

COZY NEWSLETTER #28 January, 1990

Published quarterly (Jan., April, July, Oct) by:

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

Subscription \$7.50/Year

TABLE OF CONTENTS

- [THE NEW YEAR](#)
- [NEW BUILDERS](#)
- [WHAT WE HAVE BEEN DOING](#)
- [FAA REGULATIONS AND INSURANCE](#)
- [FUEL VALVES](#)
- [ENGINE COOLING](#)
- [NOSEWHEELS](#)
- [NG6 BUSHINGS](#)
- [LANDING LIGHT](#)
- [VORTILONS](#)
- [BUILDER HINTS](#)
- [FOR SALE](#)
- [FIRST FLIGHTS](#)
- [OTHER LETTERS](#)
- [PHOTO GALLERY](#)

Cozy builders will need newsletters #4 - #27, and a current subscription to the Cozy Newsletter. The earlier issues contain most of the design changes and corrections. Other issues contain building hints, builders' letters, safety recommendations, first flight reports, and other information helpful to builders. The newsletter is our principal means of builder support and communication. We also answer telephone calls whenever we are home, and personal letters, but please enclose a stamped, self addressed envelope if you desire a reply. We ran out of our first printing of Owner's Manuals, and had a few more printed. For those of you who have not yet purchased an Owner's Manual, they are priced at \$15.

THE NEW YEAR

We wish to thank all of you who sent us cards at the holidays and regret that we could not respond to

each individually. We hope all of you had a joyous Christmas and will be blessed with a happy and safe NEW YEAR.

NEW BUILDERS

Some plans have been changing hands recently and we wish to welcome our new builders. You will find composite construction easier to master than wood, aluminum, or tube and rag, and it affords more bodily protection, is more durable, and requires less maintenance than other types of construction. The canard configuration, with its anti-stall characteristic, affords a degree of safety not found in other configurations; and by building from basic materials, you will save many thousand dollars over the cost of premolded kits. We think that you made a wise choice in selecting the Cozy.

On ABC's **American Agenda 12/18/89** they discussed the problem of aging commercial airliners. After some number of pressurization cycles, the metal fatigues and the risk of structural failure increases dramatically. Because of the increase in travel, these aircraft must be kept in service. It was stated that this problem will be with us for at least another decade, until the major manufacturers switch to composite construction! Thought you would like to know how far you are ahead of the aircraft industry!

WHAT WE HAVE BEEN DOING

After 16 years of aircraft building, we have been slowing down a bit. you might say we are in semi-retirement. We have become active in some non-aviation activities, like helping a new church to get started, and took several weeks vacation over the Thanksgiving holiday, to visit children, grandchildren, relatives and friends in the cold north country. Fortunately, we got back to Arizona before the really cold wave hit.

We also did a little work on our airplanes. It appeared that there was some aileron hinge wear on N22CZ, as evidenced by some looseness and gray stains on the ailerons, so we installed the teflon hinge pin kit (NL#24). Even though we haven't noticed any aileron vibration, we decided to add some additional lead tape to the leading edges of the ailerons and also to install the beefed-up belcranks CS 132 L-R (NL#25). We also discarded the Brock nosewheel and replaced it with an all-cast aluminum Cleveland wheel (see write up elsewhere in this newsletter). We installed mode-C (as required by Jan.1,1990), but don't have it working right yet. It tested OK on the ground, but on a test flight, Phoenix could not pick it up. Our radio shop says that this sometimes happens when everything is OK, and to give it another try before bringing it back to the shop. We also split the exhaust system (same as on the Mark IV), but did not notice the same increase in static rpm. This seems to agree with what others have found, that the O-235 does not benefit, at least as much, as higher hp engines from separating the exhausts.

It is really hard to give up composite construction. Since we now have a nice shop, but don't need another airplane, we decided to build a composite sailboat.

By the way, we should warn you that we will be gone on vacation from January 21st to February 4th.

FAA REGULATIONS AND INSURANCE

The new FAA strict enforcement policy has received a lot of publicity. Many builders are not aware of how the FARs apply to the maintenance and/or modification of experimental aircraft, or how the failure to comply could not only result in severe penalties, but also void their insurance. Peter Friedan wrote a very informative article in Nov.89 *Hot Kits & Homebuilts* Magazine. He made these points:

1. A Repairman Certificate only allows the holder to do maintenance work on that portion of an experimental aircraft which is not FAA approved. Maintenance on a type-certified engine, accessories, instruments, etc. must be performed and signed off by an FAA authorized person such as an A&P, IA, repair station, etc.
2. Although a Repairman Certificate allows the holder to make changes to an experimental aircraft, any significant change requires notification to the FAA and recertification. Changes which are considered significant are a change in propeller, carburetor, canard, engine, etc.
3. A type-certified engine must be maintained per the original specs. Changing the mount from conical to dynafocal, or changing the compression ratio, camshaft, ignition system etc. require removal of the nameplate and FAA notification.
4. ADs must be complied with even on experimental aircraft.
5. Some insurers, including Avemco, have a clause stating that the policy is void unless the aircraft is certified by the FAA initially, and after any modification requiring recertification per FARs.

FUEL VALVES

In NL#27, we appealed to RAF, the EAA, and the FAA for specific information on the reliability of the Weatherhead fuel selector valve. As a result, Ben Owen of the EAA requested the Des Plaines office of the FAA to run a computer search on reported mal-function of fuel valves, and he sent us the computer print-out. We studied the data and learned the following:

1. There are 70 reported cases of fuel selector valve problems.
2. Most of these involved factory-built aircraft, probably because there are more flying, and also the reporting is more rigidly observed.
3. The problems involved many different makes of valves, not all of them identified.
4. There are many different reasons for mal-function.
 - a. Galling of metal parts.
 - b. Ball-detents freezing.
 - c. Plastic parts and O-rings breaking.
 - d. Fuel line debris jamming a number of valves.
5. There was one report of failure of the Imperial 108H valve in a Varieze, 2 reports of ball-detents freezing in the Allen 6S122 valve in Piper aircraft, and several reports of Delrin parts breaking in the Janitrol valve. There were no reports of problems with the Weatherhead, although it also has Delrin parts, which could be cause for concern.
6. Piper has superceded the Allen valve and the Janitrol valve with the #492-009 Airborne valve.

Our conclusion after studying this data is that no selector valve is immune from mal-function.

Knowing this, it is recommended that you check operation of your fuel selector valve on the ground before each flight, and any indication of binding should be cause for grounding the airplane until it is corrected. In the air, you should not run a tank dry, and you should program the switching of tanks when within gliding distance of an airport.

ENGINE COOLING

Engine cooling is an important subject because it affects the life and performance of your engine and also the performance of your aircraft. The volume of air going through the cowling determines the amount of cooling drag, so it is important to use the minimum amount of air for cooling, and to use it as efficiently as possible.

In full power operation at low altitudes, a rich mixture helps to cool the engine. In cruise, with a lean mixture, 1/3rd of the heat is dissipated by the oil, and 2/3rds of the heat by the cylinder fins. The optimum oil temperature is 180 deg. F and CHTs in the 350 to 400 range. Since higher hp engines generate more heat, those of you with 150 or 160 hp engines must be particularly conscientious about your engine installation.

The Cozy has what is called a pressure cowling. This means that the air velocity is converted to pressure inside the cowling, and it is this pressure which forces the air through the fins and oil cooler. Obviously, if you have cowling leaks or leaks in the baffling, there will be a pressure loss, and you will have a hot-running engine and a slow airplane.

BAFFLING - The object of baffling is to force the air to travel between the individual fins for the longest possible distance and to prevent it from going anywhere else. This is accomplished by wrapping the cylinder fins tightly for the entire circumference, except for a 2 to 2-1/2 in. opening at the bottom for air to enter, and a similar opening at the top for it to exit. The cylinder head fins can't be wrapped, but deflectors at the bottom and top can force the air to travel between the fins. Then, by blocking all other passages, you will have the highest possible pressure in the cowling and the highest possible air velocity between the individual fins and through the oil cooler. We have no problem with CHTs in either our 118 hp N22CZ or our 180 hp N44CZ.

OIL COOLING - If you have a tight cowling and good baffling, there should be no problem maintaining 180 deg oil temperature in summer with the cooler location shown in the plans. Our N22CZ runs at 160 deg. even with some of the cooler fins covered. In our N44CZ we evaluated firewall mounting of the cooler. It was a more difficult installation, but we still run at 180 deg. in cruise in summer, and summer in AZ is a severe test. In NL#23, we published Vance Atkinson's letter in which he described the modifications he made to his Cozy. Out of concern for your (and his) safety, we take exception to his suspending the oil cooler from the engine in the lower baffle, aft of the oil sump, for the following reasons:

1. We have demonstrated acceptable cooling with 118 - 180 hp engines with the cooler mounted in two different locations on the airframe.
2. The cooler, long hoses, and oil would add an estimated 10 lb. to the engine installation. We have consistently recommended keeping the engine installation as light as possible, for

structural reasons.

3. Anything attached to the engine is subjected to severe vibration. Engines are shock-mounted to protect the airframe and critical components from this vibration. If something is cantilevered from the engine, it is subjected to a whipping action. We have learned that oil and fuel pressure senders, if attached to the engine, can fatigue and break with subsequent loss of oil or fuel. Even substantial alternator brackets can fatigue and break. This is the reason for not mounting anything on the engine which could be mounted on the airframe. Rupture of an oil cooler would be a catastrophic failure which would jeopardize your engine, your airplane, your own life and those of your passengers. We don't believe there is any justification to take this unnecessary risk. You should never compromise, when it comes to safety.

NOSEWHEELS

Failure of a nosewheel or nosewheel tire, if it occurs on landing, is not a pleasant experience at best. We know one Cozy which had the hub break out of the Brock nosewheel, and several Long EZs. Sudden nosewheel flats seem to be too common. What is responsible?

It is necessary to restrict the swiveling of the nose wheel with a friction damper, to prevent shimmy at high speeds. But the recommended 2 lb. minimum break away force puts side loads on the nosewheel (a bending load) when steering during taxiing. If you look at the cross-section of the Brock nosewheel (shown below), you will observe that the hub is supported only in the center, and that the center flange is quite thin where it bolts to the rim. Repeated bending loads can cause it to break at that point.

You will also observe that the hole through the rim for the valve stem on the Brock wheel is off-center, and that there is an interference between the valve stem and the wheel which prevents the valve stem from seating in the hole. The result is a distortion of the tube which puts an additional stress on it.

You will observe that the Cleveland wheel (also shown) has much better hub support and a centered valve stem hole. The Cleveland wheel weighs and costs slightly more than the Brock wheel, but we considered the improved reliability to be worth the extra weight and cost. Cleveland wheels are available at Wicks and Aircraft Spruce. New builders can order the assembly less wheel from Brock, and purchase a Cleveland wheel separately.

NG6 BUSHINGS

The side load imposed on the nosewheel in taxiing also puts a side load on the nose gear strut and NG-6. In time, the side play increases. The amount of side play in the strut can be minimized by installing longer bushings in NG-6. Unfortunately, these are not a standard off-the-shelf item, but must be specially machined. We are inquiring whether Brock Mfg. would be interested in supplying these.

LANDING LIGHT

The reason for locating the landing light under the left front seat was not so we could have a fancy retraction mechanism, but rather so it could be adjusted from the cockpit, like a spotlight on a car. If you notice in Chap.17, p.9, there are two different positions, one for landing and the other for taxiing; in fact, there is a whole range of possible positions. The need for adjustability should be obvious. In flare, touch-down, and the first half of roll out, the nosewheel is off the ground and the airplane is in a nose-high attitude. The landing light needs to be directed about 15 degrees lower to see the runway, than when the airplane is taxiing with full weight on the nosewheel and the shock strut spring depressed.

VORTILONS

The function of vortilons (NL#13) is to control air flow over the main wing at low speed and high angles of attack, to provide an extra margin of safety over main wing stall. They **MUST** be installed before first flight. They are attached to the wing with silicone cement **AFTER** the wings are painted. Obviously, if they are attached during construction before finishing, your ability to do a good job of finishing and painting would be seriously compromised. **UNDER NO CIRCUMSTANCES** should you cut slots in the leading edge of the wing to install vortilons without using flanges. You would be destroying structure!

BUILDER HINTS

1. Jeff Horvath has collated all of the Builder Hints by chapter for easy reference and bound them in a notebook. We have a copy and it is an excellent reference, and would be invaluable to any builder. Jeff will make you a copy for \$10 incl. postage. If interested, contact him at 99 Benwood, Creve Coeur MO 63141.
2. The manufacturer of Divynylcel is changing the color of 3/8 and 3/4 in. H45 PVC foam from tan to blue. It is also changing sheet dimensions slightly. Do not be concerned about the color change of having to piece foam pieces together with 5 min. epoxy if necessary.
3. How do you mix your 5 min. epoxy? We use the bottom of our 8 oz. epoxy cups, and then turn them over to use for regular epoxy. We get double use from the cups this way.
4. Do the bottles of 5 min. pour slowly when almost empty? Try storing them on their sides.
5. **DO NOT** wrap your exhaust pipes with fiberfrax. It will burn at elevated temperatures. Do not wrap your pipes with any other insulation, for that matter. They must dissipate heat by radiation and convection. You can cover them with an aluminum radiation shield to protect your cowlings, provided you leave a small airspace in between. Thank you Dave Mendenhall for this item.
6. Both oil and fuel pressure senders should be mounted on the firewall to isolate them from engine vibration. Attach them to the engine with flexible lines.
7. One of our builders, Shane Kennedy, who lives in Ireland but travels to this country, is developing a 3-1/8 in. instrument which will display all of the data for engine management, i. e., rpm, 4 CHTs, 4 EGTs, oil temp & pres., and fuel pres. He is incorporating an alarm feature, if pre-set parameters are exceeded. We will keep you apprised.
8. One of our builders, Steve Sharp, became aware that he was developing sensitivity to RAE epoxy, decided to switch to Saf-T-Poxy II, and in the process of trying to convert his metering pump, splashed some epoxy (catalyst?) on his face near his eye and on his lip. In spite of washing, his forehead and lip began to swell. He rushed to the hospital where they gave him a

steroid shot. He decided to sell his RAE pump (see 'for sale') and buy a new one for Saf-T-Poxy, and has had no problems since. Steve had been using rubber gloves. Barrier cream seems to offer better protection than gloves, strange as this seems.

9. A Long EZ builder-pilot, Mr. Prentice, called us and during our conversation mentioned that he had a landing gear melt down from braking too hard, and described his repairs. He told us that this wasn't too uncommon, and had happened to at least 20 Long EZs. **WE CAUTION YOU AGAIN:**
 1. Insulate your gear legs with fiberfrax near the brake disc,
 2. Install an aluminum heat shield,
 3. Ventilate your wheel pants so hot air can escape and so the discs can be cooled by air convection, and
 4. Avoid excessive braking. You do not have to turn off at the first taxiway, even if the tower requests it.
10. Do not be afraid to refuse the tower if they assign you a runway not to your liking. We have done this at Oshkosh when we are assigned a down-wind runway, and at other airports when assigned cross-wind runways when a perfectly good one was available into the wind. This is not to suggest that you can't land or take off a Cozy cross-wind or down-wind, but why do it just to convenience the tower? Never forget that you are the pilot in command, not the tower!
11. Builder Bill Petty suggests using a table saw (or band saw), with the blade or table set at an angle, to cut foam strips with a perfect angle as req'd in Chap.5,p.3, & Chap.6,p.6. (see picture elsewhere).

FOR SALE

One 4:1 RAE epoxy metering pump, \$75. Contact Steve Sharp, 3110 Atoka Lane, Knoxville, TN 37917 (615) 828-5701 work, (615) 522-1745 home.

FIRST FLIGHTS

1. Mike Marshall, Santa Fe NM, N89CZ, 7/17/89.
2. Dave Mendenhall, Cincinnati OH, N5185Q, 10/28/89.
3. Bill Owen, Stankville MS, N509MS, 11/9/89.
4. John Ashe, Durham NC, _____, 12/29/89.
5. Steve Russell, Davis IL, N147CZ, 9/17/89.

Dear Nat,

Want to let you know that we (and 89CZ) will be in Scottsdale Nov.19th to 22nd and we'd like to get together for dinner.

Since finishing the airplane in July there has been lots to do. We have managed to fly 80 hours since then including a trip to Washington state. Presently I'm building a Roncz canard, as I do have a trim change in the rain. The airplane is really great! Thanks!

Mike Marshall

Dear Nat,

Cozy #300 (5185Q) is now flying. The first flight as 10/28/89, almost exactly 3 years from when I started construction. The plane is everything you said it was, plus some. It now has 16 hrs. and I might add trouble free hours. It has been tested to 220 mph. Empty wt. (full panel) is 911 lb. This has been the most rewarding experience of my life. I will always be grateful to you for designing a flying machine called "Cozy". Hope to see you at Sun & Fun 1990 as well as Oshkosh.

Thanks,
Dave Mendenhall

Dear Nat,

Serial # 509 statistics:

Ordered plans Oct.'87
Started building Dec.'87
First flight Nov.9,'89
Engine Lyc O-320
Empt wt. 956 lbs. everything (wheel pants, radios, etc.)

Note that I installed air scoops in the fairings above the strakes. On the left side I ran a 2-1/2 in. tubing to the oil cooler. Oil temp is 170 deg. at 80 deg. ambient. On the right side I ran a tubing to cool the accessory case and fuel pump. My hottest cylinder is #4 which runs 400 deg. or lower.

Bill Owen

Editor: Excellent idea, Bill, to put a scoop in the upper left fairing and duct it to the oil cooler. Outside air runs 20 deg. cooler than air inside the cowling. Wish I had thought of this!

John Ashe reported his first flight on the phone New Year's Eve, and promised a letter and pictures shortly. He believes his carburetor is set too rich at full throttle and limits his power. Otherwise everything went very well.

11/20/89

Dear Nat,

N147CZ's first flight as with Norm Groom at the controls. He is a very experienced corporate pilot. His comment afterwards was "this is going to be fun." Oil temp went high (no oil cooler) so the flight was not very long.

I flew 147CZ the following weekend and it was everything I have heard about flying your own creation. I was concerned about whether I could handle it, but it was smooth as silk. N147CZ rotated at 50 kts and lifted off somewhere between 65 and 70. Hold the nose down till 90 kts and held a 90 kt climb at 1200-1300 fpm. Nose gear up and went to 3000 ft only to be put into a holding pattern as it

was 6PM and all the corporate traffic was coming in.

So here I was in the pattern with Lears, Citations, King Airs, a Falcon, and two C130s on my very first flight. To say the last, I kept my eyes peeled. First landing was at dusk almost an hour later. As you know, Nat, I am one of the youngest Cozy pilots at 32 and definitely the lowest time to solo a Cozy at 26 hours total time in my log book. But some good things have to come to an end. For insurance and technical FAA reasons I have hangared 147CZ till I get my private ticket sometime in Dec. One more note, it is a pure joy to fly as long as you keep your head clear and stay calm. I have 1.9 hours on it and done over 30 takeoffs and landings, one 70 deg. crosswind 17-20 kts, all very smooth.

I had the pleasure last weekend to meet Dennis Oelmann, his wife and daughter. Dennis gave me a ride. His Cozy is FANTASTIC, both the appearance and performance, I mean BEAUTIFUL! There is going to be tough competition for best Cozy for 1990. His Cozy really moves. I saw 165 kts indicated and we never leveled off. Always climbing and doing turns. Initial rate of climb was well over 2,000 fpm in choppy air.

Some numbers on N147CZ: Empty wt=1009 lb. with O-235 and heavy aircraft starter. ROC 1300 fpm. Cruise at 2500 rpm, 135 kts (no wheel pants). Landing roll--always make first turn off. 3000 hrs building time and \$20,000 cost (worth every penny, too). Thanks for being so patient with me over the last four years. As I have been rewarded with the wildest and prettiest bird on the ramp around here.

Thanks Always,
Steve Russell

OTHER LETTERS

9/21/89

Dear Nat & Shirley

Thought you might like a copy of this newspaper article on two flying Cozys. The local TV station is going to do something also.

Rex got his 20th hour this past weekend and I got a ride! It was great! He let me fly the Cozy in some turns and climb-outs, etc. What a great feeling after waiting for so long for this. I won't hesitate to learn to fly the Cozy. We are anxious to do some cross country flying.

Sincerely,
Barbara Pershing

Editor: The headline read, "The Right Stuff: Pilots Proud of Hand-constructed planes."

10/30/89

Dear Nat,

Sorry about my silence so long time. But now I am ready to take the bird up. Everything is done with the FAA. I just need the letter that says "go". The final weight is 927.5 lbs. and empty c.g. 110.9 with

starter and battery in front. I have done high speed taxi tests up to 60 kts and the nose wants to lift. Everything looks OK but the Cozy wants to turn left when rolling along the runway. Think I have to align the nosewheel again, to 90 degrees.

Regards,
Rune Rostrup
(Norway)

10/26/89
Hello Nat and Shirley,

My Cozy is on the gear, wings with winglets attached, rudders and ailerons installed, wings drilled to centerspar, canard and elevators done. Unfortunately the plane is in the garage in St. Louis and I'm in Saudi Arabia, so not much is getting done.

I'm an FDA chemist, helping the Saudis to establish a pharmaceutical quality assurance program. It's a challenge, but going well. One problem is temperatures at the ports. The shipping containers are painted dark colors, so at this latitude you can imagine the inside heat. I wrote a report on this, recommended painting the containers white, then blew up a copy of the temp chart from the Cozy plans and included it. The idea was well received. You can bet few people had access to that source in this place!

Clyde Rutledge

10/5/89
Dear Nat,

Cozy 316 is making steady but slow progress. I'm just finishing Chap.18. It's a race with mother nature up here working in an unheated garage. My subassemblies were built in my heated basement shop and moved up to the garage for assembly.

I missed you on the flight line, but did get to talk to Walt and Helen Suminski before the rains came. My wife and I enjoyed the forum, especially the antics of the English flyer (John Stamper) and his grass strip flying. After hearing about the gear up landings, I plan to install a green down-and-locked light besides the warning horn.

It's hard to believe it is 3 years since I first started cutting foam. It has been a very enjoyable 3 years. Thanks for producing great plans and for an even greater airplane.

Thanks a lot,
Gary Riedel

10/10/89
Dear Nat,

I have been working on my project for 31 months now and can finally see the end in sight. I am currently finishing (underside is in primer) as well as completing the wiring and engine installation. Vance Atkinson dropped in last month for a visit and provided me with some pointers as well as

encouragement. He thinks I will finish about March. I was hoping sooner, but he has built 2 more airplanes than I, so that is my revised target date.

How exciting to see the MK IV on the cover of the 1990 EAA calendar. What an honor!

Congratulations from the whole cadre of Cozy builders.

Does anyone have a set of O-320 baffle patterns they would be willing to loan? Sheet metal is not my strong suit.

Thanks again,
Ron Kidd
(614) 871-2358

11/6/89

Dear Nat

Here's my check for two years of the Cozy Newsletter. Keep up the good work. Your hard work and dedication to a quality product are greatly appreciated.

Thanks,
Jim White

11/14/89

Dear Nat,

Per our telecon, I've recently acquired a Cozy project begun by Richard Elliot.

As you know, getting the Cozy project is the fulfillment of a lifelong dream. When I was a kid, I wanted 2 things: a magic carpet, and a genie. Well, the magic carpet is now sitting in my garage awaiting a few finishing touches--like wings, engine, instruments, etc. But there is one slight hitch: apparently I'm the genie. I've got to make it happen.

If it is true, as you suspect, that I might be the first woman to build a Cozy, then I'm delighted. With the world watching, I have no choice but to succeed.

I've read through the first 6 chapters of the plans, and found them fairly easy to understand. I'm going to do the practice layups first, and after that, full speed ahead!

Happy Holidays,
Liese Aufill

11/28/89

Dear Nat,

I finally started building my Cozy in Sept. Since then I have completed the bulkheads and on Sunday I laid up the fuselage sides. After having been a R/C modeler for several years, I find your plans easier to follow than a lot of R/C plans. My wife gave me a compliment (I think) the other day when, in reference to my building a Cozy, she said, "Kent, you're a driven man." I really enjoy building this plane. I don't know of any other Cozys in Houston, but if you do please let me know. Sometimes I need consultation.

Thanks,
Kent Copeland

12/10/89
Hi you two,

Hope you are both well. We are still on the Isle of Man and the Cozy is getting on fine. We are still using our Long EZ. Had quite a few good trips from the Island this year. Now looking forward to the completed Cozy.

Happy Christmas
Jan & David Machin

Dear Nat & Shirley,

My Cozy first flew on the 16th of May. I am a very low time pilot. If I hadn't had a check ride with Uli, the nosehigh attitude on takeoff and landing would have scared me witless. After my first landing, I was very pleased with myself--later I learned that firemen had been hiding in the woods close to the runway. I now have over 35 hrs in 47 different flights. My empty wt. is 940 lbs. with an O-235, starter, full IFR, and fire extinguisher. My max speed is 160 kts, before final paint and wheel pants. My Cozy looks rough. Don't know when I will finish paint, cause I'm having such fun. I did get fed up with people at Cranfield though. Many would ask how old it is. When I told them about a month, they would say, "Cor, I thought it was at least ten years old."

Cranfield tested me and the Cozy. There are so many planes in the pattern, and we were to maintain separation. I was terrified! The Cozy drifted around at 55 kts with the stick full aft. Without the safe handling of the Cozy, I probably would have gone back home.

I told you about the nosewheel incident. The sod field was bad and I landed nosewheel first. I had increased the angle of the nose strut. You told me this would punish the gear, and you are right. I have since shortened the main gear.

I landed in heavy rain with a lot of fuel and approached too slow and couldn't flare. The tower said, "I'll bet that shook your glasses," it did. Now I approach a little faster so I have nose up authority to flare.

I learned from a Long EZ pilot that if Cranfield is busy, call the tower and say, "Long EZ fast aircraft", and they will give you the alternate runway. It saves a lot of time, but remember, come in fast, and don't tell anyone.

Later--G-OGJS now has about 135 hrs on the Hobbs, and 115 in the log book, the difference being ground taxi. Also about 30 min. of gliding; 8 landings from 3,000 ft with engine off and prop stopped. Thought I should practice emergency landings. Let the engine cool at 1700 rpm before shutdown. I can land on the runway numbers each time on a 1700 m runway.

I am going to try to fit a 12 in. dia. nosewheel for landing on sod.

My canopy latch microswitch was faulty. I got in the bad habit of cancelling the warning horn. One day as I was gliding to a landing, it was telling me the gear wasn't down, and I cancelled it. No major damage. I was flying the next day.

I landed on John Whiting's 500 m grass strip last weekend. Got down OK; the new brakes work well! But takeoff was a different matter. I aborted the first time. I got out the second time but I won't do

that again.

On one of my early flights, I took an experienced pilot along. He as 6ft.4in. and I removed the cushion. I took off and then let him fly. We were going to Shoreham, about 350 miles away. I took over to land, but the runway was short and I couldn't get it down (I still had low time). I asked him if he would like to try, but his legs are too long to work the pedals. He landed it, but at touch down I grabbed the controls and braked. It was his first ride in a homebuilt and he was amazed at the performance.

Best wishes,
John Stomper (England)

Editor: Just a few excerpts from John's two, long letters. John is our good friend and was the most entertaining speaker at our Oshkosh forum.

Dear Nat,

Cozy 489 is making happy progress; it will be two years on Oct 15 since I received my plans. Fuselage is on the gear, centerspar complete, canard complete, control system in, and finishing the wings. In picture note diving weights holding down leading edge of wings during cure. Worked great.

David Wilson

Dear Nat & Shirley,

Really enjoyed meeting you both at Oshkosh this year. You did a wonderful job on your Mark IV. If I built another airplane, I could see doing a Mark IV.

I did the exhaust pipe modification you described. My static rpm did not change (O-320-E2C, 150 hp). It remains 2400 rpm, however my top speeds increased across the board by 4 kts. The climb performance feels better and appears to be better. It was a lot of work cutting the pipes. My welder didn't do as good a job as I hoped, but they are sealed - he used plenty of rod. The engine sounds just a little different, maybe smoother.

I also installed the Gardner breather into the exhaust system. I had an oil leaky engine. Before I was losing 1 qt. per 3-1/2 hrs. Now it's down to 1 qt./7 hrs. No more messy oil. The engine was not burning oil-just leaking it through the breather.

My flight back to Manassas after Oshkosh was non-stop. 3 hours 29 min. at average ground speed of 178 kts.

As Bill Overton mentioned, we had a Cozy picnic last Sept.10th. There are 8 Cozy builders in the D. C.area and many more interested. My Cozy is the only one flying. The rest are about 50% complete. Al Yarmey is very close to being finished, but has to work so much he can't quite get it done.

Hope you both are fine
Jack Grandman

Hi Nat,

Hope everything is going well with you and Shirley. Here are some pictures to show where I am at. It's been 2 years in Oct. since I got plans. Finishing the airframe (body work) is hard work, but as you see, it really pays off. Hope to be ready to test fly in 1990. I think what helped me the most are other builders and your complete plans and newsletters.

Thanks again,
Jeff Russell

PHOTO GALLERY

Jeff Russell's Cozy. Isn't he doing nice work?

Bill Owen's Cozy before his first flight. Isn't it pretty! Nice work, Bill.

Steve Russell's BEAUTIFUL Cozy. Steve is a professional, and you can sure tell!

Mike Marshall in his new Cozy before his first flight. Looks very nice, Mike!

Another beautiful Cozy by Dave Mendenhall. This was taken just before his first flight.

Bill Owen's scoop in the upper fairing. What a good way to bring cold outside air to the oil cooler, located per plans. An excellent idea, Bill!

Dave Wilson's Cozy is coming along well.

Gary Riedel is making very good progress on Cozy Ser. #316.

Dennis Oelmann's very neat firewall. Dennis has a brand new engine.

Dennis Oelmann's heat shields protecting his gear legs. Very nice, Dennis!

Bill Petty suggests using a table saw with the blade set at an angle to cut uniformly tapered foam strips. Thanks, Bill.

Claude Bolomey's neat space saver panel, in Southern France.

Rune Rostrup ready to fly in Norway. Looks very pretty, Rune, and nice and light weight, too.

This newsletter transcribed to HTML by [Gene Traas](#).