

Pike's Peak Flyer

The Voice of EAA 72

<http://eaa72.org>

September 2016

All About Projects!

By Mike Jerger

Tonight I had the pleasure of talking with **Herb Heaton** of the chapter. He has been working on a Zenith CH 601 XLB. This is another of Zenith's low-wing models. All Zenith models are fully aluminum skins.

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The 601 has been around since 2001. Like most Zenith airplanes, this model is a two-passenger side-by-side seater. It accepts any of six different engines and flies with stability and reasonable speed.

Herb fitted his airplane with the Subaru 1.8 liter opposed four-cylinder water cooled engine. This model of engine may be on the small-size end of the Subaru series of engines, but this one has been re-worked to put its power output in the upper range with the larger models. His engine has a turbocharger on it, allowing it to crank out about 125 horsepower on a dynamometer. In this

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Some of you may recall a couple newsletters back the **Michael Jerger** showed up on the airport with a project in tow in September 2015. His is a Zenith CH 601 HDS, a side-by-side two-seater. HDS stands for heavy duty speed wings. The wing thickness is 18% of the wing cord. This makes for a very docile aircraft with medium speed as far as amateur built airplanes go.

Project Tour

Date: Saturday, September 24th

Place: MLAA Hangar, 13550 Piper Lane, Peyton, CO

Time: 9:00 AM

We'll start out at the regular meeting place for a little business and refreshments and then start the tour. We have an attractive itinerary that is still being worked out, but we are likely to visit:

Bob Hall Brian Esch Mike Jerger
Herb Heaton Mike Cranford
Tracy Tomlinson



For giggles and grins, the wings were mounted for the first time in their existence. There is no photo proof the wings were mounted prior to August 2016. The project is taking shape! It got pushed around outside on pavement with Nathan at the controls and brakes. He proved he can skid tires if need be.

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Herb Heaton's Project

(Continued from page 1) Herb

airplane frame, that will provide a lot of get up and go.

The fuselage was constructed almost in its entirety from paper diagrams. Using his mechanical design skills, Herb would order the skin sheets from Aircraft Spruce along with all the many little parts and pieces necessary to hold them together into a fuselage and wings. Some things that he did not cut and bend himself was the landing strut up front, spring landing gear for the mains, and the canopy. When looking at the airplane, of course there are the brakes, wheels, instruments, and tires.

Go to <http://www.zenithair.com/zodiac/xl/specification.html> to get an idea of performance. With a wing loading of under 10 pounds per square foot and a wing area of 132 square feet, that translates into fairly short runway, really responsive handling, and a fairly short landing strip needed.

Top end speed is not as speedy as an RV, but certainly faster than a Cub. You can still make a long trip on a good day if you have the patience in this model.

Herb took on the task of making his own wing ribs using jigs he also made himself. Now, building a perfectly rectangular wing using the same rib die is fairly easy. But the plans called for a slight taper in the wings from root to outboard. That meant Herb had to decrease the size of the wing rib dies at every wing rib station. This author would have taken the easy way out and made a rectangular wing; it would have been a lot simpler. But Herb followed the Zenith plans to the letter. In the end, the wings look really good, just as good as if done on a mass-production wing jig.

The XLB wing came after Zenith released a decree to strengthen the wing spar. Some early builders got too aggressive with their airplanes, pulling g's that they should not have been pulling. A few accidents prompted the decree to take already-built wings apart and strengthen the wings with steel reinforcement. That cost Herb some time in the construction process, but he did the upgrade and made the wings look new again.

When asked where he first started building, he said it was in one bay of a two-bay car garage. Only after the fuselage

got too long and the wing storage too bulky, did he seek out a hangar at Meadow Lake.

There is a **project tour coming up!** Get on the Chapter 72 web site and read about the details. Herb will try to have his hangar open for anyone to come and see his project. Last year it was a popular stopping point for almost every tourist.

Although this author took photos of his airplane, Herb's project looks a whole lot better when standing next to it, taking in various dimensions and envisioning what it will look like when fully assembled. Decal and paint work is really good.

The instrument panel layout is impressive. If you are thinking about building a plane, keep the workmanship and features of this one in mind. And if you talk to Herb, he will tell you some the engineering obstacles he had to overcome to put this project together.



Mike Jerger's Project!

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Here are a few memories recalled when looking at the photographs taken during restoration:

Recall the project spent around 15 years in an open Texas barn. It needed a lot of cleaning and going over, looking for dirt and parts that needed to be replaced because they were either rusted or dry rotted.

Recall that Mike and Nathan Hawkins hoisted up the fuselage and laid it on its side. This provided great access to the landing gear struts and the underside of the fuselage. If you are rebuilding a project, laying the fuselage on its side has great advantages, especially if you are going to work on independent straight landing gear struts, like what the 601 HDS has. What a pain they were to work on! It is no wonder that Chris Heintz chose spring landing gear for all his later low-wing models.

After all undercarriage work was done, the fuselage was rotated back to sitting on three wheels. Since that day, Mike and Nathan worked on mounting and upgrading the engine: new starter, alternator, took apart and cleaned the magnetos to factory-new condition, new spark plug wiring set, cleaned the carb and the air filter box (Nathan sand-blasted the air filter box. After blowing the dust out of it, it looked like it was brand new again).

Whenever a new opportunity came along, cleaning took place. One can take a project like this and spend a few days getting dirt and rivet heads out of it. But turn the fuselage and wings over, you will continue to find more loose dirt someplace. That is where a 40-year-old canister vacuum cleaner with a flexible hose earns its keep. It gets into corners where the human hand cannot reach.

Mike purchased 50 feet of soft aluminum fuel line and Nathan cut it, flared the ends, and installed it. Taking on the three gas tanks soon followed. Mike cut about 4 inches off the back of the original header gas tank because instruments would not fit in the instrument panel otherwise. Mike fitted a 3000-series piece of soft aluminum sheet to the back of the tank and took it to Mr Anthony Sweet. Anthony is one of very few welders near the airport who can do a good job welding up tanks of thin aluminum sheet metal. Anthony welded up the

header tank with a new back and the wing tanks per Mike's request.

The tanks were test fitted repeatedly to ensure they would still fit into place after they would receive a welding modification.

All three tanks were filled with water to the brim and allowed to set for a few days in an effort to find any more pinhole leaks. They are still setting, waiting for a judgment call.

Here and there, little independent improvement projects were taking place. Mike engineered a new oil filtration system, vastly superior to the crude screen filter that came with the engine. The design is a copy of one seen



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All About Projects!

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on the firewall of a \$200K Beech in for maintenance. The new filter is a paper element filter from Aircraft Spruce. Its cost is about \$20 if ordered from Aircraft Spruce and will require another \$15 for shipping. Or, because the filter fitting accepts common-as-dirt Fram PH8A filters for Ford car and truck engines, the filter can be obtained from Walmart for less than \$4 when on sale. (By the way, the particle filtering size and oil flow capacity at same temperature and pressure of both filters is identical.)

The engine cooling baffling was totally redone by Nathan. Instead of using something that looks like it is 50 years old, it is new.

Nathan also installed exhaust gas temperature probes into the exhaust tubes. Mike thinks EGT temps are more useful for mixture control than simple cylinder head temperatures.

The instrument panel was disassembled and primed with

etching primer for aluminum. That primer is available for \$25 for a 16-ounce aerosol can. (If anyone wants some, Mike will sell it to you for \$2 per ounce.) That stuff is used sparingly.

For giggles and grins, the wings were mounted for the first time in their existence. There is no photo proof the wings were mounted prior to August 2016. The project is taking shape! It got pushed around outside on pavement with Nathan at the controls and brakes. He proved he can skid tires if need be.

That is enough for now. Stop by the hangar on Project Tour day, 24 Sept. Head south on Cessna drive, right at Taxiway E sign, 200 yards going west, turn hard right again and look for an open hangar door with a grey pickup truck just outside. There will be some muffins and coffee available for those who stop by until supplies run out.



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Summary of September's Video News from HQ

- ⇒ Airventure is the main source of income for EAA and AirVenture 2016 was a success according to EAA Chairman Jack Pelton, with record numbers of attendees and airplanes flying in to the convention.
- ⇒ A new member benefit is access to SolidWorks, a 3D modeling program whose output can be input to a 3D printer.
- ⇒ The recent EAA STC that allows a Dynon D-10 EFIS to be installed in some Cessna models has been expanded to include many more makes and models. The EAA website has all the details.
- ⇒ EAA HQ will be focusing on an ongoing outreach to EAA chapters. In the near future, Jack Pelton will be making personal visits to selected chapters.

Thank you for supporting these EAA Chapter 72 members!

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Visit our website: <http://eaa72.org>

**Next Meeting—Project Tour
Saturday, September 24, 2016**

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About Our Chapter

EAA Chapter 72 meets at Meadow Lake Airport. **Meetings are on Saturday, usually following the 3rd Tuesday of each month** with a Young Eagle Rally and/or breakfast/brunch/lunch. Look for the calendar of events to highlight special chapter events like Young Eagle Rallies, fly-outs, and all other chapter sponsored activities.

The Chapter Newsletter is published monthly, normally mailed and available on the website a few days before each meeting. Readers are encouraged to contribute articles, photos, etc. by submitting them to the Newsletter Editor in hard copy — email, pen/paper, as long as it's not verbal—by the first Saturday of each month.

Annual membership is \$25. Send to Sandy Martin, at 7505 Mallard Drive, Peyton, CO 80831 and start receiving the newsletter each month, attending the meetings and having a great time with sport aviation.