

THE COZY NEWSLETTER #23 October, 1988

Published Quarterly (Jan., April, July, Oct.) by

Co-Z Development Corp.
2046 No. 63rd Place
Mesa, AZ 85205
(602) 981-6401

TABLE OF CONTENTS

- [BUILDER SUPPORT](#)
- [OUR ACTIVITIES](#)
- [ENGINE COOLING](#)
- [CO-Z EUROPE](#)
- [VAPOR LOCK](#)
- [SOLAR HEATING](#)
- [ACCIDENTS](#)
- [BUILDER HINTS](#)
- [FOR SALE](#)
- [LETTERS](#)
- [AIRFRAME AND SYSTEM MODS](#)
- [ENGINE COMPARTMENT MODS](#)
- [GALLERY](#)

BUILDER SUPPORT

We continue to support Cozy builders by the publication of this newsletter, replying to personal letters (please enclose a SASE), and telephone calls. Subscription to the Cozy newsletter is mandatory for all builders. Cost is \$7.50/year. The newsletter contains all plans changes or corrections, any changes of suppliers, builder hints, news of other builders, items for sale, etc. When it is time to renew, we would ask that you would do so before it is time for the next issue to be mailed, to save us the extra office work of removing your name from our mailing list and then having to add it back again. If we are not in when you call, please leave a message on our answering machine stating the nature of your call, and when to call back (we need to know the time zone).

Our newsletter is sent directly to subscribers in the US and Canada. Builders in other countries must subscribe to the newsletter through Co-Z Europe, and then will receive our newsletter plus theirs directly from them.

Their address is: Co-Z Europe, Ahornstrasse 10, D-8901 Ried, W. Germany

We still have a supply of A Drawings available, and Owners Manuals, and a new supply of Cozy decals (for the nose or sides of your airplane) in black, brown, red, blue and green. These are available at the following prices:

- A drawings. \$15.00
- Owners Manuals. \$15.00
- Decals (state color) \$5.00

- Info. Kits. \$9.00

OUR ACTIVITIES

When Newsletter #22 was written in July, we were still in the process of flying off the 40 hours on our new Cozy Mark IV so we could fly it to Oshkosh. I was delighted with the flying qualities (it flies just like the 3-place), but I didn't have enough oil cooling and I was not pleased with rotation and landing speed. The oil temperature was an immediate problem and, after some experimental modifications, I was able to get it down to 180°-190 24°F in cruise, which is pretty darn good in the summer in Arizona. I decided that the higher than expected rotation and landing speeds were caused by the combination of a nose-down attitude of the Mark IV on the ground and the new Roncz canard, which seems to have less lift at low angles of attack than the GU. The logical fix was to shorten the main gear, but we were anxious to leave on our trip, so I decided to postpone that job until after returning from Oshkosh, when I wouldn't feel so rushed.

We like to leave early for Oshkosh, so we can visit our family and friends in Minnesota on the way, and we did that again this year. With our faster airplane, we expected to set a new personal speed record on our trip, but alas, we had to make several large detours around bad weather besides being weathered in on the ground for several hours, and had strong head-winds all the way, so we actually arrived 3 hours later than last year. The new airplane was smooth and comfortable. We had fun playing around with the loran (first trip with loran) and it seemed like a real luxury to have a starter, after flying for 10 years without one.

We arrived at Oshkosh ahead of the crowd, nailed down our favorite spot on the flight line and reserved extra space for a few more Cozys. The Atkinsons, Francis' and Wilhelmsons arrived a day or so later. The Mark IV looks so much like the 3-place in styling, most people liidn't recognize that it is a larger, 4-place airplane. Aeromet arrived with their version of the Mark IV and parked alongside of us, but it had so many high-tech protuberances and appendages, most people didn't recognize it as the same airframe.

We had a builders forum on Sunday, July 31st that was very well attended. We talked about the Mark IV and some of the new (to me) things we are evaluating. Then Vance, Ken, Jack and Merle talked about their experiences in the Cozy, and various modifications they have made. We also had smaller bull sessions the next couple of days on the flight line.

This year Vance Atkinson was awarded the trophy for the "Best Cozy Oshkosh '88". Vance has a beautiful Cozy, but he also needs to be recognized for all of the work he has done in helping other builders, representing all of us at fly-ins and races around the country, and the many modifications he has tried and evaluated. This year, as he has done for the past 4 years, Lon Cooper made the trophy. He really out-did himself: It was ½ of a model Cozy, mounted on a front-surface mirror so that at any angle you would see the entire airplane. Clouds were etched in the background, and it was mounted on a walnut base so it could either be free-standing, or else hung on a wall. It was so beautiful, it is hard to adequately describe. Like all good things, the era of super trophies is coming to an end. Lon can no longer do this for us (it interferes with his earning a living). Also, the EAA has discontinued designer awards ceremonies, because no other designers are awarding them. So from now on, guys, your reward for building a super airplane will have to be the satisfaction you get in flying it and showing it.

Later in the week we flew a photo mission with the photographer from Sport Aviation, and we hope they will print some pictures in future editions.

The EAA grounds at Oshkosh were significantly changed this year. Runway 18 was extended to the south (to handle bigger military and commercial aircraft) and the main gate was moved south. Large concrete taxiways were built into what used to be the classic display area to accommodate the Concorde, the B-1 bomber, and other heavy military iron. We reminised about how the EAA has evolved from a display of home-built aircraft (years

ago) to much more of a military and commercial extravaganza today. Sometimes we wonder if it is really worth the effort (and expense) of attending Oshkosh (we haven't missed a year since 1973), but then we think about all of the pleasant times we have had meeting friends on the flight line and camping together in the woods, and then decide that we just couldn't bear not attending.

This year we hung around "until the last dog was hung", and then took off and set a course for the lake country in northern Minnesota to spend a few more days relaxing with our children and grandchildren. Then it was back in the air again, heading home. We stopped over in Albuquerque, again to visit friends and help celebrate a birthday. We were surprised to learn that Vance in his Cozy had stopped there on his way back from California just the day before. What a small world (if you fly a Cozy!).

After returning from Oshkosh, I must admit, we goofed off for a couple of weeks. during which we helped Cozy builder Jim Turk pack up and move, and then did some major repair work on one of our cars, which was long overdue. I managed to slip a disc in my back just before my appointment at the Mayo Clinic for a complete physical (that's like an annual on an airplane) and an operation the following week. Sitting here writing this, I still hurt, and the doctor says I can't do much of anything for 4 more weeks. After 5 airplanes since 1973, I may be a little burned out, so the rest may do me some good.

ENGINE COOLING

Part of the energy of the fuel burned in an internal combustion engine is wasted as heat, which must be removed by cooling. In an air-cooled engine, about 2/3rds of the heat is removed by air passing through the fins, and the rest is removed by the lubricating oil. In small engines, like the 85 hp Continental, there is enough cooling in the oil sump, so no additional cooling is required. In larger engines, external coolers are necessary. The higher the hp, the more critical oil cooling becomes. Lycoming says 180°F is ideal for oil temperature, and 240°F is red-line. The higher the temperature, the faster the oil deteriorates and turns black. Cooling an O-235 isn't too hard, but when you go to 150 hp, 160 hp, or 180 hp, it's tougher.

Heat transfer-rate is determined by 1) surface area, i.e., whether you have a 7, 9, or 11 row coil, and 2) delta t, i.e., the difference in temperature between the air and the oil, and 3) velocity, i.e., how much air is going through the coil. If you have an oil cooling problem, you can solve it by improving any of these 3 functions.

In the Mark IV I have a 180 hp engine and am using a 9-row cooler. I mounted the cooler on the firewall, to keep the weight as far forward as possible, and the lines as short as possible. I exhausted the air out of the top of the cowling, which is a low pressure area, to help airflow. Cooling was not good enough. The oil temperature went up to redline at 240°F. Installing a 1" high "boat windshield" 1" ahead of the air outlet dropped the temp. about 10°F. I then installed a deflector inside the cowling to force more air toward the cooler, but it didn't seem to have any effect. I did learn, however, that the air was picking up about 30° of temperature inside the cowling before it got to the cooler. This gave me the idea to run a 3" dia. aeroquip duct directly from the NACA scoop to the cooler, and that dropped the temperature another 30°. So then I increased the duct size to 3-1/2", and that got me down to 180-190°F in cruise. CHTs were never a problem, because the cylinders are tightly baffled, top and bottom. Hope this is a help if any of you are having cooling problems.

Co-Z EUROPE

We haven't received much news lately from Co-Z Europe because Uli has been busy building a Roncz canard and installing a Hoffman variable pitch prop on his Cozy. He reports that the latter allows him to develop full power for take-off. This should be a real plus for him in Europe, where they have a lot of short, grass fields. He also reports that Daniel Hedricourt in southern France is about ready to fly.

VAPOR LOCK

Vapor lock occurs fairly frequently in cars, because the fuel lines and carburetor are exposed to engine heat, and when idling, the fuel can get hot enough to boil and fill the lines with vapor. The fuel pump can't pump enough vapor to keep the engine running, so it stops.

Vapor lock is less common in aircraft, particularly those with up-draft cooling like the Cozy, where the fuel pump, lines, and carburetor are in the cold air stream.

There is a situation, however, where you can experience vapor lock. If you run one tank dry before switching tanks, the fuel line from the selector valve to the engine will be filled with air and fuel vapors. Then when you switch tanks, the fuel pump will have to exhaust the air and vapors from the line before fuel flow is reestablished and you get an engine restart. Fuel pumps do not pump air and vapors efficiently, so it will take a period of time. You can get some idea by measuring how long it takes your booster pump to get fuel to the engine the first time you fill your tanks. My experience is that it takes several minutes. Auto fuel is much worse, because it has twice the vapor pressure of aviation fuels, and fills the lines with more vapor. The moral is that you shouldn't run a tank dry unless you have plenty of altitude, and then check to see if you are within gliding distance of an airport. It is also suggested that you exercise similar precautions when switching tanks.

SOLAR HEATING

According to Greek mythology, Icarus escaped from Crete on wings his father fashioned from feathers and wax. He didn't heed his father's warning, however, and flew too close to the sun. His wings melted, and he fell to his death in the sea.

At Oshkosh this year we observed a deep orange Velocity and a dark maroon Lancair parked in the sun on a 95° F day. According to our color chart (Chap.25, p.1) the surfaces of these aircraft reached 178° and 200°F respectively. These temperatures would melt wax and soften room-temperature curing epoxies. But, you say, these are pre-fab kits that are high-temperature cured. Don't kid yourself, they are put together by the homebuilder with room temperature cured epoxies like we use. How foolish can people be? Please protect your Cozy from solar heating by painting it WHITE.

ACCIDENTS

According to a flyer we received from the FAA, 25% of the current aircraft accidents in Arizona are related to stall/spin.

BUILDER HINTS

1. Aeroquip 701 hose is represented as superior to 601 in that it has longer-lasting rubber, with no specified replacement period. 601 should be replaced in 5 years (or sooner if it leaks).
2. Vance Atkinson recommends against using enamels, acrylic or otherwise, because they chip in heavy rain. Lacquers probably do the same thing. He recommends only poly urethanes, such as Ditzler Deltron or duPont Imron. We have used Deltron quite a bit and highly recommend it.
3. Vance was dissatisfied with his rotation speed after installing a Roncz canard. His Cozy sat empty slightly nose down, and even more so with two people in the front seat. By extending the nosewheel he was able to change the ground attitude to 1° positive, and that decreased his rotation speed by 3-4 kts. This reinforces my belief that the Roncz airfoil has less lifting power than the GU at low speeds and low angles of attack (take off conditions).
4. With 6 bolts through the propellor, there are 3 different positions you can mount the propellor. I have

tried 2 of these. The first caused the prop to pass right thru the exhaust blast, and blackened my prop. The second caused it to miss most of the blast, and it's relatively clean. I haven't seen the need to test the 3rd position.

5. Some (maybe all) hairdryer blowers will run on 12 volts if you disconnect the diodes and heating coils. I don't know how well they stand up in heat, but it might be worth a try in the cabin heating system before popping for a much more expensive aircraft blower.
6. The spur gear in the nosewheel retract mechanism is susceptible to losing teeth if subjected to abnormal shock loads, like letting the gear retract with someone sitting in the front seat. A Boston Gear D-1145 bronze gear is tougher, but it is necessary to do a little machine work on it before it will fit. Boston Gear, 14 Haward St., Quincy Mass. 02171. 1-800-243-3J53

FOR SALE

At Oshkosh we discovered a booth that had very nice little Cozy lapel pins for \$3.50. We also learned that in the winter, these people live not too far from us here in Mesa, AZ. They also agreed to make Cozy patches to sew on caps and jackets, and transfers to iron on tee shirts. If you send for pins (for Christmas presents) you should probably include 50 cents for postage. The Ebachs #178, 201 S. Greenfield, Mesa, AZ 85206. We have a phone number (602) 830-9626. They are at this address from Oct. 15 to March 1.

Cozy builders Jeanie K. Irwin and Tom H. Troost also spoke to us at Oshkosh about T-shirts and caps, and are already preparing the art work. They said they would send us samples for our approval shortly. Their address is: 7982 N. Masters, Howard City, MI 49329, (616) 762-4392.

Vance Atkinson will sell plans for the Roncz canard for \$35.00. These include the original design for the Long EZ together with the changes for the Cozy, some necessary and some optional.

LETTERS

Dear Nat, 8/10/88

I completed Cozy ser. 11224, N51810 and went to the airport, Ocala, May 30, 1988. The first flight was June 10, 1988. I made a couple of adjustments for right wing heavy and it now flies great.

Sincerely,

Richard Madison

Dear Nat,

This has been a good year for Cozy N43CZ. I finally worked out the numerous kinks in a new aircraft, did unexpectedly well at several meets, and put a lot of hours on with very little enroute trouble.

After several "speed" mods over the winter, we set off for Jackpot, NV, on July 1 for the famous "When the flag drops, the bullshit stops:" race. It was our first time at Jackpot and I really didn't know what to expect. However, everyone was very friendly and easy-going, and we had a very good time.

We entered our Cozy in the Long EZ superstock class (0-320 powered, no airframe mods.) Early Saturday

morning, the race was on: In a field of 11 EZ's, we pulled ahead with two others and somehow managed to stay in third place for the entire 120-mile race, with a speed of 209 mph. What a surprise: Also surprised were a few Long EZ drivers. But the really big surprise was Sunday afternoon when we were awarded the Grand Champion trophy for the meet!

Although we went quite fast in the race, there are only 4 modifications to the otherwise stock engine; 1) A 4-pipe exhaust, 2) Ellison throttle body, 3) High compression pistons (160 hp), and 4) a Great American 62 x 74 prop. All other mods are on the airframe. The following is a list of changes it has taken me two years to try out and keep or discard. Several of these I did when building the plane. A + beside the item means a gain or recommended change. A o means no change or do it if you want. A - means don't do this or slower performance, or not worth the effort.

AIRFRAME AND SYSTEM MODS

o nose extension (9")	+ cooling air for MK12D
+ forward brakes	+ plastic fuel sight gauges
+ forward hatches	+ rear seat lumbar support
+ Roncz canard w/dihedral	o leaf spring pitch trim
o canopy latch	- front seat 1" fwd
+ electric roll trim	+ new heat system
+ side cooling vents	o relocate landing light & speed brake handles
+ retractable step	+ raise canopy 1-½ "
+ mod. seatback brace	+ storage in rear seat
+ external Loran antenna	+ stainless steel wheel pant brackets
+ ratchet nose gear crank	+ relocate strobe power pack
+ 2nd electric fuel pump	+ full bushing in NG-6
+ full bushing on nose gear spring ends	+ stainless steel NG-3
+ raised nose attitude 1°	
(lengthen nose gear)	

ENGINE COMPARTMENT MODS

+ smaller scoop (12 x 3-½ ")	o turning vanes in cowl
+ relocate oil cooler	o remote oil filter (Oberg)

- | | |
|---------------------------|-------------------------------|
| + 160 hp pistons | + changed 62x72 prop to 62x74 |
| + Ellison throttle body | + 4-pipe exhaust |
| - antireversion exh cones | o concave spinner |
| + rebaffled #1 cylinder | + 4 cylinder CHTs |
| + B&C regulator & starter | + deflector on air filter |
| + deflector on air filter | + modified Brock throttle |
| + rear seat extension | o air deflectors in cowl |
| o relocate fuel filter | |

A lot of people have asked about my "bent" canard. Because of pitch trim change of the GU in rain, I decided to try the Roncz airfoil. I talked to John Roncz, and he suggested bending the canard. It has 3" rise under each tip and $\frac{1}{2}^\circ$ more incidence than called for in the Long EZ Roncz plans. The length is slightly longer than the Long EZ. The bend is not in the middle, but at the fuselage sides. This facilitates mounting and eliminates notching of F-22. Most everything else is standard.

The only performance change I can absolutely, positively attribute to my new canard is increased roll rate, with a possible 1-2 kts speed increase. The speed may come from the airfoil or better building or less total drag - I don't know. But I did not lose any speed after the canard swap. This canard has been thoroughly tested 1" in front of maximum forward c.g. limit to 1" aft of aft c.g. limit. Angle of elevator position vs. airspeed was plotted against forward, mid, and aft c.g.. V_{NE} tested to 220 kts indicated, and an hour and 20 min. of slow flight, cross controlling, and side slipping was completed with no departures.

Before I started the above testing, I re-weighed 43CZ on electronic scales and did a new weight and balance. The original weight of 978# had grown to 1014# - the c.g. remained the same. Because I had built the old canard using 3" tape for the spar cap, same as with the new canard, the new canard was $\frac{1}{2}$ # lighter than the old one.

The nose of my Cozy is 9" longer than plans. I originally thought I would need ballast for my bigger engine with starter and alternator. After helping Uli and Linda on their Cozy, I found out I really didn't need it. In fact, everything I had in the nose has now been moved back to the centerspar. I installed the brakes forward on the pilot's side. They work great!

In order for 43CZ to rotate normally with a heavy load (and the Roncz canard), I had to raise the nose attitude 1° . I did this by changing the retract geometry. Another way would be cutting off 1" from the main gear. This would be easy to do when building, but tougher later on. This reduced rotation speed 3-4 kts. At first I tried shimmying the retract spring with washers. This made the spring stiffer, but the nose still sagged when loaded--most unsatisfactory. With the geometry change, the nose gear actually travels further forward before locking down, thus raising the nose. I added a piece of $\frac{1}{8}$ " 4130 to each side of the retract arm and drilled new holes about $\frac{5}{16}$ " farther out from the pivot. Before I made this change, I would make a typical heavy weight (1700 + lbs.) short field take-off: lock the brakes, full power, come off brakes and haul ass. I noticed that with brakes locked full power would lower the nose about 2". If power was reduced, the nose would rise a proportional amount. This situation does not occur if the nose gear is allowed to travel further forward before going over center and locking. Both Larry and Mike from Featherlite watched this phenomenon at Oshkosh '87 and said our whole takeoff run was at a negative angle of attack. Some Longs have this characteristic, but all the Cozys that I

have seen have it when loaded with 2 people up front. (By the way, Featherlite cut my new canard cores and did a super job!

Several people at Oshkosh saw my Lexan fuel gauges and asked where I got 'em. Write to: John Van Osterom, 1501 Albright, Upland, CA 91786, (714) 985-5887. Kits were \$30 when I bought mine; they work on all EZs. I recommend them because in time your fiberglass windows will get harder to see through.

My Cozy looks different when viewed from the rear. There are 9 vertical slots about 12" below the prop spinner. I mounted my oil cooler on the lower aft engine baffle, so the air travels straight through the cowling and exits through the aft slots. This gave me 10° more cooling. You will notice my funny looking spinner. A couple of local builders decided to make a mold and tryout the new "low pressure shape". We made 4 of them, and aside from being light weight, showed no gain (or loss). That brings me to the 4-pipe exhaust system. Herb Sanders thought the engine might perform better with a separate pipe for each cylinder. When he tried the first set, we noted a 100 rpm increase with a 4-6 kt increase in speed. All 4 of us made sets with the same results. This system provided the single most speed gain of any change that I have made. We know this works on an 0-320. There may not be an improvement with an 0-235. I used the original slip joints and springs from the Sport Flight exhaust system. With over 100 hours on each exhaust, no cracks have shown up on any of the 4 sets that we made. Weight is ½# heavier than the old set.

The following is a log I have made as I have tried different systems:

Date	WEIGHT	MAX RPM	TAS KTS	CONDITION
08/08/87	1400	2750	173	Wheel Pants (basis)
10/02/87	1380	2750	173	Anti-reversion cones
12/12/87	130	2850	178	4-pipe exhaust system
12/18/87	1600	2900	184	160 hp pistons
02/02/88	1472	2900	186	New canard
05/15/88	1453	2840	188	New 62 x 74 prop

Also, for those of you who have charted your elevator position vs airspeed on your canards, I have enclosed my figures on the bent wing Roncz so you can compare.

The last drawing I'm enclosing is a real good heat system. Everywhere I go, I find a lot of EZ's have trouble getting heat up to the nose. The Cozy is no exception. Last Christmas we flew to California from Dallas. Due to headwinds (30-40 kts), it was a long, cold trip. The quartz heater couldn't keep up, we had to go higher and higher to clear the clouds, the sun set, the canopy started frosting over -yessirree, folks, a fun time was had by all. Never again~ Al Yarmey spotted a small blower motor used in Robertson helicopters. I tracked down the price, location, and parts needed. This system works great! There is even enough air so you can run a duct to your windshield. On my last trip to the coast, we were at 17,000' to 18,000' for an hour and a half. The only thing cold was any part made of pure fiberglass (no foam sandwich) such as the nosewheel cover. These parts get cold-soaked and if you touch 'em, you'll get cold-soaked too.

I have an oxygen system, but it's not permanently installed. Al Yarmey has the neatest one I've seen. Some of

the items I have on my plane are the result of other builders' ideas - I just embellished them or modified them to fit my needs or just plain tried them out. We have a good group of builders and fliers in the Dallas - Ft.Worth area, with lots of good planes, ideas, and technical backup. I'd like to say special thanks to John Hayes, whose machine shop we all use to tryout these nifty projects. John has a super-slick Long that's very fast and good-looking.

We had the best surprise at Oshkosh this year: N43CZ won the Cozy Designer's Award! It's a beautiful scale half model Cozy mounted on a mirror surrounded by walnut. Quite unique and original. Thanks, Nat!!

In closing, I'd like to say call me or send me a SASE if you want to know about a specific modification.

Vance Atkinson, 3604 Willomet Ct., Bedford, TX 76021, (817) 354-8064

Dear Nat and Shirley, 8/13/88

We just returned from Oshkosh. Got to see your new plane--sure looks good. There were sure a lot of people interested in the Cozy, must be because it is such a great design. My own Cozy is coming along fine, if somewhat slowly. My goal is to be at Oshkosh in '90. Something I have found very helpful while building the Cozy is an index to the newsletters. Every time I move to a new section or subject, I get out the index and read all builders hints, design changes or other subjects such as glassing, bubbles, auto fuel, mixing cups and tools, etc. It is very handy. If you think someone else might benefit from the index, I would be very happy to provide a copy. I have it on 5-1/4" floppy diskette from an IBM compatible. If you, or anyone will send me a diskette, or \$3.00, and a self addressed stamped envelope, I will be happy to send a copy. Or just a SASE for a printed copy.

I live near Rochester, NY about 90 miles east of Buffalo. Are there any other Cozy builders in the area?

So many good things have been said about the airplane and the plans, it seems redundant to say it all again. But anyway, this is my first project of anything like this, and I am finding the plans easy to follow, easy to understand, and the plane fun to build. Haven't for an instant regretted making the decision. Good work, Nat. Thanks again for the Cozy.

Larry E. Selvage, 184 S. Wilmarth Rd., Pittsford NY 14534

Dear Nat,

A note to let you know how N146SR is coming along. Its all filled, primed black, sanded, and reprimed. Engine has been mounted and will soon be running; then on with electrical. Will be flying in the spring '89. Also I am soloing C150 this Saturday. Everthing is coming along very well. Have gotten back seat time in a Long EZ, fantastic!! Hope you are feeling better from surgery. I called the night you were in the hospital. Here are some pix about a month old.

Thanks a lot, Steve Russell

Dear Nat and Shirley, 9/14/88

Please find enclosed money for the NL and A drwgs. The project is moving along well. The fuselage, controls, nose, canard & elevators are finished. The wings are both skinned. Just received the canopy yesterday, and am looking for an engine. It was exciting to see the Mark IV at Oshkosh. Nice job!

Thanks, Ron Kidd

Dear Nat, 9/12/88

Cozy 379 is coming along real well. All major layups are complete and I'm ready to start finishing. I've been working on my project 17 months and have logged 2300 hrs. building time. I contribute much of my success to other builders in our area. Rex Pershing in particular. We frequently visit each other's projects to share ideas and problems. On a recent visit to another Cozy builder in our area we seem to have discovered what I think is a problem. This builder purchased a complete canard and elevator assembly from Quality Aircraft Components in Bristol, WI. Weight of the complete assembly without the cover that bridges the nose to canopy was 48 lbs. Also the hinge brackets were not in alignment and caused elevator binding. We went home and weighed our canard and elevator assemblies and both of them, one completely finished and painted was 31 lbs. and the other was 30 lbs. ready to finish. We thought that this canard was not within quality and weight standards for the Cozy and suggested he send it back.

Sincerely, Dennis Oelmann

Editorial Comment: We published this letter for seve reasons: 1) It's good for builders to help each other. 2) If parts are overweight because too much epoxy was used, they aren't any stronger--they could even be weaker. 3) If there is any binding in control surfaces they must be rejected and repaired or replaced. 4) It is difficult to predict the quality of workmanship that you will receive from custom shops--some are better than others.

GALLERY