

# THE COZY NEWSLETTER #27 October, 1989

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Cozy builders will need newsletters #4 -#27, and a current subscription to the Cozy Newsletters. The earlier issues contain most of the design changes and corrections. Other issues contain building hints, letters from other builders, safety recommendations, first flight reports, and other information helpful to builders. The newsletter is our principle means of builder support and communication with

builders. The subscription price of \$7.50/yr pays for the printing and postage, and partially offsets other builder support costs.

## WE NEED YOUR HELP!

With so many people building, the plans have been pretty well proofed, so it is unlikely we will find many more corrections, so how can this newsletter best serve your interests? The fact is, your collective experience is now probably much greater than ours, so we need your input to share with other builders. With some designs, builders have started their own newsletters, to help other builders. That hasn't happened yet with the Cozy design, so we are the only ones performing that function. Send us your questions, suggestions, progress reports, pictures, etc. If they will help other builders, we will try to print them. Builders like to hear from other builders as well as from the designer.

## AVAILABILITY OF PLANS

As reported in the last newsletter, several prospective builders have been taken in by someone selling Xerox copies of the Cozy plans. As a service to our builders, we are maintaining a list of our plans customers who, for whatever reason, are unable to build and wish to sell their original plans and transfer their license agreement and serial number. We have helped several people in this way. We will not knowingly support anyone who is using copied plans, but we will help any such person obtain original plans.

## COSY EUROPE

Co-Z Europe has changed its name to Cosy Europe, to reflect the name of their redesigned Cozy, which they have named the Cosy Classic. Their address is unchanged:

Cosy Europe, Ahornstrasse 10, D-8901 Ried, West Germany, 011-49-8233-60594 (dialed from the US)

The name change was also made to make pronunciation in foreign languages the same as in English. There is an excellent article in HOTKITS magazine, October 1989, which explains in more detail the changes they are making. It is sub-titled "Redesign of Nat Puffer's Co-Z Kicks off Cosy Europe's Plan Service". They got the name of our airplane wrong, but what the heck: It's a good article. We don't know yet when the plans will be available, or what arrangements they are making with US suppliers for pre-fab parts. Plans will cost \$500, which includes a newsletter subscription and Owners Manual.

We will be supplying them with design information on our Mark IV, but it will take a fair amount of time to do a thorough job of documenting, so don't expect any announcement by them any time soon.

## JACKPOT

We took in "Jackpot" over the 4th of July weekend. This is an annual fly-in for EZ types, sponsored by Shirl Dickey, of Varieze and E-Racer fame. Jackpot is a small town (?) on the Idaho-Nevada

border featuring a landing strip, 4 gambling casinos, and little else. There were a bunch of Variezes, Long EZs, 4 Cozys and 2 Defiants, for a total of 75 airplanes. The event featured races, and spot landing and ribbon cutting contests, and a "Top Gun" demonstration. The 3-place Cozys made a good showing against equivalently powered 2-place Long EZs, but didn't repeat their wins of last year. Racing is becoming very technical and specialized, with people making carbon fiber props of their own design, and souping up their engines with high-compression pistons and special camshafts. Some go so far as to disconnect alternators and mags (using electronic ignition) to eliminate power consumption by accessories, and remove everything possible from the aircraft to reduce weight. Results are often spectacular, for example 225+ mph turned in by Mike Melvill in his 180 hp Long EZ.

## OSHKOSH

What can you say about Oshkosh which hasn't already been said by every aviation magazine? This year the weather was worse than usual. Several days before and the first day or two were characterized by very hot and humid, with visibilities of 2-4 miles in haze up to 10,000 ft. Then there were 2 days of thunderstorms, followed by a cold front which made things downright chilly. Weather undoubtedly accounted for the lower than last year turn out of EZ types. We counted seven Cozys, but there may have been more. It was the first time at Oshkosh for the Suminskis, the Spreuers. Jack Grandman and Brian Giesler. Noticeably missing were the Mussons, the Francis's, and a number of other Cozys we know are flying.

The Cozy forum was well attended. Builders were most interested in hearing about the experiences of other builders who are flying. John Stamper, who has a Cozy flying in Yorkshire, England gave a very entertaining talk about his experience flying off from sod fields. It was particularly touching when Walt Suminski credited his wife for his building success. Tears came to his eyes, and also those of his wife who was listening in the audience. They have a very emotional attachment to their airplane and also to each other. Brian Giesler talked about his "wide" Cozy. It is 6" wider than plans, and definitely looks different. He did a super job on finishing.

Daniel Hedricourt and his wife, who have a Cozy flying in France, were there. Unfortunately, they speak little English, so we didn't hear from them. We had a number of other foreign builders in attendance, including our friends John and Val Whiting, a couple from So. America, and also from Australia. Australian EAA members chartered and flew a 747 to Oshkosh. Homebuilding activities have been responsible for some of the finest friendships we have ever made, and this will be your experience as well--super motivated and talented people:

Can you imagine our surprise at Oshkosh to find a picture of the Cozy Mark IV on the cover of the 1990 EAA Calendar. If you don't have one, you should order one.

We need to get more of you to join the IVHC (International Varieze Hospitality Club, 2531 College Lane, LaVerne, CA 91750 \$17.00/yr. Ouch!) and attend the annual banquet on Monday night in Oshkosh. We feel so outnumbered by those who still think a woman's place is in the back seat! Hospitality Club members are dedicated to opening their homes or helping in any other way possible other members who are traveling in composite airplanes. If you are forced down by weather, have a

flat tire, or bust something on your airplane, or just want to meet other builders, its nice to know you have friends. It's better than joining the AAA for your car. These are fine folks:

## FIRST FLIGHTS

Cozys are beginning to hatch with increasing regularity. Apparently first flights are becoming so commonplace that some don't even bother to contact us. We think this is a shame, because the first flight in an airplane you have built from scratch all by yourself is an experience that happens to only a few, and usually only once in a lifetime. It is an accomplishment that you should feel very proud of, and well deserving of admiration and praise from your peers. Also, other builders are intensely interested in you experience. If everything went perfectly, they need to know this because it will reinforce their own self-confidence when their time comes. If anything went wrong, either with you or your airplane, they could learn and hopefully avoid repeating it themselves. So let's hear from you about your first flights--the details and pictures please!

1. Michael Marshall, Los Alamos NM has been seen with his Cozy at one or more airshows, but we haven't heard a word from him.
2. Rune Rostrup, Sola, Norway was ready to fly last spring, but we haven't heard a word from him.
3. Steve Russell, Davis IL. My nephew in Rockford witnessed his first flight on 9/17/89. He said that Cozy N147CZ is simply gorgeous, but we have yet to hear from Steve.
4. Rex Pershing, Cedar Falls, IA is back in the air again after his emergency landing. We understand he had to re-certify his airplane. (see letter)
5. Dennis Oelmann, Evansdale, IA is flying another gorgeous airplane. (see letter)
6. Claude Bolomey, Teyran, France, whom we visited and by whom we were treated so royally, is also flying a beautiful Cozy. He is part of the group of 7 Cozy builders in southern France, and a close friend of Daniel Hedricourt. (see letter)
7. We have heard rumors of other Cozys flying, which we haven't pinned down as yet.

Dear Nat & Shirley, August 24,1989

We enjoyed visiting with you at Oshkosh, eating at Robbins, and attending the IVHC banquet. We got home about 6 AM Tuesday morning. Rex slept about two hours in the car and one in bed before he had to go to work. Next year we will plan better.

Cozys N611CZ and N261DM (Dennis Oelmann's) are flying. Both were inspected on August 8 and both are well on their way to getting the 20 hours of local flying time. Dennis & Rex have been flying together and communicating on 122.75. Laurie and I have a bit of security listening to them on the transceiver as they talk.

The local media has expressed some interest in doing a feature story on the two Cozys. We need 2 RED decals for N611CZ which we would like to have on before the media takes pictures. I will send a better picture for the next newsletter after we get the decals, but thought you would like to see how it looks now.

I'm sure Rex and Dennis will send letters before the next newsletter, but they are too busy flying to think about that right now!

Sincerely, Rex & Barb Pershing

Dear Nat & Shirley, Sept. 2, 1989

Another Cozy N261DM made its first flight on Aug. 9, 1989 at Waterloo Municipal. It weighed in at 1011 lbs. with a starter, alternator, and full IFR panel, wheel pants, and everything needed for flight plus an O-320 150 hp engine.

The first flight was on Rwy 12 (7,000 ft) and I had done about an hour of high speed taxi the day before and things were progressing quite well. I had lifted the canard off several times and the mains off once and the aircraft flew perfectly level with no roll trim required at all. The canard starts flying at 60-65 mph. Things were going great!

On this particular day, the wind was 12 kts from 180 on Rwy 12. I lifted the canard off and then the mains, and then got blown off slightly from centerline and was about 6 ft in the air! I flew it back to centerline and proceed to float down the runway with idle power. It just wanted to fly. I could see that I was running out of runway, so I just pushed the throttle full forward and away I went. What a great feeling! My heart was in my throat: I stayed in the pattern and made my first perfect cross-wind landing.

The Cozy handles just like it says in the manual; very light on the controls and very responsive. Since my first flight, I have expanded the flight envelope and tested my aircraft at full forward and aft c.g. It stalls so gently I just laughed the first time I stalled it. The only real difference I can see at the different c.g.s is the canard goes down farther when stalled at forward c.g. before it comes back up, and the controls are heavier with regard to pitch at forward c.g.

So far top speed on my Cozy with a Great American 62 x 72 prop is 202.5 mph with a 0 time engine. We checked the tach with a strobe light. Prop was 2391 when the tach read 2400. Climb out at 95 kts gets 2500 rpm with 1600-1800 fpm to 5,000 ft. Full power level flight lean gives 2700 rpm.

I am very happy with my Cozy. Your design is gorgeous, to say the least. I'd like to thank you for all your effort

and work that you did in publishing these plans and offering them for sale. You have made a lot of homebuilders very happy. Yours is a great success to the composite design. I'd also like to thank Rex Pershing Cozy N611CZ for all his help and advice during my construction. Without him my project wouldn't have progressed so fast. We have become the best of friends and thoroughly enjoy the competition between us. Also my wife for putting up with me for the last 2-½ yrs. Behind every completed aircraft there is a very understanding wife. Yes, guys, I'm still married! And it is possible to build your dreams!

Regards, Dennis Oelmann

Dear Nat & Shirley, August 16,1989

Another beautiful Cozy is flying (I am very proud of it) since August 2,1989. I have logged 16 hrs. and I had my last check by the aviation administration. My Cozy is now approved for normal service. It is really a very nice plane to pilot. What a pleasure: It is a great experience to buy a set of plans, my first time, and have such a plane 3 years later. Thank you, Nat, to make this experience possible, thanks to very clear explanations, chapter after chapter.

No problem for my first flight. Take off and climb to 1500 ft. right and left turns, a few minutes of slow flight, acceleration to 140 kts, 2 touch and go, and 1 full stop landing. No surprises, but I had several flights with Daniel's Cozy, and it is really the same.

As my oil temperature was high (210°F) I did the same thing you did on your Mark IV, a Scat duct from the NACA scoop to an aluminum box on the cooler. I now read 190°F. The temperature in Montpellier is high, 90-95°F. You will find pictures of F.P2XK.

What about another stay in France, Shirley & Nat?

Best regards, Claude Bolomey

Editor: Claude is an international Air France captain, so we feel very flattered by his comments .

### AILERON BELCRANK VIBRATION

The Canard Pusher has cautioned about possible accelerated wear of the aileron control system in Long EZs after changing to steel pushrods, due to sympathetic vibration of the ailerons. We have noticed some aileron hinge wear, as evidenced by some streaking on the ailerons, aft of the hinges on both the 3 place and 4 place. We have not yet installed the Teflon hinge pin kit, added lead tape to the leading edge of the ailerons, or installed the new, double arm belhorns (CS132L-R) available from Brock Mfg. Our airplanes are still relatively low-time. Those of you adding hours much faster than we, please inspect your aileron linkages closely, particularly if you have installed the heavier pushrods, and let us know if you detect any signs of accelerated wear of rod ends, or any signs of fatigue of belcrank. Installation of the new CS132L-R belcranks is recommended for new construction, and will become a mandatory design change if there is any evidence of a problem with the Cozy.

### EXHAUST SYSTEM CRACKS

Exhaust systems are subject to severe heating and cooling stresses, and even though made of stainless steel, and don't corrode like auto exhausts, they still have a limited life. Cracks have shown up on the exhaust system used in the Long EZ. The system specified for the Cozy uses a different design for the slip-joints, and has a much larger exit pipe, which may or may not affect the expected life. Some Cozy builders are installing individual pipes of their own design. Failure of the exhaust system could cause carbon monoxide fumes in the cockpit (from the heat muff), an engine fire, and/or a broken

prop, so this is not a matter to take lightly. Inspect your exhaust system regularly for any sign of cracks, and if any are detected, ground your airplane until they are repaired, and please notify us as well.

## ELEVATOR STOPS

CP#60 reported an incident in which a Texas Long EZ made an unintentional landing on an unimproved strip while demonstrating slow flight close to the ground during an air show. He was flying nose-high and experienced a loss of lift on the canard at full aft stick from which he couldn't recover with power and settled to the ground in a 3-point attitude. RAF said this is uncharacteristic of EZs if properly rigged, and raised an interesting possibility. If elevator stops are not installed, or misplaced, and the elevator can travel past the 22° shown in the plans for the GU canard, the canard lift could be less at aft stick than slightly less than full aft stick, causing the nose to drop. This could be dangerous, in that one would expect maximum canard lift to be developed at full aft stick. Please check and make sure you do not exceed the elevator travel limits shown in the plans. More is not better, in this case and also with rudders and many other limits set in the plans and Owner's Manual.

## INSTALLING THE RECOMMENDED NEW FUEL BOOST PUMP

CP#60 comments on the recommended new boost pumps with fuel proof nylon valves, that the choice is between the 3/8in. 37° flared connections vs 1/8 in. NPT female threads. RAF prefers the 3/8 in version, because of the larger I.D. for fuel flow, but these could present a piping problem. They report that Aeroquip offers a 3/8 in. steel elbow with a swivel nut fitting the 37° flare (PN#2071-6-65) which allows you to make a shorter run from the firewall to the mechanical pump with a flexible line.

On the Mark IV we wanted to install a solenoid valve after the boost pump for electric priming, and needed to use a tee after the boost pump, so the 1/8 in. NPT version worked out better for us. So far, fuel flow for an 0-360 has been more than adequate.

## PROPELLER SELECTION AND ENGINE SPEED

With a high-performance airplane (like the Cozy), the selection of a fixed pitch propeller is a compromise. For take-off, you would prefer rated rpm for rated horsepower, and in cruise, less than rated rpm for maximum economy and engine life. But you can't get this with a fixed pitch. Usually you get 400-500 more rpm at a 200 mph cruise than at stand-still (static). If you want to cruise at full throttle and not exceed 2700 rpm, you have to be content with 2200 to 2300 rpm static. You might be tempted to go for more rpm for take-off and not worry about overspeeding in cruise. After all, don't acrobatic and racing pilots overspeed their engines all the time, and isn't the wooden prop easier on the engine? We checked with Lycoming.

Engine life (TBOH) might be rated in hours, but it is really a function of how many revolutions your engine makes. In other words, engine life decreases as engine rpms increase and decreases rapidly if you exceed rated rpm. They say if you overspeed 5%, correct the cause and don't do it no more! And if you overspeed 10% or more, it is a mandatory tear- down. Things to look for: mushrooming valve

stems which could lead to eating a valve, scored cylinders, worn camshafts, worn parts in the magnetos, and metal particles in the oil filter.

Overspeeding or not, whenever you change oil and filters, you should cut open the old filter, spread out the pleated paper, and look for metal particles. Steel is magnetic; aluminum is not, but it is shiny. One cause of aluminum particles in the oil filter is stuck wrist pin plugs, that is, they are not free to rotate as they should. These are the aluminum plugs installed in the piston skirt to keep the wrist pins centered. If one of these sticks (which is not uncommon) due to improper installation, it will wear rapidly against the cylinder wall. If this should happen and you do not catch it in time, the particles could plug the oil passages and cause premature breakdown and a complete overhaul.

## CARE AND TORQUEING OF PROPELLORS

Wooden propellers have a number of advantages over metal props. They are lighter, less expensive, and not subject to fatigue loss of a blade. They can even be fitted with a urethane leading edge to protect them against pitting in rain.

Wooden propellers are affected by changes in humidity, however. which occur from day-to-day, season-to-season, and location-to-location. They expand when it is humid, and shrink when it is dry. This occurs mostly across the grain, rather than in the grain direction. We stored a new prop on the shelf here in Arizona for about a year, and when we were ready to install it, it had shrunk so much we had to have it re-drilled. We are told that a wooden prop should always be stored flat, and left horizontal when parking an airplane so it does not become unbalanced from unequal moisture pick-up. The slight changes in dimension with humidity require that you check the torque of the propeller bolts regularly.

"Drive" lugs are mis-named. Neither the drive lugs nor the propeller bolts transmit the engine torque through the hub to the blades. Rather, it is the friction at the interface between the engine flange (or the flange on the extension) and the propeller hub. This friction must be high enough so there is no slippage at the interface, and the purpose of the crush plate and propeller bolts is to compress the wooden hub against the flange hard enough so no slippage will occur. If slippage occurs, it will first char the wood, then elongate the lug holes, and the bolts will fatigue from bending with each power impulse and fail in shear. Of course, the propeller and spinner will then depart the aircraft.

When we torque the propeller bolts, we assume that they are compressing the wood against the flange proportional to bolt torque. This is a valid assumption only if (1) the bolt threads have not bottomed out in the lugs, and (2) there is no interference, if a spinner is used, between the radius of the flange and the radius of the spinner back plate, which would use up part of the bolt tension.

Propellers have been lost and emergency landings ensued through neglect of prop bolt torque. CP#60 cited a recent example of a builder/flyer who lost his prop (and badly damaged his airplane in the ensuing landing) even though he religiously check bolt torque. The problem, it seems, was that the bolts had bottomed out, so no pressure was being applied against the flange. CP#60 also reminded builders that Dick Rutan also lost a prop (over Texas enroute to So. America, as I recall), because of an interference between the radius of his prop extension flange and the spinner backplate. The



extensions and spinners are supplied by different manufacturers so you cannot be sure they mate exactly, and should be checked.

You should also appreciate that the greater the horsepower, the greater the torque being transmitted through the wood-metal interface, and the less the tolerance for error. Those of you with 150 or 160 hp O-320s please take note!

## ENGINE LUBRICATION

One of the Forums at Oshkosh which we found most interesting was Mobil's on synthetic lubricants. I was never sure whether synthetic lubricants were approved for aircraft use, and if so, whether the extra cost was justified. It didn't take Mobil long to sell me. Their claims were impressive and well supported by data:

1. Viscosity index. They showed slides taken in a below zero cold room. Mobil AV 1 would still pour when conventional oils were like gelatin. At high temperatures, AV 1 did not thin as much as conventional oils.
2. Temperature stability. Mobil AV 1 withstood higher temperatures than conventional oils without breakdown. The temperature we read for oil returning to the engine from the cooler is not at all indicative of the temperatures the oil is subjected to in some parts of the engine.
3. Lubricity. Mobil AV 1 is slippery than conventional oils. This can be shown on a test stand to result in 2 to 3 more horsepower at the prop, and less wear on the engine.
4. Vapor pressure. Mobil Av 1 has a lower vapor pressure than conventional oils. This results in less loss of oil through the breather.
5. Time between changes. Mobil ran test of 1,000 hrs. in engines without an oil change using AV 1 (they did change filters at regular intervals, however) without finding any evidence of engine wear or oil breakdown. When the FAA reviewed the data, they said AV 1 could go 200 hrs between changes. compared to 50 for conventional oils.
6. Approval of engine manufacturer. Continental approves oils, and has approved Mobil AV I. Lycoming does not approve oils. They write specifications for the oil and depend on oil companies to meet those specs. Mobil said they exceed Lycomings specs.
7. Is there a difference between Mobil 1 and Mobile AV 1. The FAA requires the additives and dispersants in aviation oils to be ashless, that is, they do not leave an ash when they burn. The implication was that if you don't burn oil. you don't need ashless additives.

The presentation was so convincing. I decided to switch not only our airplanes over to AV 1 at the next oil change, but have already done this with my Toyota. I would swear that it runs quieter and has more pep.

## AUTO FUEL

In an attempt to meet EPA standards for air pollution. Arizona has passed a law requiring all auto fuel sold. At least in the Phoenix area (I'm not sure about the rest of the state) to be "oxygenated". This is another way of saying that it must contain at least 10% ethyl alcohol. or approved substitute. The FAA has just announced that this fuel is not approved for use in aircraft engines. because it "presents

a safety hazard". They have not said what this hazard is, but advise pilots to fuel up out of state if they insist on using auto fuel.

## FUEL VALVES

Those of you who subscribe to the Canard Pusher as well as the Cozy Newsletter are aware that RAF was very upset over the fact that some builders have returned the Allen valve, complaining that it didn't fit. RAF seemed to blame the Cozy Newsletter. WOW!! What can we say?

CP#58 clearly states that the Allen valve, "is a direct, bolt-in replacement for your Weatherhead valve." It doesn't describe the valve as having a different shape or a different type of mounting flange than the Weatherhead, nor was any drawing or photograph of the valve offered which might have warned us. We accepted the assurance of our licenser at face value. We only became aware that we had been misled when one of our builders thoughtfully sent us a drawing of the valve, just as NL#26 was going to press.

We have since requested and received a sample Allen valve from Wicks. We agree with Mike that it is a little gem. The design and construction are excellent. Because it employs O-rings for seals, it eliminates the sliding contact of a tapered plug valve, and it should give many years of trouble-free service. We have not condemned this valve, in fact we recommend it as a quality product. If you are willing to do some re-work, you can install it in your Cozy. The drawings below show the installation of the Weatherhead, per plans, for reference, and also the Allen valve with the adapter flange you will have to make, and the revised installation drawing.

## INSTALLATION PROCEDURE

1. Drain your fuel tanks and lines, probably by disconnecting the fuel line after the boost pump and pumping them dry. Avoid a free-fall of fuel, which could generate a spark, and ground the line to the can.
2. Disconnect the fuel lines at the valve and plug them to prevent contamination by debris.
3. Remove the Weatherhead, together with the section of fuel line passing through the seat back brace.
4. With your Dremel, remove enough of the seat back to give access to the original, built-in mounting bracket (Chap.6, p.4, Fig.15).
5. Remove this bracket and then cut away the required amount of the birch plywood hardpoints (Chap.6, p.3, Fig.14) to receive the Allen valve and the new mounting bracket.
6. Make a mounting flange for the Allen valve from 1/8" 2024 T3 alum. as shown. Install it on the valve with two AN3-4 bolts.
7. Make a new valve mounting bracket with nut plates to fit the mounting flange just made, similar to Chap.6, p.4, Fig.15.
8. Trial fit valve, flange, and mounting bracket in position, making sure fuel lines will connect and valve stem protrudes through seat back.
9. When everything fits, flox bracket in place with valve attached. After cure, connect fuel lines and test for leaks. Then repair any excessive cutout in the seat back, allowing just enough clearance to remove valve from the front.

10. Make sure you verify the handle position for right tank, left tank, and off, and placard your airplane accordingly.

By the way, the Allen valve is supplied without a handle. If you are replacing a Weatherhead, you can adapt the old handle. If you are making a new installation, Wicks is looking for a source for handles and should have them in stock soon.

We have no knowlege of any problems with the Weatherhead valve which would justify making a mandatory design change. If RAF, the EAA, or the FAA, or anyone else reading this newsletter has knowlege of a confirmed problem (not just a rumor), we request that they notify us so we can advise our builders.

Regardless of what selector valve you use, we would like to remind you that it is good practice to program the switching of fuel tanks when you pass within gliding distance of an airport, in the remote possibility of a valve problem, a fuel line obstruction, or something wrong with the fuel in the other tank.

### BUILDER HINTS (Dennis Oelmann)

1) Finishing and filling: After using West System, I used the Sterling filler I got from Wicks. After some experimenting, I think I found the best combination to fill those darn pin holes:

- 1 part Sterling
- 1 part catalyst
- 1 part micro spheres
- 1-1/2 parts solvent (lacquer thinner)

The thinner the mixture, the better it fills. Spray with 20-25 psi. Sterling has been improved and has a pot life I found about 30 min. at 65deg. That temperature seemed to work best too. It gives the mixture time to flow and fill.

2) High oil temperature. I had installed a 0 time O-320 in my Cozy. After the first flight my oil temp went to 240 deg. and I had to get it down. The cooler was installed per plans in the lower cowling, but I installed the next larger line size to get more flow thru the cooler. After the first flight, I installed the aluminum "boat windshield" outside of the cowling and in front of the cooler air exit. My oil temp dropped to 185 deg., a drop of 55 deg. The deflector creates a low pressure and sucks the air out of the cowling through the cooler. Editorial Comment: A new engine will run hot during the first hour of operation. Probably some of this drop was due to the rings seating and only part of it due to the deflector.

3) Put fiberfrax inside the top cowling above the cylinder heads and around the exhaust pipes top and bottom cowlings and cover with aluminum foil tape 4 in. wide to prevent the heat from blistering your paint. Attach the fiberfrax to the cowling using RTV silicone which has been spread with a squeegee. Attach the aluminum tape the same way. Do Not Use Epoxy on Fiberfrax!

4) I put 4 in. wide baffles in the lower cowling, aft of the leading edge of the scoop lip to direct air upward to #3 and #4 cylinders (closest to the firewall). This dropped the CHT on those cylinders 25 deg. with no change to the other cylinders. I used .032 aluminum and fastened them in place with short, self-tapping metal screws through the inner skin.

5) When I ordered the new shimmy damper, I asked the supplier if he knew anyone who made a nose wheel fender. He gave me this contact: Gene Zabler (414) 886-5315. He sells a fiberglass fender kit which is really sharp. I ordered one and it fits and looks great! It clears the wheel by 1/4 in. and this keeps the nosewheel from kicking up objects on the runway and going thru the prop. Cost was \$40.00, which includes all hardware and instructions.

## PLANS CLARIFICATION

In Section 1A, p.1, Prefab parts we call out (4) CS 127 brackets and (2) CS 128 Belcranks with bearings, required in Chap. 16, control system. These parts are installed in the wing root, and are shown installed in Chap. 19, p.15 and p.16.

## FOR SALE

1) Cozy project. Structure 75' complete and most materials needed to finish, together with an O-320 Lycoming engine TT 1375 hrs. I lost my medical. .Bargain priced at \$15,000. Contact Bill Overton, (301) 423-8927. (See Letters)

2) Cozy canopy and windows (clear), bargain priced at \$200. Contact Dennis Oelmann, 312 N. Roosevelt Rd., Evansdale IA 50707. (319) 232-4625.

3) Plans with photos for the installation of internal rudder levers in the winglets, eliminating the external belhorns. \$50. Contact Martin Aeronautical Composites, PO Box 4115, Prescott, AZ 86302, (602) 776-8950.

## LETTERS FROM BUILDERS

Dear Nat & Shirley, Sept. 12,1989

It is with mixed emotions that I write to you to confirm our recent telephone conversation. As a result of an electrocardiogram, which showed an abnormality for the first time, a stress test with thallium, and an angiogram, I was diagnosed as having heart disease (blockages). The recommendation was a "quad by-pass", which I have decided against. It is now useless for me at 62 to continue building my Cozy, so I am offering the project for sale.

Getting away from the sad news, the Metropolitan Washington Cozy Builders and Flyers held their annual picnic yesterday, hosted by Cheryl & Larry Randall in their Arlington home. The weather cooperated by giving us the hottest day of the season and hazy sunshine skies. It was very inspiring to see a video of Jack Grandman's first flight in Longmont CO.

When we receive pictures of the picnic we will forward them along with a list of attendees.

Sincerely, Bill Overton

Dear Nat, June 5, 1989

My Cozy is progressing slowly because of all my business trips. I have completed the fuselage now and I am working on the center section spar. If everything moves as planned, by year end I will be concluding the wings.

For your information, there are 5 Cozys in progress here in Brazil. One thing that is changing relatively fast in Brazil is the interest in experimental aviation, with several fly-ins being scheduled for this year.

I'd like to have your thoughts about accepting our invitation to fly to Brazil to participate in one of these events. I plan to attend Oshkosh this year, maybe we can discuss that while there.

Sincerely, Firmino Campos

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