

THE COZY NEWSLETTER #25 April, 1989

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It is mandatory for all Cozy builders to have Newsletters #4 thru #25, plus a continuing subscription to future issues. The newsletter is the principle means by which we support and communicate with our builders. In it we publish design changes, safety items, builder news, builder hints, and other information valuable to builders. Your newsletter subscriptions help to fund builder support. We will not support builders who do not subscribe to the Newsletter.

WHAT WE HAVE BEEN DOING

We are pleased to report that we cleaned up the finishing details on the Mark IV. When we flew it to Oshkosh last summer, it did not have wheel pants or spinner and, although the flying qualities were excellent, we were not pleased with take-off and landing performance. The ground attitude, empty, was almost one degree negative, and with a full load in the front seat and full power, the nose dipped even further. This extended rotation speed and resulted in quite a drop of the nose in landing. The logical solution was to shorten the main gear.

So, we jacked up the airplane, sawed off 2-¼ in. of gear legs, and remounted axles and wheels. This changed the ground attitude to almost one degree positive--quite an improvement! In addition, we decided to put in a stronger spring in the nose gear shock strut so that loading and power wouldn't affect attitude so much. We used a spring that is 80% stronger than the one Brock supplies. Then we trimmed away about 40% of the width of the fiber glass leaf spring in the pitch control system to reduce stick pressure in pitch. The combined result of these changes was amazing! Now we can lift the nose wheel off the runway before we are ready to rotate, and hold the nose wheel off after touch-down, and let it down gently after we slow down. As a matter of fact, our Roncz canard now behaves like the GU that we were accustomed to on our 3-place.

With this big accomplishment behind us, we went on to make a fiber glass spinner and wheel pants, sealed the canopy and hooked up our cabin heat. on a very bumpy day we went up to test TAS at 75% power, and it calculated to be 210 mph, confirmed by DME.

Our indecision was settled. We knew we couldn't justify two airplanes, so one would have to go. We decided to keep our newest, the Mark IV, and find a new home for our original Cozy. But first, we wanted to do some up-grading, like replacing the Facet fuel pump, moving the master cylinders up front, making adjustable passenger pedals, installing a starter, installing mode-C, putting in cabin heat, and a bunch of other things. So we towed the Cozy home to my shop to work on between visits by relatives and friends, newsletters, Sun & Fun, etc.

PLANS FOR THE MARK IV?

Since Oshkosh '88 and the article in December Sport Aviation, we have had numerous requests from builders to "tell them" what changes to make in the Cozy plans to build a Mark IV. We can understand their interest, because we think that it is a very attractive 4-place design, and it certainly can be built a lot cheaper from plans and basic materials than "kit" airplanes. Even though we haven't published much performance data, it is in the 200+ mph class and has all of the nice handling qualities of the Cozy.

In reviewing the changes made in the Cozy plans, the only areas in which the Mark IV is identical to the Cozy are the nose back to F.S.60, and the ailerons, winglets and rudders. The Mark IV has about as many changes from the Cozy as the Cozy did from the Long EZ. It would be wrong to describe these changes only in general terms and leave the details up to each individual builder. This would generate all kinds of questions and probably lead to some unsafe airplanes.

The only ethical way to tell builders how to build a Mark IV would be to publish a very extensive

addendum, or, since Cozy plans are no longer available in this country, a completely new set of plans. This would start a whole new sequence of, writing and publishing plans, spec sheets, owners manuals, advertising, and builder support--a cycle which lasts 10 to 15 years. If you re-read Newsletter 18, you will see this is exactly what we decided not to do.

The fact that the Mark IV is such a nice airplane, and that we very much enjoy helping builders makes it very difficult to say "no", but that is what we have to do. We will keep the Mark IV as our personal, one-of-a-kind airplane.

FIRST FLIGHTS

In NL #24 we reported that Morgan Dean was flying, but we hadn't received any details. He has since written to us. In addition, three more Cozys have flown since the last newsletter:

Daniel Hedricourt, France, 1/5/89

Rex Pershing, Cedar Falls, IA, 1/30/89

Walt Suminski, Hemlock, MI, 2/12/89

Their letters are as follows:

Dear Nat, 12/7/89

Cozy 1108 first flew 11/12/88. Empty wt. 957 lbs., c.g. 108.8. High speed taxi test nose wheel off at 58 kts. Rotation at 65 kts. All temps in the green during climb, CHTs 300 deg. Speed to 120 kts. first flight. First flight three touch and gos and one full stop. First flight 1 hr. 18 min. First flight flown by Tom Howard, who has about 250 hrs. in a Long EZ.

My Cozy had a very slight right wing heavy and left yaw. We temporarily blocked out the right rudder 3/8" to correct yaw. The roll trim is adequate to trim out the heavy wing. The roll trim is my own arrangement which puts no friction on the torque tube support bearing. During the course of our envelope expansion, N23CZ indicated 155 kts. @ 8,000'.

I have completed my test flying and received my certificate from FAA and now have 23CZ at Whiteman Airport not too far from my home in Burbank. Not much flying the last few days as we have winds to 35 kts. Its a great flying airplane. It still needs wheel pants and spinner and paint to complete. Enclosed are pictures.

Many thanks, Morgan Dean

Dear Nat & Shirley, 1/5/89

Three years ago I started building a Cozy. I have built this airplane in my garage, in which I fitted out

a space of 6.5 x 13 ft. All the pieces have been built in this small heated space. My wife has helped me a lot during the long hours of construction.

One of the main obstacles for me was the translation of the plans, because I threw myself into building this airplane without any knowledge of English whatsoever. Another difficulty for us in France is buying the pieces from the US. One has to take into account that delivery times can be 2 to 3 months.

At the end of Nov. 1988 the Cozy was ready to fly. Early December I made the first taxi tests and first flight, surprisingly with the greatest of ease. I am a fairly inexperienced pilot, and had only 150 hours logged.

Raving found confidence in myself and the machine, I decided to make my first flight the morning of Dec. 16, 1988. The weather conditions were ideal, no wind, temperature 13 deg. C, clear sky. I have to add that we live in "le midi" of France.

After a taxi run, I took the runway, last checklist, I breathe in deeply, and put on full power. At 65 kts. I pull the stick, the canard reacts 'beautifully, the Cozy flies and climbs at 1,500 fpm. At 1,000', reduction to 2200 rpm, turning to the right in order to join the pattern. I made a 360 deg. turn to the left, and what a joy to fly and what a great reward for all the effort. I revel in those minutes of great pleasure. I call the control tower to announce finals to either a touch and go or full stop landing. I approach at 90 kts. and make a gentle landing. The first flight was 9 minutes. After landing I verified the whole machine and found nothing wrong. Since then I have tested the Cozy at various speeds and altitudes. At the moment I have flown 11 hours and made 42 landings.

My empty weight is 1,007 lbs. with an O-320 E2F, heavy starter, strobes, lights, and alternator, but no wheel pants or spinner. Prop is Great American 62 x 70. At 10,000', 2800 rpm TAS is 163 kts.

Thanks, Nat, for designing the nicest airplane!

Sincerely, Daniel & Sylvia Hedricourt

Dear Nat, 2/15/89

Cozy N611CZ has flown! After several hours of high speed taxi tests to familiarize myself with the Cozy, and my FAA inspection on January 17th, the weather finally gave us a decent day without sand on the runway, and on 1/30/89, after a couple more high speed taxi runs and crow hops, the tower finally gave me the full length of the runway for a couple of long low flights over the runway. With adrenaline high, I took my initial flight about 5:30 PM; I did a low go-around and then 3 touch and gos.

The Cozy is a fantastic flying machine! I have about 4 hours of time since the first flight, just practicing maneuvers and familiarizing myself with the airplane. I have not done any testing to expand the flight envelope, except for a level, high speed run. The airplane performs above my wildest dreams. Barbara can hardly wait for me to fly off my 25 hours, so she can experience my

enthusiasm for the Cozy.

Sincerely, Rex Pershing

Dear Shirley & Nat, 2/15/89

The "Cozy" flies February 12, 1989, Barstow Airport. We finally got an almost perfect day for a first flight. Sunday we waited at the airport for 4 hours before the wind died down and switched around to 24 deg.

After Walt did a fast taxi, he decided it was go. Everything went very well! He flew for 0.8 hr. and brought it in for a beautiful landing. He was really pleased with the performance. The controls are really quick, which he is working on adjusting to.

We hope to have the 40 hrs. flown off in plenty of time to fly to Sun & Fun. We are planning to fly along with two Barracudas.

We are really proud of our Cozy and will keep you posted on any pertinent info.

Sincerely, Walt & Helen Suminski

SERVICE CEILING

How high can you fly in a Cozy? Vance Atkinson provided part of the answer. He did some high-altitude flight testing (at a gross wt. of 1550 lbs.) and writes..."I did about a dozen stalls in different configurations at 23,000' , and am happy to report that all were normal. In fact, the plane handled very well, was not sloppy, and had good control harmony. I spent about 30 min. at 23,000' (TAS at full throttle was 152 kts) letting everything stabilize, and then did a series of stalls. The air-traffic controllers were curious about the type of plane, and when I told them it was a Cozy, they replied 'I didn't know those things would go so high'"

GROUND ATTITUDE

The plans call for trimming the main gear legs level, before installing axles and wheels. A design change in the newsletter called for removing an extra 1/2". Even then, with 500 x 5 tires, the Cozy will probably still sit on all three wheels slightly nose down. RAF recommends a positive ground attitude for the Long EZ up to 1-1/2 degrees. The trade off is ground handling vs prop clearance. Ground attitude seems to be more critical for the Roncz canard than for the GU. The bottom line is that the extra 1/2" is probably not enough. Each 1" off the main gear changes the ground attitude 0.7 degrees, so we would now recommend removing 1-1/2" to 2" off the gear legs after trimming them level. This should result in a ground attitude of +0.5 to +1.0 degrees.

NOSE GEAR SHOCK SPRING

The nose gear shock spring supplied by Brock requires a force of 91 lbs. to compress it 0.1" during installation, and 1,094 lbs. to compress it 30%. The heavy duty spring we installed requires 140 lbs. to compress it 0.1" and 1,813 lbs. to compress it 30% (80% stronger). It is a Cat.# 9-2416-36, available from Danley Die Set, 3019 So. Tanager, Los Angeles, CA 90040, (213) 685-8151 for \$11.28 + shipping. We were so pleased with it in the Mark IV, we also installed one in the Cozy. To change springs, it is necessary to compress the shock strut in a vise. The jaw extension on our vice wasn't quite wide enough to take the whole strut (it was 8-1/4"), but we were able to compress it by placing one end of the strut against one jaw, and grip the flange on the strut with the other jaw.

NOSE GEAR EXTENSION

For those of you opting to change ground attitude by increasing nose gear extension (by lengthening the throw over arm in the retract mechanism), we must add a word of CAUTION. If the nose gear pivot goes past vertical, i.e. the bottom forward, the nose wheel will tend to turn, rather than track straight. This could induce shimmy. We prefer shortening the main gear and installing a stronger shock strut rather than changing the geometry of the nose gear.

AILERON FLUTTER vs VIBRATION

Flutter of control surfaces is an aerodynamic phenomena caused by unbalanced control surfaces, and can result in catastrophic structural failure of the airframe. If you balance your control surfaces as directed in the plans (after painting), you should not have to worry about flutter; although you should test for it to make sure.

Control surface vibration is a different phenomena. The last Canard Pusher reported on several cases of aileron vibration in Long EZs. In the first case, the builder observed the trailing edge of the ailerons vibrating up and down with a 1/4" amplitude, found his hinges very loose, and the push rod ends very worn (even though his ailerons were balanced per plans). He solved the problem by adding lead tape along the leading edge, covered by one ply BID, to over-balance them, installing Teflon tubing in the hinges, and replacing the rod ends. In two other cases, the vibration went unnoticed until one of the CS 132 belcranks failed due to fatigue. Fortunately, the disconnected aileron trailed and the remaining aileron provided enough roll control to land safely.

It is thought that the aileron vibration was excited by the combination of engine and propeller input, and that the change from aluminum to steel pushrods (recommended for safety reasons) in the engine compartment reduced the resonant frequency of the aileron control linkage to match that of the engine and propeller vibration in cruise. As a result, RAF has redesigned CS 132 to make it much more resistant to fatigue, and has made replacement of the CS 132 mandatory for all Long EZs.

The aileron control system in the Cozy is not identical to the Long EZ. The Cozy has 2 torque tubes linked together at the firewall, and shorter pushrods to the ailerons. This would make the resonant frequency higher, and perhaps above the cruise range. As a result, the Cozy may be less susceptible to fatigue failure of CS 132s. We have not yet had an opportunity to check this on our airplanes, and would appreciate input from other Cozys flying. In the meantime, if you wish to install the stronger CS 132s, they are available from Brock as part No. 132L-R. We will report additional information as

we obtain it.

BIRD STRIKE

A California Long EZ sustained a bird strike against the canopy while cruising at 150 mph TAS and 5,500' MSL. The forward portion of the canopy shattered, and pieces went through the prop. The canopy was one of the earlier ones blown from 1/8" thick Plexiglas (the Cozy uses 3/16"). The bird (a duck) ended up in the lap of the back seat passenger, minus its head.

The pilot throttled back to 100 mph, returned to his departure airport, and made a normal (?) landing. He was uninjured, except for a fat lip where struck by the bird and/or debris. Both the canopy and propeller were totaled. This pilot did one important thing—he remembered that in an emergency, "fly the airplane"!

MORE ON FUEL PUMPS

Since the last newsletter, we have been advised that Facet does not make pumps with nylon valve parts and 1/4" or 3/8" female threads, but that pumps with 1/8" female threads have sufficient capacity for 0-235 and 0-320 Lycomings. Wicks has provided a summary of acceptable pumps (with nylon parts) which they stock:

Volts Description Part No. Price

12 1/8" NPT FP40106 \$29.75

24 1/8" NPT FP40082 \$47.86

24 1/8" NPT FP40164 \$47.86

12 3/8" Flare FP40108 \$29.75

24 3/8" Flare FP40154 \$32.50

MORE ON FUEL SELECTOR VALVES

Because of many reported instances of sticking fuel selector valves, and at least one instance causing a Varieze crash, the FAA wants all builders to be notified that the Imperial selector valve shown in the Long EZ and Cozy plans is not acceptable for aircraft use. This has been communicated previously, as recently as NL#24, but some builders have still not changed theirs.

In an aircraft with two fuel tanks, if the selector valve sticks on a low or empty tank, or sticks in the off position, or the handle breaks off, you could be in serious trouble. The Weatherhead valve, with a Delrin plug, is not prone to sticking, and is an exact replacement for the Imperial shown in the plans. The 4-way version, with one port plugged, allows you to simplify the piping run to the firewall, and

allows you to mount the handle so that down is off, left is left tank, and right is right tank. The only disadvantage to the Weatherhead valve is that Delrin is not as strong as metal, and won't withstand as much abuse, although we have not heard of any cases where this was a problem.

Bud Meyers, of wicks, has located a fuel selector valve which seems ideal. It is made by Allen Aircraft for Piper. It is an exact replacement for the Imperial (or Weatherhead). It is aircraft quality, has a cylindrical plug (not tapered) with O-ring seals. It is easily disassembled for inspection or maintenance, should that ever be required. It is a gem of a valve. It is available from Wicks at \$118.65, and well worth it if it saves you a forced landing. We summarize the valve situation:

1. Imperial shown in plans -tapered brass plug prone to sticking. **REPLACEMENT IS MANDATORY!**
2. Weatherhead #6749 or #6747 tapered Delrin plug not prone to sticking and a direct replacement for the above. Not as strong as an all-metal valve.
3. Allen Aircraft -Cylindrical plug with O-ring seals not prone to sticking, aircraft quality, a direct replacement for either of the above and **RECOMMENDED!**

FUEL MANAGEMENT

Poor fuel management continues to be a major cause of accidents. The principles of good fuel management are so obvious, you wonder why they are not always followed. If safety isn't of sufficient concern, be aware that running out of fuel, for whatever reason, even if the emergency landing is successful, is sufficient grounds for the FAA to take away your license. Here are some guidelines:

1. Your selector valve should have detents, so you can feel when it is in the selected position.
2. Fuel selector valve positions should be labeled. The handle should be mounted so it points to the selected tank. You should be so familiar with its operation that you could operate it correctly blind-folded.
3. Although it is not necessary to fly with full tanks, you should always carry enough fuel to reach your destination with at least 1 hour's fuel remaining.
4. You should never run a tank dry in flight. A restart takes longer with lines filled with air to the carburetor.
5. You should be able to see the fuel level in your tanks in flight. This means not stacking luggage in front of them. If you can't turn your head far enough, install a mirror. If the window becomes cloudy, repair it or install external sight gauges.
6. Plan the switching of tanks to occur at altitude within gliding distance of an airport.
7. Alternate tanks during flight to make sure both tanks are useable.
8. Before descending, select the fullest tank. If you descend on a tank which is almost empty, the fuel will run forward and the sump may run dry. Although you could raise the nose to replenish the sump, if this occurred during a landing approach, the prop could stop windmilling and you might not have the altitude nor the time for a successful restart.
9. You should train yourself to immediately and automatically switch tanks if the engine stops.

MORE ON FINISHING

1. The Sterling Lacquer Co. in St. Louis makes an excellent, high-build polyurethane primer U1761 for aircraft. Using their U1762 catalyst, U1761 is difficult to spray because of the short pot life, and the fast cure leaves many pin-holes. Also, once opened, the catalyst has a very short shelf life. We learned that an alternate catalyst, U1000C, is available which extends pot life to 6 hrs. and cure to 24 hrs. This makes it easy to spray and reduces pin-holes. Wicks will carry the new U1000C catalyst.
2. We have long suspected that it was not necessary to use a UV protective primer over fiberglass if the top coat had UV protection built in. We decided to check this out with both Ditzler and duPont. Ditzler Technical Service (1-800-245-2590) said that Ditzler Deltron acrylic urethane top coat has UV protection built in and a UV barrier primer was not necessary. They recommend their K-200 high-build acrylic primer with their K-248 catalyst for flexibility over fiberglass. The duPont Technical Representative said that their Imron polyurethane top coat also had UV protection built in and that it was not necessary to have a UV barrier primer. They recommend either a high-build epoxy or urethane primer underneath.

Both Ditzler and duPont said that a colored primer should be used underneath a white top coat to make sure that there is good coverage. Gray primers are popular because they are considered the easiest to cover with white, but any other color that contrasts with white is OK.

PROP HUB EXTENSIONS

We used a 5" prop hub extension on our 0-235 Lycoming. This extension is not a commonly stocked size, and some builders have had difficulty locating a source. Ours was made by Rotodyne, 231 N. 1st St., Burbank, CA 91502 (213) 849-4782. Rotordyne has changed owners since 1981, but the new owner, Mr. Laszlo Sobuch says he will make extensions to order from 2024 T3 aluminum. 6061 is not recommended, because it is not as strong.

Builders installing 0-320s closer to the firewall will need 6" prop hub extensions.

DO NOT USE prop hub extensions longer than 6". We heard of an 8" extension made from 6061 aluminum which failed from fatigue because its resonant frequency coincided with the cruise frequency of 2400 rpm. The resonant frequencies of 5" and 6" extensions should be above normal operating rpms.

BUILDER HINTS

1. RAF reports that the National Research Council of Canada made a study of icing inhibitors in aviation fuels and found that 0.1 to 0.15% by volume of ethylene glycol monomethyl ether (EMGE) mixed with fuel virtually eliminates carburetor icing (you should still use carb heat, though). Long EZ pilot Ken Clunis reported that Prist "Hy-Flow" (not "Lo-Flow") is the best source of EMGE.
2. Tachometers. Analog tachometers (meter type) do not provide a precise and always accurate reading. RAF reports that a Braal digital tach solves this problem (if you consider it to be). The Braal Tach 1 is small (1.2 x 2.17 x 2.67" deep), light (8 oz.), easy to read, easy to install, and is accurate to plus or minus 2 rpm. The instrument, unlighted, costs \$165.00. For further

information, contact: Braal Micro Instruments Inc., 160 Eastman Lane, Petaluma, CA 94952 (707) 763-9377.

3. When you park your Cozy nose down in your hangar, it is rather difficult to move, particularly if it is nested with another airplane in a small T-hangar. If you set the nose bumper on a small, low dolly with swivel wheels, it solves the problem. We took 4 swivel wheels from an auto mechanics crawler, and mounted them on a 12 x 12 piece of 3/4" plywood. Works great!
4. We are now using Bob Davenports nose gear shimmy damper (NL# 24-2). Works great!
5. We mentioned this before. There is a problem with the design of the nose wheel-axle-fork assembly supplied by Brock (same as Long EZ). If you try to tighten the axle so it won't turn in the fork, you are also tightening the bearings so they won't turn in the wheel. If you leave it loose, the axle will probably turn in the fork. The fix is to make a spacer, just the right length, to hold the bearings apart so you can tighten the axle independent of the bearings.
6. In NL#24, we published a letter by Dave Mendenhall, in which he described installing return springs in his Rosenhan master brake cylinders to improve braking. Bud Meyers, at Wicks, advised that MATCO has made a design change and now installs these springs in all new Rosenhan brake cylinders.
7. Vance Atkinson advises that the heater blower he used is no longer available. A 2" VW squirrel cage blower weighing 2.5 lbs. is available from J.C.Whitney, in Chicago for \$49.00. A 3" VW axial flow blower is available from Barnies Import Parts in Tucson (800) 833- 3827.
8. Brian McKiernan recommends using a 35 amp alternator from the 1976 Honda Civic, which weighs 6.8 lbs. and has the correct rotation. He says to use a 1978 Ford Escort regulator (VIPA replacement part #01-VR-207).

DESIGN CHANGES

Chap. 9, p.2, Step 2, Item 3: Add "After trimming gear legs level, remove 2.0" more from each leg"
Delete any previous change.

ACCIDENTS

There was a fatal crash of a California Varieze short of the Palo Alto airport runway. The builder-pilot was highly proficient, held an IFR rating, and was commuting to work on a foggy, rainy day. In the pattern, his engine quit. He executed an approach, but he was short on final and touched down 50-100 yds. short of the runway in a swampy area described as 2 ft. of water and silt. It is thought that the nose gear was retracted. Upon contact with the water, the Varieze's nose dug in and it flipped over, up-side down, breaking off both sides of the canard and shattering the canopy in the process. The Varieze sustained little other damage. The pilot sustained head injuries from hitting the instrument panel, and rescuers were not able to revive him.

When the FAA was investigating the cause of the engine stoppage, they started the engine (an O-200 Continental), and it ran perfectly. They noted that the pilot had modified the induction system, by building a plenum chamber between the carburetor and intake pipes, apparently to improve fuel mixing and economy in anticipation of competing in the CAFE 400. Although he had made provision for alternate air, there was no heat muff on his exhaust pipes, so the alternate air could have been little warmer than the primary air.

In view of the above, it was concluded that the engine stopped because of induction system icing (as distinct from carburetor icing). In other words, the plenum chamber and manifold pipes filled up with snow.

There are a number of things to be learned from this most unfortunate accident:

1. An engine is most susceptible to icing at low or idle power settings. This is when the greatest adiabatic cooling occurs. This condition exists before take-off, and during the descent to a landing. You should always apply carburetor heat to check your engine before take-off, and use it during descent at reduced power. During descent, you should also "clear" your engine periodically, by adding a short burst of power.
2. Carburetor heat does no good, and can even aggravate an icing problem, unless it is substantially hotter than primary air, i.e. 100 to 150 degrees hotter.
3. Approaches should be planned so you can reach the runway if power fails. Remember that you lose altitude faster if the engine is not firing but the prop is wind-milling. In primary flight training, the Navy taught us slips and S-turns to the circle. The purpose was to train us to carry excess altitude in the approach and then bleed off the excess for a precision landing. Long, power-on finals were verboten. The above notwithstanding, you can stretch a glide by using optimum glide speed, raising landing brake, and also nose-gear, as a last resort.
4. In preparation for landing, particularly off-field, always tighten your safety belt.
5. In any off-field landing, be it rough terrain or water, always extend (lower) the nose-gear before touch down. It will absorb much of the nose-down moment which would occur if there is a sudden drag on the main gear, and will help to keep you from flipping over.
6. Carry a sharp tool or heavy object (like a fire extinguisher) within reach in the cockpit so you can break the canopy and escape, if you ever tip over.
7. Avoid, if possible, flying over water beyond gliding distance to land.
8. If ditching in water is inevitable, remember, shallow water is worse than deep, tighten safety belt and shoulder harness, extend the nose gear and landing brake, touch down wings level, nose high with a maximum sink rate and canopy closed. If, in spite of your best efforts, your airplane flips, unfasten your safety belt, break the canopy, and swim out. A Cozy should float, either right side up or upside down.

There is very little experience with ditching to predict exactly what would happen. It was reported that one Varieze crashed into the water and the fuselage broke up. Although injured, the pilot swam out and recovered. It was also reported that a Velocity pancaked into the water in a deep wing stall at an excessive sink rate, and remained up-right. Damage to the aircraft was minimal. The pilot was said to have suffered back injuries, but recovered.

FOR SALE

1. Bud Guderian has a new Brock 0-235 and a new Brock 0-320 mount, neither of which he can use because he purchased an engine with a conical mount. He is willing to sell these at 1/2 original price. His address is 205 S. Mallard, Las Vegas NV 89107 and phone (702) 878-3054.
2. Ebachs also have Cozy ear rings (pierced ear) for \$6.00/pr. They must be nice, because their pins are. See NL#24 for their address.

MORE LETTERS

Dear Nat, 12/16/88

I am sending you a picture of the "Cozy". All painting is done but I still have some control work left. Due to safety, I think the plane will not be flown before May. There are a lot of things that must be checked. As you see, I got very nice registration letters.

Cordially, Rune Rostrup, Sola, Norway

Dear Nat, 1/12/89

I have been bravely fighting off those who want me to put an 0-320 and retractable gear on my Cozy. It would require forward weight to balance it, like ILS, GS, ADF, RNAV, MARKER BEACON, VOR, NAVIS COHM'S, X-PDR, LORAN, and a tape deck! Why do so many people want to go 300 mph and fly in stormy weather? I just got hired by a regional airline and get enough weather flying. My desire is to fly VFR, cross-country, ECONOMICALLY!

My Cozy will be a light (870 lb. goal) and reliable day/night VFR airplane.

I held an EAA Chapter 52 open house. I was very pleased that so many builders were impressed with my work. For many, this was their first chance to see a Cozy, and I suspect a few were jealous. I suggest that other builders hold open houses. You get some expert opinions on your workmanship and can receive and pass on good advice. .

I really enjoyed reading about the Mark IV in Sport Aviation. It is clearly a better airplane than other 4-place canards I've seen.

Happy New Year!, Brian Heinitz

Dear Nat,

Enclosed is \$7.50 for another year of the newsletter. I am not very far along yet, only having finished chapters 3 & 4. I hope to accelerate my pace next year if the FAA is willing. I am a controller at By Tracon in Oakland and we are looking at 6 day weeks for most of next year. The extra money will buy lots of foam and fiberglass if I can just find the time to work on it.

I enjoy the objectivity of your newsletter. You don't hesitate to tell the bad as well as the good. That gives me more confidence in the project.

Sincerely yours, Daniel Heald

Nat, 12/19/88

Please renew my newsletter for 2 years. I finally got started in June. Even though I'm slow, I'm having a bunch of fun. Thanks for a great set of plans.

Will Sladaritz

Dear Nat & Shirley, 12/9/88

Hi from the Columbus Cozy Club. Just a note to say hi and let you know we are progressing as you can see in the photo. We have both completed turtledecks, windows cut, and canopies mounted. We are building two Cozys in the same garage. Ron Kidd is the other builder. Wings are done, canards are done, center section spars 90% complete, on the gear, but we've got a ton to go! We keep on plugging. We are projecting a finish date around 30 weeks from now so unless we get real lucky, we won't make Oshkosh '89. Keep up the great newsletter, Nat.

Sincerely, Rick Cahill

Dear Nat, 10/30/88

Thanks for your fast response to my request. My father, now retired, was a career pilot. He took me flying in a Stearman when I was about three or four years old, and a number of times after that. Dad said I spent most of the Stearman flight with my head down, probably because of the noise and wind. Part of my reason for building the Cozy was to have something we both could enjoy. It is working out nicely.

I am beginning to look for an engine. If you hear of any high-time 0-235 L2Cs available, please suggest that the seller contact me about a sale.

Thanks for your continuing support. I am,

Sincerely, Bill Beecham, (407) 394-7435

Dear Nat, 1/14/89

It's time to renew my subscription and to catch you up on Cozy #101's progress. I've painted the bottom and sides of the fuselage and am starting on the top now. I've installed the instruments but removed them for painting.

I bought an 0-290 conical mount engine from a friend of mine. It had been in a Long EZ for 5 years, was running great and only had 413 hours on it. My friend had upgraded to an 0-320 and I felt fortunate to get a well-proven engine with complete engine logs. I didn't want to worry about a tight new engine to break in while doing the taxi tests.

Don't know just when I'll have my Cozy finished, but hopefully it'll be sometime this year. I've spent about all the money required, just lots of elbow grease needed now. I managed to pass my first

biennial last Sat. after 2 years of no flying which I guess should help spur me on to finish. I go thru periods of builder burn out at times, but I just have to keep plugging away. I plan on retiring in Sept. and would sure like to have it finished by then. I'll fly down when it's finished to show it to you.

Best regards, Bud Guderian

Dear Nat,

I attended Bill Overton's "Cozy Picnic" in Washington D.C. a few months back--it was fascinating to see his project underway and to meet other Cozy builders currently working on projects.

I have finally started ordering materials now that my shop is set up, and hope to be underway soon. I hope my wife likes building as much as she likes piloting.

Thanks a lot, Winslow White

Dear Shirley and Nat,

My, how time passes! I have been working on Cozy #221 for over two years now and feel quite satisfied with my progress--especially since I have just about outgrown my workshop.

I have completed the fuselage, the center spar, both wings, and lastly the canard. After having done this much I feel it was a wise decision to leave the canard until after the wings, as I feel it required more precise building techniques.

I am optimistic in hoping to complete my Cozy in 2 more years, but not obsessed with the time element as I am enjoying the building. I must commend you on a delightful design and most informative newsletters.

Hope to see you at Oshkosh this year.

Yours sincerely, Brian McKiernan

GALLERY