

THE COZY NEWSLETTER #26 July, 1989

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BUILDER SUPPORT

It is mandatory that all Cozy builders have newsletters #4 - #26 and a continuing subscription to future issues. The newsletter is our principle means of builder support and we rely upon subscriptions to off-set the cost of builder support.

We have noticed a gradual decline in newsletter circulation which concerned us, So we sent out a questionnaire to all plans customers who were behind in their subscriptions. You might be interested in the results:

No response 17

Moved, forwarding expired. 32

Sold plans 6

Wish to sell plans. 19

Forgot to renew. .115

We are grateful to you who renew on time and send us your new address when you move.

RESALE OF PLANS

When we are contacted by a new builder, we always ask where he got his plans, so we can update our records. Recently, two new builders (we believe there is also a 3rd) told us they had purchased plans from the same person, a Mr. DeGrasse, in Ranchos Palos Verdes, CA, who was advertising unused Cozy plans, but who had not purchased plans from us. Upon checking with the builders, we learned that what they received were photo copies, so we told them to return them to the seller and demand a refund, and we would help them locate an original set. We also contacted Mr. DeGrasse, who claimed he purchased the copies from a builder in Canada, whose name he couldn't recall. We have formally requested the name of that person, because the plans not only are copyright protected, but the buyer contractually agrees not to copy them or build more than one airplane from a given set of plans. This is not a matter to take lightly, because the law provides for both civil and criminal actions, with the guilty party paying all legal fees.

Because of this incident, we are instituting the following policy: We will not support any builder who has not purchased plans from us or Co-Z Europe, unless that builder verifies that he has original, unused plans, supplies us with the name of the person he purchased those plans from, and we can confirm that that person purchased plans from us, and that person requests that his ownership be transferred. We will charge a \$20 transfer fee.

SUPPLIERS

We try to maintain good relations with our authorized suppliers, so that if any problems arise, we can help. We don't drop a supplier unless there is good reason. We have no influence with unauthorized suppliers, so if any of our builders are burned, we are unable to help. We don't encourage builders to have components made at custom shops, because most of them cannot afford to employ skilled workers, nor can they afford to let them spend the extra time required to do top quality work. The best quality work generally is done by the builder who has a personal stake in the outcome.

Our authorized suppliers are:

1. Basic materials

Wicks Aircraft, 410 Pine St., Highland, IL 62249, (800) 221-9425

Aircraft Spruce, Box 424, Fullerton, CA 92532, (800) 824 1930

Alpha Plastics, 8734 Daffodil, Houston, TX 77063, (713) 780-0023

2. Metal Parts

Brock Mfg., 11852 Western Ave., Stanton, CA 90680, , (714) 898-4366

3. Canopy & Windows

Fox Light Inc., 8300 Dayton Rd., Fairborn, OH 45324, (513) 864-5607

4. Cowling, Turtleback, Main & Nose Gear

Feather Lite, PO Box 781, Boonville, CA 95415, (707) 895-2718

5. Propellers

Great American, 1180 Pike lane, #5, Oceano, CA 93445, (805) 481-9054

B & T Props, 3850 Sherrod Road, Mariposa, CA 95338, (209) 742-6743

6. Exhaust system

Sport Flight, 22267 Powell Road, Brooksville, FL 33512, (904) 796-1874

SUN AND FUN 89

We attended Sun & Fun this year. This was our 3rd time. It is a long trip so we don't go every year. Weather was good on the way out. We sighted one of the tethered, customs aerostat blimps at 10,000' along the border at Deming, NM. Make sure you have up-to-date charts when flying along the border, because there are new, restricted areas to keep you from flying into the cables. We had a hefty tail wind. At one point an air traffic controller asked what we were flying, because he was tracking us at 200 kts. When we replied "a Cozy", he said, "I didn't think those things would go that fast!"

We stopped overnight at Mobile AL and enjoyed fraternizing with a Mooney group. They arranged a \$108 room for us at Stouffer's Hotel for only \$39, and free transportation from and to the airport, as well as to the best seafood restaurant we have visited in a long time.

Arrivals at Lakeland seemed to be just as congested as Oshkosh. A Piper landed in the woods, but apparently there were no serious injuries. Five Cozys were there. We shared a car and condo with our good friends, the Wilhelmsons, and hosted an impromptu cocktail party for Cozy and EZ types. We

enjoyed meeting a number of our builders, including our former neighbor in Mesa, Jim Turk. He entertained us to a T-bone steak dinner to commemorate old times--thank you, Jim!

Vance Atkinson and Ken Francis had to leave on Tuesday. The weather was IFR with rain all day, but it didn't stop them. We decided to spend the rainy day at the Epcot Center in Orlando.

We had planned to enter the Mark IV in the race on Wednesday, but a bad weather system was developing along our route home, so we headed back Wednesday morning. We got as far as College Station, TX, before being forced to land. We spend the next 1-½ days in a motel watching the weather channel. We finally sneaked out on a special VFR clearance. We planned to go the rest of the way that evening, but a bad left mag (87 hrs. since new) forced us down at El Paso. Our friends and Cozy builders, the Porters, came to our rescue, and with a new mag installed, we finished our trip Saturday morning. We can almost always count on good weather in Arizona (plug!).

KANAB

Over Memorial weekend, we attended Shirl Dickey's "Honk Out" at Kanab, UT. Airspace over the Grand Canyon is now restricted up to 14,500', so we elected to fly around on the way up. We arrived earlier than most, and enjoyed watching the arrival of other EZ types. 30 planes showed; 2 Cozys, 1 Navion, and 27 Variezes and Long EZs. We had 30 kt. winds the entire 3 days, so our tents took a beating. one of the highlights of the "Honk Out" was the race on Sunday. The airplanes were divided into heats based on horsepower and type. Each heat was started in the air, with all airplanes flying abreast across the field. The last 2 heats, Stock Varieze and Unlimited, were combined because of increasing wind and turbulence. We were in the unlimited class, and the air start with 10 airplanes was a little hairy. The Mark IV finished 3rd in a class of 4, beaten by a 200 hp and 180 hp Long EZ. We had a TAS of 207 mph, but the strong cross wind cut our ground speed to 198 mph. Incidentally, I believe Shirley was the only passenger participating in the race. She had some initial reservations, but thoroughly enjoyed it. That evening we had a steak fry, presentation of awards, and then shared fellowship around a campfire. Several notables came out from town to give us a belated welcome (they didn't know we were coming) and offered their hospitality to return next year. The next morning Bruce Tift gave the police chief a ride around town in his Long EZ.

On the way back we elected to fly over the Grand canyon at 15,000' , monitoring fingernails and lips for signs of anoxemia (there were none). We are looking forward to Shirl Dickey's next event, Jackpot.

Co-Z EUROPE

During May we were surprised and pleased to have a visit from Uli Wolter. Co-Z Europe is running low on plans and Uli must decide whether or not to have more printed. He said that he would like to up-date them with all of the corrections and changes to date, and then make some additional changes. He would standardize on the 0-320 engine, the Roncz canard, and recontour the canopy for additional head room, the turtleback and cowlings. Uli was the first to prove the 0-320 installation, now has a Roncz canard, and is working on molds for recontouring. We said that since he owns the Cozy design, he is entitled to make any changes he wants, as long as he represents the plans as those of Co-

Z Europe, and gives the airplane a new name. The agreement not market plans in the U.S. applied only to the Cozy design by Co-Z Development.

Uli then asked if he could purchase the design rights to a 4-place, and market plans in the U.S. This situation is somewhat different in that no detailed plans were ever prepared and published by Co-Z Development. We said that as long as Co-Z Europe prepared the detailed plans, and represented them as their own, we would have no objection.

If Co-Z Europe proceeds, it would accomplish several things:

- 1) The home-built business in this country is rapidly developing into an expensive kit market. Fewer and fewer plans are available for building an airplane at minimum cost. As a result, many would-be builders are being left out simply because of cost. Also, some builders derive more satisfaction building from basic materials rather than just putting together a pre-molded kit. Continuing the availability of plans would help more people to become involved in building.
2. Burt Rutan was amazingly successful in developing and refining the canard concept for homebuilders, but he withdrew from the homebuilt movement. The Cozy design copies much of Burt's technology (under license), which we believe is the reason for its success. This design has helped to keep Burt's technology alive, and we believe it enhances the reputation of canard aircraft.
3. If Co-Z Europe assumes responsibility for the 3-place, and possibly also a 4-place, it would satisfy our desire to limit both our involvement and also our liability exposure in this country.
4. The availability of detailed plans for a 4-place would help those builders who are determined to build one, with or without plans.

FIRST FLIGHTS

We had three confirmed first flights this quarter, with several others ready to fly:

- 1) Joe J. Ehlis, Bothell WA
- 2) Bryan Giesler, Kennewick, WA
- 3) John Stamper, Penrith, England

Dear Nat,

Per our tele-con 4/17, please send me a Cozy Owners Manual. I will have some more info on our Cozy N87CZ shortly. It flew wonderfully!

Thank you, Joe Eblis

Dear Nat & Shirley,

Another COZY made it into the air. About two years later than I had hoped N117CZ rose into the sky on 4/22/89 for what is hoped to be the first of many. It was the type of first ride that we all desire. An uneventful 40 minutes later, a flight down the runway to wing waggle at all of the well-wishing friends, and then on to the runway. Back on the ground at the hanger, many handshakes, a bug or two, some kidding, and popping the cork on a bottle of champagne to toast the event.

Maximum speed on the first flight was limited to 135 kts. Initial rate of climb through 5000 ft. was over 1000 fpm. A Glasair was used as a photo plane and a Long EZ as chase. Controls were light and the Cozy seemed to be as responsive as the old Varieze (great). A second flight was made the next day. We have had rain in the desert since so haven't been up again. So far I have not noticed any adverse effects due to my having widened the fuselage six inches.

One problem I did encounter prior to first flight was finding a 6 inch prop extension that was correct. I initially had an 8 inch extension and used it for the initial taxi tests. Per the newsletter recommending a maximum of 6 inches, I ordered one from an approved manufacturer. When it arrived, it had 3/4" rather than 5/8" holes needed for the SAE #2 flange on my 0-320. I explained the problem to the supplier, who then shipped me a second one. This one was OK at the engine end, but not at the prop end. The propeller did not fit easily on the extension because of an interference between the propeller and drive lugs, and there was interference of the bolts in the drive lugs. The supplier was again notified, and he shipped me another prop extension. You guessed it, this one was like the first. I finally reworked the lugs on the second extension and am using it. I recommended to the supplier that other purchasers of extensions be notified to check for these conditions, because they could result in an unsafe installation, if undetected.

Thanks for a good airplane, Bryan Giesler

John Stamper called us from England to report that his first flight was on 5/15/89 of 25 min. duration. His Cozy weighs 937 lbs. and with battery aft he requires 60 lbs. of lead in the nose to put him at mid c.g. (John weighs about the same as I, i.e. 150 lbs.)

ACCIDENTS

We had our first Cozy accident this quarter.

Dear Nat, April 2, 1989

As you are aware, I made an emergency landing with my Cozy, and thought you would like to know the details. I did not receive any bumps or bruises even though the abrupt stop of the airplane caused my headset to come off. I believe that my not being injured was because of the integrity of the composite construction.

I had been airborne about 45 minutes and had been flying at 2000' AGL when I chopped the throttle and descended to 1000' AGL. When I opened the throttle, there was no response. I thought the engine was still idling and there was a mechanical failure of the throttle linkage. I still cannot fully explain what happened to all the fuel in the active tank; my wife and I both checked the fuel prior to my

takeoff. There was fuel in the other tank, but because of the altitude, and my thinking that I had a mechanical problem, I looked for a place to land.

Farm land in Iowa in February with snow on the ground poses challenges; plowed fields, grass waterways, etc. The bean field appeared to pose the least hazard, however, because of a road, fence, and power line, I had to execute an S-turn. I did not lower the nose gear since I was concerned about breaking it off. Unfortunately, as the plane was descending, the terrain was ascending. In the final part of my S-turn, the right wheel and wing came in contact with the ground and the plane began sliding across the bean rows at about 60 degrees.

The airplane received considerable damage on the bottom of the nose and the winglets. There was a glass separation just below the elevator opening on both sides of the fuselage. This separation is about 2" wide and 8" long. The glass inside the fuselage is cracked behind the thick pad that supports the bulkhead. One canard tip was slightly damaged. There was glass separation at the trailing edge of the right wing at the inboard end of the aileron, both top and bottom. The separation appears to be about 4" wide and 16" long. There are no visible cracks in the spar cap, but I have not yet removed the filler to make sure. The left wing was undamaged except for the bottom of the winglet.

The landing gear was severely tested. The wrapping on the left side of the bow was cracked from above the axle to the tabs. A close inspection of the tabs and fuselage attachment revealed no cracks and the gear appears to be as secure as before the landing, however, the left wheel was completely torn off. The fiberglass bow was not damaged, but the bolts holding the axle were pulled off and the threads stripped. The left disk was bent severely.

I have started the process of reconstruction of the landing gear and nose. It doesn't appear to be as big a task as I originally feared, however, I won't have the time to spend on it I'd like until the semester is out in May.

Sincerely, Rex Pershing

Editorial Comment:

We are grateful that Rex was not injured in this accident, and thank him for his candid letter which might save others from a similar experience. There are two things to learn:

1. Whenever you descend on an almost empty tank, the remaining fuel will flow forward, starving the sump, and the engine will stop. You should always descend on the fullest tank, and whenever the engine stops, you should automatically switch tanks.
2. In any emergency landing, you should always lower the nose gear. Even if it fails, it will have absorbed much of the energy, it will reduce the chance of you tipping over, and it will reduce the possibility of bodily injury and damage to

other parts of the aircraft.

OUR 3-PLACE COZY

If you recall, several years ago we decided to "soup up" the 0-235 in our 3-place Cozy, not because it needed more power, but to demonstrate an alternative to those who thought they would like more power. We sent the cylinders to High Performance Aircraft Engines, in Mena, AR, to have them blue-printed, re-ported, rods balanced, and new high compression pistons installed. The object was to increase hp and fuel efficiency by 10% without adding weight. It was determined by HPAE that the cylinders didn't have enough taper, so they chromed the cylinders. After reinstallation, we followed the break-in instructions, but we continued to have high oil consumption even after 60 hours, and this was robbing the engine of power. We complained. HPAE offered to re-top the engine, and this time use a softer chrome (apparently we weren't the only ones who had experienced this problem). This time we sent them the entire engine and asked that they run it on their dynamometer until the rings had seated. We got the engine back when we were rushing to finish the Mark IV, so didn't get around to reinstalling it until this last winter. In the meantime, we realized we couldn't justify operating and maintaining 2 similar airplanes, so we decided to up-grade the 3-place for sale. It has been in our shop for several months while I installed a new, lightweight B & C starter, a new battery, moved the master brake cylinders forward, installed adjustable pedals on the right side, put in the new stronger shock strut spring, the new shimmy damper, replaced the boost pump with the new recommended model, installed electric priming and cabin heat, repaired several finishing defects, and misc.. Other improvements. It is now ready to return to the airport and to the air again. If you know of anyone interested in a good Cozy, please refer them to me.

HORE ON PROP HUB EXTENSIONS

Following our remarks on prop hub extensions in NL #25, Bud Heyers of Wicks sent me a copy of p. 213 of their 88 catalog. They list every conceivable combination of extension length, flange type, flange diameter, prop lug, prop bolt, engine lug, and engine bolt for prop hub extensions (and crush plates) in 2024 T-3 black anodized aluminum. All you have to do is supply Wicks with the correct information. My apology, Bud!

FUEL VALVE CORRECTION

In NL #25, we-recommended the Allen valve as a direct replacement for the Weatherhead, based upon assurances from RAF and Wicks that this was the case. We should have known better and checked it out ourselves. Cozy builder Daniel Schaefer followed our recommendation and ordered one. Lo and behold he could not install it without cutting a huge hole in the seat back brace, or else machining the valve so he could install it from the front. Also, the stem was shorter, so he would have to have made a depression in the seat back, and it was supplied without a handle. He returned it.

We are using the Weatherhead and have had no problems with it nor are we able to verify that anyone else has experienced any problems up to now. If this situation changes, we will let you know.

SHOCK SPRING CORRECTION

The information in NL #25 was correct except for the phone number of Danley Die Set. We did a typo on the last digit. The correct number is (213) 685-8151. Please correct the number in NL #25.

EXHAUST PIPES

In NL #23, Vance Atkinson attributed a 5 kt increase in speed to installing a 4-pipe exhaust system. He and his friends arranged with John Queener for Sport Flight to make this system available to other Cozy builders. It is not quite and exact replacement, because it requires a cowling modification, probably just the bottom cowling, because of the extra space required for two 1-3/4" pipes. We thought it would be interesting to install a set on the Mark IV before Jackpot and Oshkosh, but we learned that John is two months behind on orders. In the meantime, we decided to try an experiment, which wouldn't require a cowling modification. We had Tom McNeilly saw our 2-112" pipes in half, length-wise, and install a partition to keep the two exhausts separated. He was somewhat skeptical about whether this would be an improvement, but when we flew a test flight, we got a 100 rpm increase in static, and a 5 mph increase in TAS (from 207 to 212 mph)! Thought you would like to know!

AIRCRAFT BATTERY INSTALLATION

We have a couple of concerns about the battery installation:

1. Security, i.e. it should be well secured, so it could not come loose if there is a sudden stoppage. We believe that it would be adequately secured on the center section spar to survive most sudden stoppages if
 - a. It is mounted in a fiberglass tray which has been floxed to the centerspar, and
 - b. If it is strapped to the firewall with a horizontal strap, or to the firewall and center spar with a vertical strap of 301 stainless steel 2" wide x .020, using two AN3 bolts through each end and large area washers, and
 - c. The battery wires are #2 welding cable, passing through the firewall, with soldered terminals which are bolted to the battery posts.
1. Leakage, i.e., it should not be possible for acid to leak out into the cockpit during flight. Lead-acid aircraft batteries may have non-spill vent caps, but they can still leak acid in normal flight if charged at a high rate. The center section spar location does not lend itself to using an acid-proof battery box, so there are two other alternatives:
 - a. A gel cel battery cannot leak acid, but they are more expensive and should not be recharged at more than 13.8 volts to avoid damage. We are using one in the Mark IV, together with a B & C voltage regulator.
 - b. Concorde makes a lead-acid aircraft battery which is manifold-vented, i.e., the cells have sealed caps and are vented through a manifold which terminates in a hose connection. Any overflow can either be piped overboard, or collected in a glass jar to be returned to the cells. We installed one of these in our 3-place. If you have trouble locating a source, give us a call.

AUTO ENGINES

We continue to get questions about auto engine conversions for aircraft. We are not engine experts, but we are reasonably sure of the following:

1. A high-performance homebuilt is not the best test bed for an experimental engine installation.
2. It will take a long time for auto engine installations in aircraft to build up the same record of reliability that already exists for the Lycoming.
3. Auto engine conversions have two additional systems, i.e. cooling and reduction, which could cause reliability problems.
4. Whatever money is spent on an auto engine conversion should be expensed, because the resale value would probably be much less than a Lycoming.

OSHKOSH 89

A Cozy forum has been scheduled for Saturday, July 29th at 8:30 AM in tent #3. We invite you all to attend. We would like to become better acquainted, have Cozy pilots and builders relate their experiences, and answer as many builder questions as possible.

FOR SALE

1. Cozy N22CZ. 250 hrs on airframe. 5 hrs on 130 hp 0-235 STOH, approx. 1100 hrs SMOH. New B & C starter, new battery, new mags. Compass, DG., ROC, AS, GH, T & B, Tach, Vacuum, EGT, CHT (4), and OT. King AP with MB, RST intercom, KX 1 nav/com with KI 205, Edo Aire RT 677 xponder with Narco Mode-C. Trays installed and wired for KNS-80, KY 196, and KR 87. (602) 981-6401.
2. Heavy engine extrusions 1-1/4 x 1-1/4 x 1/4 2024 T-3, \$59/set. 0-320 starter, \$295. 0-320 60 amp alternator, \$50. 0-320 MA-4SPA carburetor, \$295. S/W oil cooler, \$50. Long EZ dynafocal mount (will not fit a Cozy) \$275. (512) 651-9347.
3. Brock 0-235 dynafocal mount. New. Half price. (308) 382-7155.
4. 0-235 L2C 1692 TT with fuel pump, carb, mags, gen., & cooler. \$4500 (601) 562-7913 eve., (601) 287-1250 weekends.