

Cozy Builders

Builders of the side-by-side canard craft find Puffer's plans a cut above the originals.

BY DON DOWNIE

Jack Wilhelmson of Cheraw, South Carolina, is a first-time builder within 300 hours of completing his Cozy after 2300 hours of work. The 50-year-old electronics engineer has 2000 hours of flight time with instrument and single- and multi-engine-land ratings. When he's not building his Cozy, he golfs and toys with computers.

Wilhelmson chose the Cozy because of the efficiency of the Rutan airframe design. "The Cozy has more usable space and panel space for instruments," he said. "(I liked) the dual controls. The Long-EZ is very space limited."

His Cozy's canopy, windows, cowl-ing, wheel pants, NASA air scoop, exhaust manifolds, landing gear and some mechanical parts are prefabricated; he made 90% of the machined parts including the gear-retraction mechanism and engine mount. The homebuilt's O-320 E2A engine, with 600 hours since major overhaul, came out of a wind-damaged Cherokee.

Wilhelmson had his Cozy 30% complete before the plans were finalized. He felt that Puffer's plans, details and methods were greatly improved over Rutan's drawings. "Nat provided me with rough copies and advice over the phone," he said. "He helped get some parts for me. I used the first cowlings, canopy and windows from the suppliers."

Wilhelmson expects to have \$18,000 invested in the aircraft, including \$7000 of avionics: two Tierra TN200s—one with glideslope receiver—two TX 720s, a Tri Nav, Apollo I Loran, Narco 150 transponder, audio panel and marker beacon.

The Cozy builder recommends a construction area that will accommodate the assembled airplane. "I used a

double garage and it cost me at least 20% extra building time." Foam core cutting is not difficult, he says, but accuracy is very important to eliminate wasted foam and excessive contouring work later; finishing and wing-strake construction were most difficult. On a similar project, he says that he would buy all foam cores pre-cut, including the fuel strakes.

The nosegear will be modified with flush fairings and gear doors. He'll install a bronze gear in the gear-retraction system for added strength over the casting, shock mount the instrument panel and move the engine two inches forward to take care of the added weight of the O-320 engine and starter. A 6-inch prop extension also will be added.

The South Carolina builder advises that he developed an allergic reaction to Safety Epoxy; he then used Rutan Epoxy for all his finishing without any adverse reaction.

Merle D. Musson, age 65, of Isabella, Missouri, is a retired instrument instructor from the U.S. Army Air Corps with over 3000 hours in the air. He built a VariEze and has been flying it for four years and chose the Cozy

because it was a basic Rutan design with dual controls, side-by-side seating and more cockpit room.

He used an almost-complete bill of materials and purchased a prefabricated cowl-ing and most metal parts. The completed aircraft will cost him about \$14,000 with \$1000 in radios. The builder has put 1400 hours into the project and expects to complete it in another 300 hours. He felt that builder support was adequate and found no difference in either detail or quality between the Rutan and Puffer plans. Building the wing flaps was the most difficult part of the project, yet he would make no changes if he were to build another. As far as advice to other builders, he says: "Jump in and get the job done."

To build their Cozy, Alan and Cathi Yarmey of Salt Lake City, Utah, converted their apartment's master bedroom, bath and closets into a workshop. During the project, Alan changed flying jobs and the couple moved to Denver, Colorado, where the builder is now flying a Lear 35 for Richmor Aviation. "I'm glad that I did not put the wing spar permanently in place before moving," he said.

Yarmey is 32 and has accumulated

To make working space to build their Cozy, Alan and Cathi Yarmey converted their apartment's master bedroom, bathroom and closets into a workshop.

Photo: Don Downie





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over 7700 hours with all the ratings from ATP, A&P, CFII to commercial glider instructor. He still has some time for photography, tennis and aquatics.

Yarmey is an almost-first-time builder: he rebuilt a Smith miniplane before tackling this project. He chose the Cozy design because of the side-by-side seating, full dual controls, more room for baggage or a third person, excellent cross-country range and efficiency and the newness of the design. He used a complete bill of materials and most available prefabricated components, including engine mounts, most metal parts, leading-edge strakes and cowling. A 150-hp O-320 from a wind-damaged Cessna 172 will power Yarmey's Cozy. He put in 1477.5 hours in almost a year of building and estimates that his total building time will be 2200 hours.

When it comes to builder support, the Learjet pilot is enthusiastic. "Support has been excellent in every way," he advised. "Nat seems very sincere in developing a safe, successful design. His newsletter and personal contacts have been frequent, informative and very helpful. He has personally intervened in problems that I had with authorized suppliers of Cozy parts. This has made the construction project very enjoyable."

Yarmey felt that the Cozy plans were an improvement over the Long-EZ drawings because "many, many hints

and ideas were included in the Cozy plans that were derived from the problems and experiences learned by Vari-Eze and Long-EZ builders."

Predictably, the transport pilot plans to install a full IFR panel with Loran and digital monitoring equipment. He expects to have \$18,000 to \$20,000 invested in the project, including \$6000 to \$8000 in avionics.

"Nat Puffer has done a truly excellent job with the plans for the Cozy and his newsletter and builder support is great," said Yarmey. "All in all, I have no doubt that I made the right choice deciding to build a Cozy. But it's time to stop dreaming. I have a very understanding supportive wife who has other ideas for the master bedroom. And my twin brother Bob in Dallas (Texas) is finishing his Long-EZ and wants to plan some trips together. So it's time to get back to work. We definitely like it Cozy!"

Ulrich Wolter chose the Cozy because of performance and "... my wife (Linda) refused to be a backseater."



Robert B. Chambers

Ulrich Wolter built and flew the first plans-built Cozy. Its first appearance was at the Oshkosh fly-in and it's seen here at the Kerrville fly-in.

Bill Cotter of New Brighton, Minnesota, is a 34-year-old project engineer who started building a Long-EZ in mid-1982, but changed over to the Cozy because of the side-by-side seating, larger instrument panel and dual controls. This first-time builder's project is 60% complete, but has not kept track of the time evolved. His O-235 engine was found through *Trade-A-Plane*; the builder had looked at a larger O-290 engine but felt that the weight and balance would be a problem, so he stayed with the plans. The only prefabricated parts he has used were the welded units.

Cotter reports very good builder support and feels that the Cozy plans have more details than the Long-EZ drawings. He expects to have \$14,000 in his project when completed with \$2000 of that total in radios. His advice to other builders: "Be prepared to work." His problem was finding time to do it. Cotter's only modification was the addition of two attach points for a child's seat in the back. His first long cross-country will be to visit his parents in Philadelphia, Pennsylvania.

First of the plans-built Cozys to fly and arrive at Oshkosh '85 belongs to Ulrich and Linda Wolter. Ulrich is an Air Force jet pilot stationed in San

Antonio, Texas. At age 33, he is a 2300-hour instructor and evaluation pilot who takes the time to ski when time (and weather) permits.

Ulrich said that he liked the performance of the Long-EZ. "However, my wife refused to be a backseater. At that time there were no plans available and Nat Puffer didn't plan on making plans." There was no bill of materials when the military pilot started, but he was able to obtain a prototype turtle-back and cowling. His previous building experience had been with model airplanes only, but he reported nothing really difficult to build. He said, "The fuselage with gear, turtledeck, canopy and all the details is rather time consuming. Be dedicated and patient. Don't worry if you don't understand all the details the first time. They will make sense later."

Ulrich felt that the Cozy plans were more detailed and looked nicer than the Long-EZ plans, but he noted that the Rutan plans are a few years old.

The Texas builder installed a larger, 150-hp O-320 engine, added a little

Although Burt Rutan's quitting the plans business doubtlessly boosted Cozy plans sales, Puffer believes the appearance of the first plans-built version at Oshkosh was more influential.

more fuel, nosegear doors and performed some minor design changes. He has about \$24,000 in the project including \$7000 in avionics. He notes that he has had excellent builder support: "Nat always has time to answer your questions. However, he doesn't want to talk about bigger engines than the O-235." Ulrich's Cozy took the Grand Champion award at the 1985 Kerrville fly-in.

As we sat under the wing of his No. 1 Cozy at Oshkosh with Ulie Wolter's plans-built plane parked alongside, Nat said: "As long as we have good builders and good pilots, we'll stay in business."

Cozy builders, like most others, are innovative. Bud Guderian of Las Vegas, Nevada, worked with his son-in-law for a period of time on both a Cozy and a Long-EZ before the Long-EZ project was moved to Tempe, Arizona. Bud spent a month adding 4 feet to his shop—now 19x12½ feet with two 5-foot doors—so that he will be able to roll the Cozy in and out and flip it over.

"I've got sloping-beamed ceilings in my house with no attic and I've hung my two wings, two winglets, center span and canard from the ceiling in my bedroom," the builder explained. "It's a great place to store parts out of harm's way. Of course, when I attach the winglets to the wings, I'll have to store them in the garage."

The Las Vegas builder plans his first flights with a regular wooden propeller, but is interested in a new German variable-pitch propeller that is planned for Voyager. "Sounds like it would solve high-altitude takeoffs and also shorten the roll on landing," he said. "I'm sure I'll get a wood prop to start with and buy the variable one later."

Tackling a homebuilt project like the Cozy makes a lot of changes in a builder's life. Bob Long sent the Puffers a change of address form because: "I figured that in order to do a good job on my Cozy, I would need a better work area than my small one-room apartment, so I went out and bought a house. It has a big basement and a two-car garage."

Another builder, James Spencer advised Puffer: "I agree that my Cozy plans are better than the Long-EZ plans. A number of construction details and minor changes seem to be the more effective way of doing the construction. The side-by-side makes it much more pleasing to fly. I was a bomber pilot, not a fighter jock. I like help with navigation and room in the cockpit."

One young, recently married couple, Ron and Trish Lorimer of Tucson, Arizona, are building their Cozy in the living room of their mobile home and report that it seems to be working out quite well. Cozy, isn't it? □

