification.

I hope my experiences here will help both builders and newer Technical Counselors in their quests.

Chuck is an A&P Mechanic, US Navy aviation structural mechanic, builder of an Oldfield Baby Great Lakes bi-plane and has rebuilt several vintage aircraft.

Building from scratch—Still a Viable Option

Excerpted from an article by Ron Sutton, TC #4620

"Scratch-built" is the term often used to describe the way homebuilt aircraft were built when the EAA was first formed. These aircraft were built from drawings or blue prints, or sometimes from a concept that existed only in the mind of the builder. Builders would select the design to build, buy the plans and get started. Some of the aircraft drawings were nothing more than an elaborate three-view sketch. The builder had to read the plans and "fill in the blanks" as he or she progressed through the project.

So, with the prints in hand, most builders spent hours just studying and thinking, trying to get some inkling where to start. The list of materials, if a list existed, usually listed those materials used to build the prototype. Some aircraft didn't have a list of materials, so the builder had to use the plans and his or her own knowledge of aircraft construction to develop the list themselves. In either case the builder had to go out and "scrounge" the materials from various sources. Just building up a set of wood wings could turn into an ordeal just short of going into the Alaska forest and cutting down a Sitka Spruce tree to get wood spars and cape strip! Such was the life of a scratch-builder.

All the skills that go into the building an experimental aircraft are the same skills that go into a certified aircraft.

Woodworking, sheet metal, welding, riveting, covering, and electrical, not to mention all the expertise that goes into the firewall-forward area. These had to be learned as the builder proceeded with his or her project. This often led to projects that took years to complete. The drop out rate for scratch-built projects is probably greater than 50 percent, and many projects passed from builder to builder, being completed and flown by someone other than the person who started the project.

The big advantage of scratch-built homebuilts is cost. The "out of pocket" cost is much less than that of any kit. You trade money for time, using your own labor instead of paying for someone at the kit vendor to build components of the aircraft. Scratch-building also allows the builder to spread the cost out over time as well, purchasing materials as needed instead of buying the kit "up front". Scratch-building is definitely the way to get the most "bang for the buck" in homebuilding!

The satisfaction and pride that comes with building each and every part in your own aircraft by hand is beyond description. In our current kit-oriented world, scratch-building is still a viable choice!

Experimental Amateur Built VS Experimental Light-Sport Aircraft

Until 1/31/2008, a unique opportunity exists for builders to choose between two ways to certificate their homebuilt aircraft. This assumes the aircraft being built can fit within the definition of an LSA. The table to the right summarizes the key aspects that should be considered. **Overall, the basic guidance to builders finishing up their projects is that experimental amateur built (E-AB) is still the way to go.** However, you may want to go over the following questions with your builders. It just might be that experimental light sport aircraft (E-LSA) might be the better option for their situation:

1. If building from a kit: Do you have clean “chain of ownership” paperwork legally transferring the kit from the kit manufacturer to me?
If no, consider E-LSA
2. If the project was purchased from another builder in process, do you have enough documentation (e.g. builders log) to show it was amateur built?
If no, consider E-LSA
3. Would you like co-owners or future owners of the aircraft to be able to earn a repairman certificate?
If yes, consider E-LSA

If E-LSA sounds like the better choice, have the builder contact EAA’s Aviation Services department 888-EAAINFO to verify it is the best bet.

	E-AB	E-LSA
Basic qualification	51% or more of the aircraft must be built by amateurs for recreation or education	Must meet the LSA definition
Documentation of construction required?	Yes, must have builders log available	None required
Can be flown by Sport Pilot?	Yes, if meets the LSA definition	Yes
Registration with FAA	If built from a kit, must provide complete chain of ownership from kit manufacturer to you	Easy, no chain of ownership info required
Flight over densely populated areas	Ok after flight testing	Ok after flight testing
Can be rented by students for flight instruction	No	Yes until 1/31/2010
Insurance available	Yes	Yes
Flight test period (minimum)	40 hours	5 hours
Repairman certificate	Available only to primary builder, non-transferable, Cost: Free	Available to anyone who owns the aircraft. Must attend a course and pass the test Cost: \$300-500
Who can perform maintenance and repairs?	Anyone	Anyone
Deadline to complete certification	No deadline	1-31-2008

Amateur Built Aircraft Certification Kit from EAA

When you are out doing TC visits, please make sure the builder is aware of our AB certification kit. For just \$12.99 for members, this kit includes everything you need to register and certificate a new experimental amateur-built aircraft. The 15-page, step-by-step Certification Guide walks you through the entire process—from getting an



number to the aircraft inspection and provides samples of how to complete each required form. The certification kit also includes all FAA forms, Experimental sticker (in black), dataplate, and a convenient placard decal sheet. Just call EAA at 800-564-6322 to order.



Safety Programs
 PO Box 3086
 Oshkosh, WI 54903-9977

Phone: 888-322-4636 ext. 6864
 Fax: 920-426-6560
 Email: Safetyprograms@eaa.org

Mailing Address Line 1
 Mailing Address Line 2
 Mailing Address Line 3
 Mailing Address Line 4
 Mailing Address Line 5



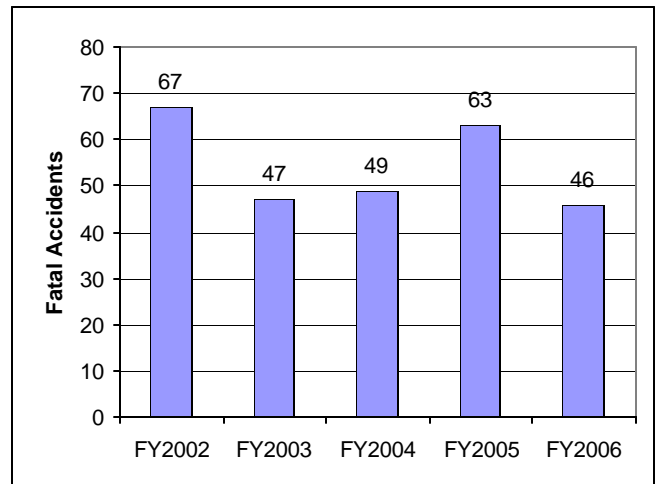
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The FAA Dashboard

Did you know that the FAA has a “dashboard” that tracks just fatal accidents by all segments of aviation? This is the scoreboard that the FAA Administrator uses to track the FAA’s performance and the effectiveness of their work. It is interesting to note that the dashboard doesn’t include incidents, non-fatal accidents, or any other data; just the number of fatal accidents. This is what really matters to the FAA. Not surprisingly, the FAA sets goals each year to reduce the number of fatal accidents for each segment of aviation. The FAA turns to certain groups for each aviation segment for help in achieving it’s annual goal. For EAA, we are held accountable for all of experimental aviation and looked heavily upon for Light Sport activity as well. If there is an up-tick in fatal accidents, the FAA knocks on our door for answers and help in fixing the problem. Of course, EAA is really just the collection of our members so we here on staff turn to you, the key volunteers out in the field, to make a difference.

In future editions of Safety Wire, we’ll be sharing where we stand on fatal accidents. Hopefully, this information will be of use in your TC visits and FA sessions. The

secret to success for the Amateur Built movement has been the continuing trend toward safer operations. The FAA will continue to support Amateur Built operations and expansion of privileges as long as our safety record improves. You are the key component to making this happen.



Amateur Built fatal accidents per fiscal year ended Sept. Source: FAA