AUDIENCE PARTICIPATION TO BUILD A ZENITH CRUZER IN RECORD TIME

BY BUDD DAVISSON

THIS YEAR DURING EAA AIRVENTURE OSHKOSH
2014, EAA, Zenith Aircraft, and many other companies are combining efforts to demonstrate to the aviation community just how quick (and simple) today’s modern light aircraft kits are to build. And what better way to do that than with One Week Wonder, actually building an airplane during the week and doing so with nothing but volunteer labor? If you’re in the crowd watching the airplane go together, all you have to do is ask and you may get into the building action yourself. The Zenith CH 750 Cruzer kit will be opened when the show begins and will actually be taxiing when the show ends.

To summarize, those at AirVenture 2014 who want to try their hand at building an airplane can assist the crew of volunteers and actually build a CH 750 Cruzer in seven days. Start to finish. You can stand around and watch, or reach out and find that building an airplane isn’t as difficult as you thought it would be.

The goal is to have the airplane inspected and doing taxi tests, ready to fly on day seven. Because of airspace concerns, it won’t actually be flown until a few days after AirVenture folds its tent.

Zenith Aircraft President Sebastien Heintz says, “I’ve wanted to do this for many years for many reasons. Among other things, I want to demonstrate to the homebuilt community how quickly and easily a modern kit plane, in this case a Zenith, can be built. We want to prove beyond a shadow of a doubt that building an airplane is a viable project for anyone, while at the same time showing how far kits, and the support for those kits, have evolved over the years. Building a kit airplane today is a far different endeavor than it was in the ’80s or ’90s.”

In 1976 Sebastien’s dad, Chris Heintz, did a similar project at Oshkosh with mostly Zenith staffers and a few volunteers.

Sebastien continues, “Since this is an EAA project, we are working hand-in-hand with them. We want to showcase the many EAA resources and programs that are available to homebuilders to help them successfully
complete their own kit aircraft project through programs and resources such as SportAir Workshops, local EAA chapters, Technical Counselor program, etc. These will all be worked into the presentations that surround building the airplane.”

As Sebastien says, “While Zenith Aircraft Company designs the aircraft and manufactures the kit, even though we do supply engine and avionics installation packages, we count on others to supply the engine, avionics, and similar systems for those packages. So, it makes a lot of sense that these other parties also be involved with this AirVenture project, which allows them to showcase their products to the homebuilt community.”

In the CH 750 kit to be used, all of the sheet metal is trimmed, punched, and formed, but when EAA Chairman Jack Pelton starts the countdown timer at 8 a.m. Monday, no components will have been pre-assembled or even unpacked. The components will be coming out of the crates in exactly the same form a purchaser would be receiving them. Every component and item is as-found in the kit, although some, such as the engine, bolted to the engine mount and ready to be hung on the airframe, would be an available option. The only thing missing will be the elbow grease necessary to assemble the components and make them into a living, flying entity. And that’s where the Oshkosh crowd comes into play.

Heintz says, “We’re leaving the vast majority of the work to volunteers. Zenith staff will be the facilitators and coordinators of the project so that the volunteers can get their part of building an airplane done, but our people will do very little of the actual work. We plan on having as many inexperienced builders involved as possible. They are the reason that we’re doing this project in the first place. Everyone knows that a factory team can assemble their own product in record time, but that’s not our goal here. We want volunteers, some of which have been recruited ahead of time, along with those interested spectators standing in the crowd to step forward and become part of the project. Building airplanes was never meant to be a spectator sport.”

Obviously, one of the things that makes building an airplane in a week possible is the relative simplicity and completeness of modern kits such as the Zenith CH 750 Cruiser and the way the parts benefit from modern CNC manufacturing processes. Most parts have their holes computer-located so the holes in mated parts match exactly. They’re punched to final size and are ready to be deburred, put together with Clecos, and riveted.

Sebastien Heintz says, “The real work and challenge for us at the factory is the planning and coordination of the project: making sure that the various different sections are finished, when needed, so that they are ready for the next step. We will divide the volunteers into teams, and we need to coordinate everyone. Some of our volunteers will be experienced kit builders who will spend some time training new, inexperienced volunteers and explaining more about the skills needed to build an airplane.”

The work site will be near the EAA Welcome Center at the main crossroads of the AirVenture grounds. There will be interactive displays that highlight the aircraft construction process as well as helping portray the wide variety of aircraft to be found in the homebuilt community. The most interesting part of the display, however, will be the workshop area that will lean heavily on workbenches and tools borrowed from EAA staff who are building their own CH 750.

Every operation that must be performed while building an all-metal airplane will be involved in this project. So, the volunteers may spend a morning de-burring holes or helping pull rivets. It’ll change as the project progresses. Embedded in the building process will be occasional demonstrations by sponsors, when they direct the installation of their own products. For instance, Matco may help with mounting the tires on the wheels, since the tires will come to Oshkosh the same way they would come to the builder: separate from the Matco wheels and needing mounting. The same type of thing will happen with other specialty items.

The panel itself will also reflect the way in which the homebuilt community has
rapidly moved into the pre-assembled, digital age. No steam gauges will be in evidence, replaced instead by a complete Dynon SkyView glass panel system. Here too Zenith staffers will work with the volunteers on figuring out how the pre-fabbed harness and panel components supplied by SteinAir specifically for the 750 are to be installed. Like we said, building a kit today is much different than only a decade ago.

Ahead of the firewall, the volunteers will be hanging a Rotax 912iS that has been donated by Rotax, and incorporated by Zenith into one of its optional “engine installation kits,” as supplied to the customer, when so ordered.

This kind of an undertaking literally begs for it to be made into a video, so EAA will make a time-lapse video from beginning to end. This will result in a short video that, like a new flower opening in high speed, will compress seven days of nonstop building into a few minutes. Viewers can see an array of random aluminum pieces grow into an airplane right before their amazed eyes.

The conclusion of that video will be on day seven. After a designated airworthiness representative has inspected the airframe and the appropriate paperwork is filled out, the aircraft will leave its nest for the first time and be towed to the taxiway. There, after fueling and doing preliminary engine runs, a brand new Zenith CH 750 Cruzer missing only paint will make its first taxi tests.

As the aircraft rolls under its own power, what the crowd will witness is the mechanical equivalent of the proverb “It takes a village to raise a child.” The very concept of an individual actually hand-building an airplane sounds absurd to those not familiar with EAA. But the concept of amateur-built aircraft, as represented by this particular Cruzer, has been the result of long-term nurturing that has, over the years, been provided by the community we call sport aviation. And a critical ingredient in that nurturing is a passion for what many see as a machine, but which we know actually represents a portal into the magical kingdom of personal flight. To many within our own village, the concept of building that magical machine seems beyond their grasp. Hopefully, through the One Week Wonder project, would-be builders will be convinced that the concept is neither as complex nor as unobtainable as it would seem, and they’ll take that critical first step into experimental amateur-built.

EAA will be announcing additional ways for qualified visitors to get involved both before the convention and on the grounds. Check the EAA website for updates and details as AirVenture grows closer.

Budd Davison is an aeronautical engineer, has flown more than 300 different types, and has published four books and more than 4,000 articles. He is editor-in-chief of Flight Journal magazine and a flight instructor primarily in Pitts/tailwheel aircraft. Visit him on www.AirBum.com.

AVIATION COMMUNITY UNITES BEHIND ONE WEEK WONDER

More than a dozen companies are pitching in to support our unique One Week Wonder airplane-building project planned for EAA AirVenture Oshkosh 2014.

Zenith Aircraft has donated a CH 750 aircraft kit. The Zenith CH 750 is an economical all-metal light aircraft available as a Cruzer (for cross-country operations) or STOL (short takeoff and landing) model.

Rotax has contributed its new 912iS engine, which features the latest technology with a single-lever control, fuel injection, and extremely efficient fuel burn. In 2013, Rotax received EAA’s August Raspet Award for innovation such as the 912iS engine that advanced sport aviation technology.

Skytek Aircraft Services Ltd., which designed the Rotax 912iS firewall-forward installation for the CH 750, is providing a Rotax Engine Installation Package (REIP) kit. In addition, Dynon Avionics has donated a complete glass cockpit, featuring the new SkyView with comm radio, intercom, transponder, ADS-B weather and traffic, and new control panels.

Aircraft Spruce & Specialty, one the world’s leading aviation and pilot supply companies, is also backing EAA’s unique building project with extensive promotional support before and during AirVenture 2014. Other companies already committing to One Week Wonder include Poly-Fiber, Sensenich, Sennheiser, Scheme Designers, SteinAir, Matco, and Flightline Interiors.
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Watch (and join us) as we build an entire Zenith airplane from a factory kit – from start to finish!

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Zenair Celebrates 40 Years; Zenith Ships 10,000th Kit

**ZENITH AIRCRAFT COMPANY** has now shipped 10,000 sets of plans to aircraft builders in more than 50 countries. Most sets of plans are sent with complete or partial aircraft kits, though some go to builders who prefer to scratchbuild the aircraft.

“We allow our customers to choose how to build their own airplane, whether as a scratchbuild project or from a complete kit or anywhere in between,” Sebastien Heintz, president of Zenith Aircraft, said. “It’s not uncommon to see people begin with basic materials and then upgrade to a quick-build kit; others might start with a quick-build rudder kit and then order basic materials for a scratch-build program because they enjoy the construction process. By far, however, most opt for the complete kits so they can get to the flightline faster.”

With options for straight or amphibious floats, skis, and tundra tires, Zenith aircraft can be used for a wide range of mission profiles. Detailed plans for the two-seat Zenith Aircraft designs start at $425 a set. Richly illustrated, the sets contain step-by-step guides with all the information needed to build a complete airplane. Blueprints are professionally drafted using modern computer-aided design software.

Zenith Aircraft will host its first “Engine Day” at Sun ‘n Fun on Friday, April 4, from 10 a.m. to 2 p.m. The event will be staged at the Zenith exhibit booth and is open to everyone.

Zenith has invited all major manufacturers of 65- to 150-hp engines to participate by putting their firewall-forward packages on display for Zenith kit customers and the public. Engine reps will be on hand to discuss the features of their powerplants.

Meanwhile Zenair Aircraft, Midland, Ontario, is celebrating its 40th anniversary this year. Over the past four decades, aeronautical engineer Chris Heintz, founder of Zenair Aircraft, has developed a dozen aircraft designs. Today, Zenith Aircraft Company markets kits for four of Chris Heintz’s most popular and versatile concepts: the original STOL CH 701 Sky Jeep, the STOL CH 750, the CH 750 Cruzer, and the low-wing CH 650. Additional Heintz designs are built and sold by Zenith’s sister company, Zenair Ltd. in Canada.

For more information about Zenith aircraft designs, visit [www.ZenithAir.com](http://www.ZenithAir.com).

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*EAA Experimenter*