

THE COZY NEWSLETTER #19 October, 1987

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CHANGES IN BUILDER SUPPORT

As most of you know, Co-Z Development discontinued the sale of plans on Oct. 1, 1987, for reasons discussed in the last newsletter. We have sold the design rights to Co-Z Europe, which was organized by Uli and Linda Wolter. Uli and Linda completed the first plans-built Cozy. It is a beautiful airplane which has won many awards, and which Uli subsequently flew across the Atlantic. They have been attending most of the airshows in Europe, and gotten to know any of the Cozy builders there, and are dedicated to providing the best possible builder support overseas.

Co-Z Europe will continue to sell Cozy plans all over the world, except in the U.S. There will be no more plans sold in the U.S. as of Oct. 1, 1987. Co-Z Europe will provide builder support to all of their plans customers outside of the USA. We have worked out the following agreement:

U.S. BUILDERS

Co-Z Development, Mesa, AZ, will continue to provide builder support for all U.S. builders. We will do this thru the newsletter, answering telephone calls, and answering individual letters (please enclose a SASE), as well as working with suppliers to assure the best materials available, the same as we have been doing up till now.

We will continue to sell Owner's Manuals, extra A size drawings (as long as the supply lasts), decals, etc. to our existing builders. We will be raising the subscription price for the newsletter to \$7.50/yr., effective Jan.1,1988. to better cover our costs. For those of you who have paid several years in advance, we will honor the old price thru 1988, but will adjust 1989 and beyond accordingly. We hope this is fair. There are some hold outs who still have not signed a license agreement and obtained a serial number. We will hold this open until Jan. 1, 1988, and if we do not hear from you by then, we will assume that you merely bought the plane for your library (some people collect plans) with no intention of building an airplane. As stated previously, we have no obligation to support anyone who has not purchased plans from us and signed a license agreement.

We will continue to urge you to be good builders, to follow the plans, and to operate your Cozy safely. Aviation is not inherently dangerous, but it is terribly unforgiving of poor judgment, carelessness, and/or ineptitude (to paraphrase a familiar quotation).

INTERNATIONAL BUILDERS

Co-Z Europe will be picking up support for all international builders, because there are special problems outside of the U.S. which require special consideration. We will be cooperating with them to accomplish this. Co-Z Europe will be starting a newsletter Jan. 1, 1988. We will transfer our international subscriptions to the, and to save costs, they will send out their newsletter and ours to all international builders in the same ailing. International builders should renew their subscriptions through:

Co-Z Europe
Ahorn Str. 10A
D-8901 Ried, West Germany (49) 8233-60594

Prices will be:

Within Europe - 15 DM
Outside Europe - 20 DM

Co-Z Europe will stock plans, Owner's Manuals, A drawings, etc., for international builders. They will be publishing the prices of these items in their newsletter. They are working on the problem of setting up local sources of supply for approved materials at reasonable prices, and hope to have something to report in the near future.

OSHKOSH 1987

As has been our custom, we left for Oshkosh early so we could stop off in Minnesota to visit our children, relatives, and friends. In mid-summer, we have "monsoon" weather in Arizona, and the higher humidity can result in some pretty violent build-ups over the Mogollon Rim country. So we keep a close eye on the weather and try to cross the mountains in the early morning, when the air is most stable. This year we had good weather over the mountains (relatively speaking), and the rest of the way to Minnesota, although the summer haze there was pretty thick. With one fuel stop, we arrived after about 8 flying hours.

After several days visit, we pushed on to Oshkosh. Weather wasn't quite so nice--we had to go thru a warm front with attendant low ceilings and poor visibility (which Shirley doesn't enjoy), but otherwise the short trip was uneventful.

Again this year we beat the traffic jam (of airplanes), claimed our choice space on the flight line, reserved some space for additional Cozy's, and moved to the camper we had rented in Paul's Woods, just before the ensuing downpour. The next day, other Cozy's began arriving--Ken Francis, Vance Atkinson, Merle Musson, and last but not least, Jack Wilhelmson. Last year, Jack and Ken were in a dead heat for the best Cozy, and wouldn't you know, this year Vance Atkinson joined them. It is a tough job picking the best Cozy when they are all so good--they all deserve awards, but we had only one to give. The Cozys drew big crowds of admirers every day. It warms a designer's heart when builders build such beautiful airplanes!

We had the usual gathering of Cozy builders and other builder friends in the campgrounds evenings after the air show, and would generally try to commandeer some kind of wheels to go into town for dinner. Oshkosh was unusually hot and humid this year. Temperatures up to 100° and RH close to 100%. The warm front we went through turned stationary, and hung around for close to a week. It was so steamy, a lot of people couldn't take it.

Our Cozy forum was on Saturday afternoon. We had a good turnout with a lot of builders present. Ken, Jack, Vance and Merle all praised the performance of their Cozys, and answered questions. All of the other builders present had the chance to introduce themselves and report on their progress. A number of our international builders were there as well. We discussed the legal situation a bit and the consensus was that it was ruining general aviation.

The Voyager was on display, and every morning in the Theater In The Woods Burt, Dick and Jeanna talked about the record-breaking project. They discussed a number of interesting details which hadn't been covered by the media. We were only able to attend one of the sessions. Burt explained all of the considerations (aeronautical and structural) which dictated that the design had to be a canard. He explained how take off distance increases exponentially with weight (pay attention, builders), that they had calculated what distance would be required for a full load of fuel, and just barely made it in the length available. It was extremely important for the Voyager to reach climb speed before rotation, which is the reason Dick held forward stick and dragged the wing tips, in spite of the screams over the radio. Burt explained that the heavily loaded Voyager would have been uncontrollable in turbulence, and turbulence had to be avoided until a lot of the fuel had been burned off, and Dick was

afraid to leave the controls, even momentarily, for at least 2 days. He even napped there. Considering how close everything was to the edge of possibility in so many respects, it was really a remarkable achievement.

The International Varieze Hospitality Club (IVHC--open to all composite builders) banquet on Monday evening at Butch's Anchor Inn was a sell-out crowd, as usual. Attending this banquet each year is always a must for us. You see, we started the tradition back in 1977 by hosting the Rutans at a steak fry in Paul's Woods. In 1978 we repeated, inviting also a number of Varieze builders. After that year, so many people wanted to attend, it was moved to a restaurant, where it has been ever since.

The entertainment of the evening was a skit presented by Norm Howell, whom we knew as an Air Force cadet, but now is a captain. He is also the builder of the Quickie, which he has affectionately named the "Ugly Quickling", written up in the last Sport Aviation. It was a spoof on the flight of the Voyager, except it was all about a group of guys who set out to plan and make a record-breaking flight around the city limits in a Quickie. It lasted about 1/2 hour and was so funny, it had everyone in stitches. Even the Rutans seemed to enjoy it.

BEST COZY OSHKOSH 87

The designers' awards for the best rendition of their designs are usually presented on Thursday, in the Theater In The Woods, after most have already left. We asked to present our award at the IVHC banquet, and presented it to Ken Francis and his lady, Shirley. Ken's Cozy is per plans (except for engine) and is gorgeous. The award, again this year, was designed by Cozy builder Lon Cooper. It was the right 1/2 of a scale model Cozy, mounted on a front-surface mirror, designed to hang on the wall. No matter what angle you looked at it, you could see a complete Cozy. It was just fascinating and captured everyone's attention. We are so fortunate to have such talented builders!

EUROPEAN TRIP

Our return trip home from Oshkosh required detouring around a severe line squall at Omaha, but otherwise the weather wasn't too bad. We stop over night at Albuquerque where we have friends, so we can hit the mountains in the early morning. We were home barely 2 weeks before it was time to leave for Europe. Lee Parlee (my sister) came down from Rockford again to look after things in our absence. Some of you may have been recipients of one of her neatly typed letters.

The purpose of our European trip was to visit a representative sample of European builders with Uli and Linda to learn more about their special problems. Home building in Europe is much more difficult outside of the U.S., and Uli and Linda are dedicated to helping solve as any problems for their builders as possible. Shirley and I stopped first for 4 days in England, where we visited several builders near London, met with the European Hexcel manager, and then traveled to northern England to visit 2 builders near Scotland.

After joining Uli and Linda in Germany, we traveled by motor home through Germany, Italy, and the length of France visiting a number of builders. The gracious welcome and hospitality a received everywhere we visited (including England) far exceeded our fondest expectations. Without

mentioning each of our hosts by name (for obvious reasons) I wish to thank each of them publicly for their gracious hospitality which made our trip most enjoyable.

It was quite a thrill for us to see so many good Cozys being built in so many diverse places. Some of the things we learned:

1. It is exceedingly difficult for overseas builders to obtain materials. Freight and duty from the US is very expensive. Most builders do not have the resources nor the space to order everything at once, and freight on small orders (or back orders) simply kills them. As a result, they try to purchase materials locally. Without a single approved supplier of aircraft materials, this is difficult at best.
2. In some countries, the materials used must be approved by the designer. In other countries, the only materials which can be used are those approved by the government.
3. In some countries, notably England and Germany, nothing larger than a 2-place can be built. The Cozy qualifies as a 2-place if the back seat is declared for baggage only.
4. There are varying degrees of difficulty in obtaining government approval of a design, and the completed aircraft.
5. Some countries enforce strict conformance to the design. Other countries allow changes, but then put the aircraft in a special license category.
6. Working space is a universal problem. It is unbelievable in how small a space most Cozys are being built.
7. Hard surfaced strips are scarce and expensive to use because of landing fees. Many, if not most, Variezes and Long EZs are being operated from grass strips, most less than 3,000'. This can result in greater wear and tear on propellers and gear, which builders seem to accept as part of the price they have to pay for flying.

We extend our apologies to those builders in England and Europe who invited us, but whom we were not able to visit. We found driving a motor hone on the narrow roads and through the small towns to be very demanding, and we didn't want to push our luck by too ambitious an itinerary. We elected instead to use a few days for sightseeing and relaxation. We were fortunate to visit Salzburg during the St. Rupert's festival, and then to pass through Munich during the Oktoberfest, just before returning home.

KERRVILLE 87

The Cozys did it again! Ken Francis' Cozy was awarded "Grand Champion" and Vance Atkinson's Cozy "Best Workmanship". If you recall, last year Ken was awarded "Reserve Champion", and two years ago Uli and Linda were awarded "Grand Champion". We remind you that Uli and Linda won all of the performance awards (and prize money) in the European equivalent of the CAFE 400--a clean sweep! What can we say? The Cozy is a very good design, but you builders are making it an exceptional airplane. Keep up the good work! You have some hard acts to follow!

JACK GRANDMAN FLIES! (or NOW THERE ARE 7)

August 8,1987

Dear Nat,

Cozy N41CZ first flew 8:35 AM July 25, 1987 from the Longmont, CO airport. Al Yarmey was on hand to film this event with his video camera, to lend a hand, and to inspire confidence and calmness in me. He did a great job in all ways.

Longmont's runway is only 4,200 ft. long and 5050 ft. elevation, which I consider marginal to do taxi tests. By the time I was able to get the speed set and the nose lifted for about five seconds, I had to brake hard to avoid running off the end of the runway. It is important to have a very long runway to do taxi testing to avoid overheating your brakes and possibly melting your gear legs like I did a few weeks ago. The gear legs were repaired using a fix approved by Nat which so far is working out fine and appears to be stronger than the original. Be sure to install heat shields (I hadn't) between your disks and the gear leg. Also, don't use wheel pants (I hadn't) on taxi tests and be very aware of how cumulative brake heating is. They can get very hot and the reflected heat can melt or soften your gear legs and spoil your whole day. (I have since found that the standard brakes are more than adequate even in an O-320 powered Cozy since you have the whole runway to stop and will never subject your brakes to more abuse than when doing taxi testing.)

The morning of the first flight was a pleasant 75° with no wind. I did three more high-speed runs down the runway to be sure everything checked out and then prepared for the big one. I was moderately nervous mainly due to worrying about the short runway. Could I stop if this bird wouldn't fly? Well, there were no more excuses. With Al manning the camera and a hand held transceiver at mid-runway, I lined up on the centerline, pushed the throttle forward, accelerated to 85 mph, pulled back on the stick and was airborne. The wings wobbled a little, but she was flying. My heart was in my throat as I did a shallow climbing turn around the pattern. At pattern altitude, I leveled out and reduced throttle. All the engine instruments were reading normal, so I gave Al a call. My first words were "the darn thing flies!!" I was elated, but still my hands were full so I did three circuits of the pattern and then climbed up to 8,000' (3,000' AGL) and flew slow flight and stalled the canard eight times to get the feel of airplane at slow speeds. The Cozy handles just wonderfully. Put it in a bank and it stays put, just like it is on rails. The rudders are only needed for the steepest of left turns since the rest of the time the ball stays centered. I re-entered the pattern and told Al that I was planning a low pass and go-around. However, I set up the approach, gear down, landing brake out and held 90 mph on final. It was going so well that I decided to land on the first pass. 80 to 85 mph flare and I flew it down to a beautiful landing. I pulled back on the landing brake and it slowed down very nicely. If I had braked moderately I could have easily made the mid-field turn-off 2,000' down the runway, but I let the airplane coast to the end of the runway and I turned off with the use of only light braking. The landing was easier for me than the take-off. I've found take-offs to be harder because of the pitch sensitivity. It is easy to get the nose porpoising after lift-off. Your wrist must be touching the armrest to have proper control (Editorial note: Jack has a wide, extended nose on his Cozy).

After 4.5 hrs of flying, I've found the Cozy to be a wonderful airplane with no hidden nasty quirks. I've begun a rigorous test program which will eventually expand my flight envelope to the prescribed limits. This is a very fast, high performance airplane and should be handled as such. At 8,000', 100 mph, climb rate is 1400 fpm. At 15,000', 85 mph, climb rate is still an amazing 500 fpm. This is without wheel pants at 1390 lbs. gross. Top speed at 10,000', 2600 rpm is 210 mph TAS. This is with O-320 150 hp with B & T 62x75 prop. My empty weight is 926 lbs. Thanks, Nat, for designing the nicest airplane I have ever flown!

INCIDENT REPORT - NOSE GEAR UP LANDING or DUMB DE DUMB!!

Cozy N41CZ, 6th landing, 4 hours total time on the airplane. Yes, in spite of all the built in warning features I had installed, I still managed to land with the nose gear up. I had just returned to enter the traffic pattern after having been out practicing approach to landing stalls with the gear down. I ran through my checklist and cranked the landing gear lever. I was then distracted by traffic, made my approach, greased on a beautiful landing, let it coast for a long ways and then gently applied the brakes, then WHAM!!!--I found myself staring down at the runway. The airplane slid only about 30 feet before it stopped. I shut off the engine, got out, cranked down the nose gear and pushed it to the ramp where there was a small crowd of my friends standing around grinning at me. Fortunately the only damage was a ground-off hockey puck, a small patch of missing paint under the nose and a very deflated ego. Mine! I had the foresight to install a steel plate under the nose which took most of the grinding action of sliding before it, too, ground through. There was no other damage. Well, why did this happen? I forgot to raise the nose gear after the stall series and left the horn warning disabled. I mistook the cranking action as a sign that I had put the gear down, but I had actually cranked the gear up. I was distracted at that point so didn't check the wheel well windows for "light". However, the warning lights were brightly lighted up. I just didn't notice them. I don't think I will do that again, but it sure stops fast with the nose gear up!!!

Jack Grandman

APPROVED SUPPLIERS

There have been no changes since the complete listing which was printed in Newsletter #15. Please refer to this list.

ENGINE MOUNTS

Ken Brock is the only approved source for engine mounts. He can supply either standard mounts for the O-235, or a heavy duty, short mount for heavier engine installations. The heavy duty mount is 1-3/4" shorter than the standard mount, and the attach points have been spread for 1/4" thick extrusions. The heavy duty mount is absolutely required for O-320 engines, which many builders are installing in spite of our recommendations to the contrary. Builders have been going to unapproved suppliers for O-320 mounts, and have encountered many problems, such as, engine in the wrong position (too high), wrong thrust angle, interference between mount and case, and interference between mount and fuel pump, and poor welding and, we suspect, poor stress relief. We have checked out both Brock mounts, and they are top quality, per design. Engine mounts are just too important to go with anything but the best, and you will find the best at Brock Mfg.

BUILDER HINTS

1. When you jig bore holes for the wing attach bushings, quite a bit of metal is removed, and this generates a lot of heat. One is tempted to apply a lot of pressure. One builder dislodged one of his LWA4 hardpoints (see sec. BB, Chap 19, p.12) inside the wing cavity, which is difficult to repair. To avoid a possible problem with the LWA4s in each wing, you may combine them 2 in 1 by making one piece 1/4 x 2 x 7-5/8. If you choose to do this, make a note to remind you Chap. 14, p.7.

2. When assembling the fuselage sides in Chap.6, make sure the longerons are no farther apart than shown on the firewall drawing, or you may not have room for 10 plies BID underneath the engine mount extrusions. Consider the tolerance on spacing to be +0 to -1/8".
3. High performance rudder plans are available for \$18.75 from RAF, Bldg.13, Mojave Airport, Mojave CA 93501. There is a correction to the plans, the hinges should be riveted to the rudder, not the winglet as shown on the plans.
4. At Oshkosh we examined cowlings and turtlebacks supplied by FeatherLite. Workmanship and quality is superb. They supply other prefab parts as all. Write them for details.

DESIGN CHANGES/CORRECTIONS

Owner's Manual, p. 54, add after Note 3: Take off in rain can also extend takeoff distance as much as 20%.

WANTED

Completed Cozy fuselage, with good workmanship. Contact Ted Barrow, c/o BRS Inc., PO Box 6008, Pinebluff, AR 71611

LETTERS FROM BUILDERS

We have been simply overwhelmed with letters complimenting us on the plans, on the airplane, and supporting us in our decision. We want to thank all of you for your letters. We wish we could print them all, but space simply does not allow it.

A PERSONAL NOTE

We have been involved with the Cozy design since 1979. It started out as a neat idea and a big gamble. Burt did his best to discourage us by filling our minds with doubts. Then came the exhilarating first flight, with the realization that we had a good airplane. But what do we do? Others wanted to build Cozys as well. What a huge effort to write and publish plans, and building a proof-of-plans at the same time. Then the excitement of the first flight of the first plans-built Cozy--and Uli flying the Atlantic in it. Then other Cozys completed, and our builders winning numerous awards at fly-ins. And then the public recognition that the Cozy was a very good design, which filled a real need in the marketplace. Through these past 8 years we have met so many fine wonderful people, and made so many new friends. Our builders are just super people, and we feel very close to them.

This project was undertaken as a husband and wife effort, to keep us busy in retirement, with no thought or intention of expanding beyond what the 2 of us could handle. We could see the opportunity and need for a 4-place, expanding on the Cozy design, and couldn't resist the challenge. But then we realized that the two of us couldn't handle a continuously growing business by ourselves, and the legal implications would increasingly threaten our future security. So we made the tough decision to wind down our business.

This decision was not taken lightly. No doubt it will require a big readjustment on our part. But we

have a new airplane to finish, and we would like to do more traveling and attend some of the airshows we have turned down, and meet more of our builders.

Most of all, we want to see more Cozys flying, and have the best safety record of home-built. We will try to do our part, and hope you won't let us down!

PHOTO GALLERY

Ken and Shirley with their "Designer's Award" trophy in front of N5KF, best Cozy Oshkosh '87.

A close-up of the trophy, 1/2 of a model Cozy mounted on a front surface mirror by Lon Cooper.

Merle, Ken and Vance in front of Vance's Cozy in the Cozy circle at Oshkosh '87

Jack Grandman's pristine instrument panel.