BUILDERS & FLYERS
GP-4
NEWSLETTER

THE OFFICIAL VOICE OF GP-4 BUILDERS ALL OVER THE WORLD

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# John Reinhart installs the LAST PIECE OF WOOD!!!

Hi Spud, fellow builders,

Here it is! The LAST PIECE OF WOOD!!! I put it on April 21, 2001, 7 years, 2 months, and 2 days after I cut the first piece of wood for the stabilizer spar. 7 years, 2 months, 2 days, 4,703 hours to date. Now I have some scrap wood, but not very much.

The remaining construction list is short:

Install the windshield.
Install the lower engine cooling baffles.
Complete the tail cone and stinger light.

Put primer on the top (the bottom is already primered and ready for color) Install seat belts

And then...

Paint & balance con trol surfaces, get it inspected.Paint it all, then inspect & Fly

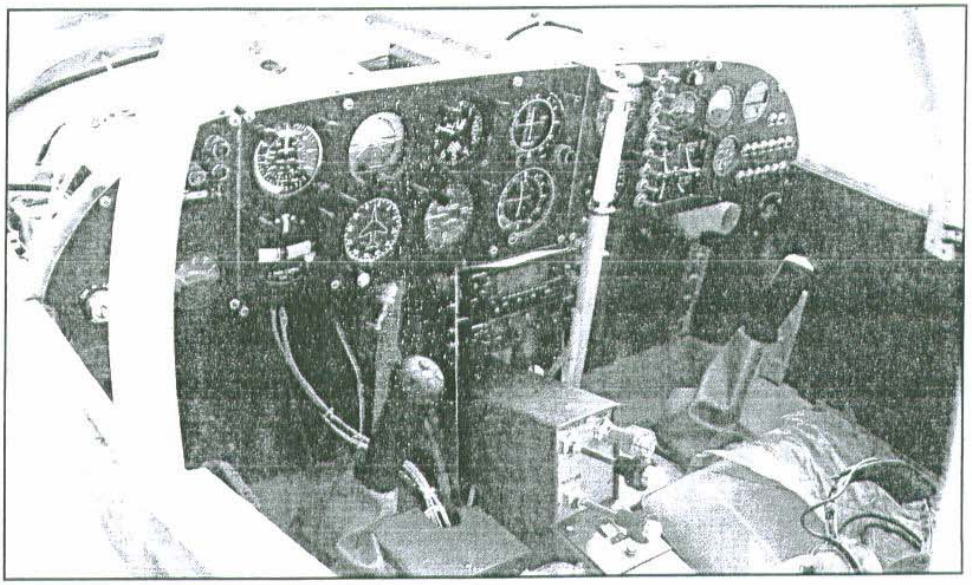
Photo #1. I've the instrument panel complete and all of the wiring.

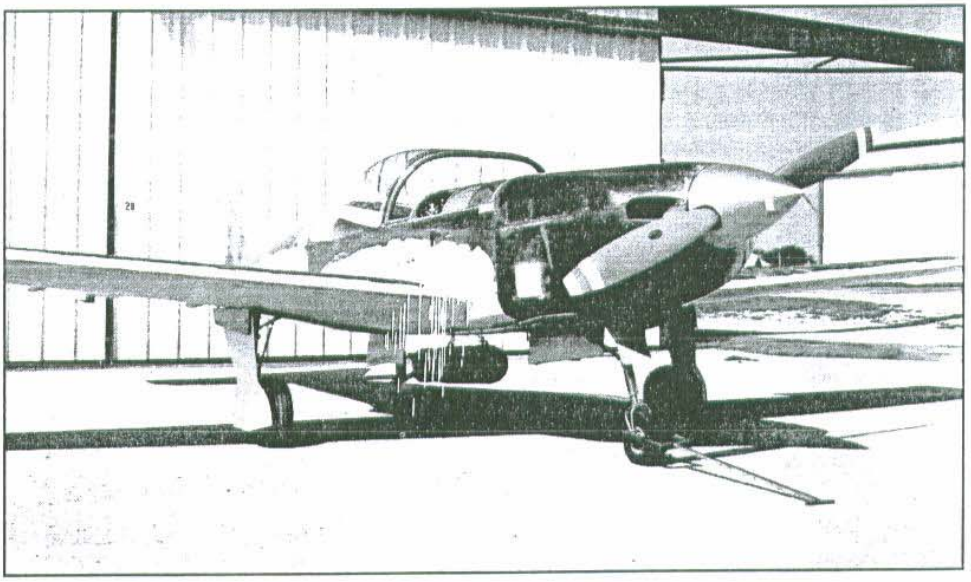
Photo#2. We've have a very large Army surplus supply company here in the Fort Worth area and I had to go get some jackets for my son. Well, well if they didn't have some surplus bombs in stock. I could resist! I think everyone should have one to install on their plane. I've really got'em talking around the airport now!

Photo #3 I must pay well! - This is the kid that's cut my grass for the last 12 years. The YAK 52 is a nice handling airplane. NO wing dihedral. Rolls very easy. He just got his first line assignment for American Eagle. I have to cut my own grass now!

First flight possible late this year, but I still travel every week and work 60+ hours/week for IBM.

John Reinhart
6812 Toledo Ct.
Fort Worth, Texas 76133





# Mike Traud's Canopy Installation

**The Canopy. Part 1 of a series.**

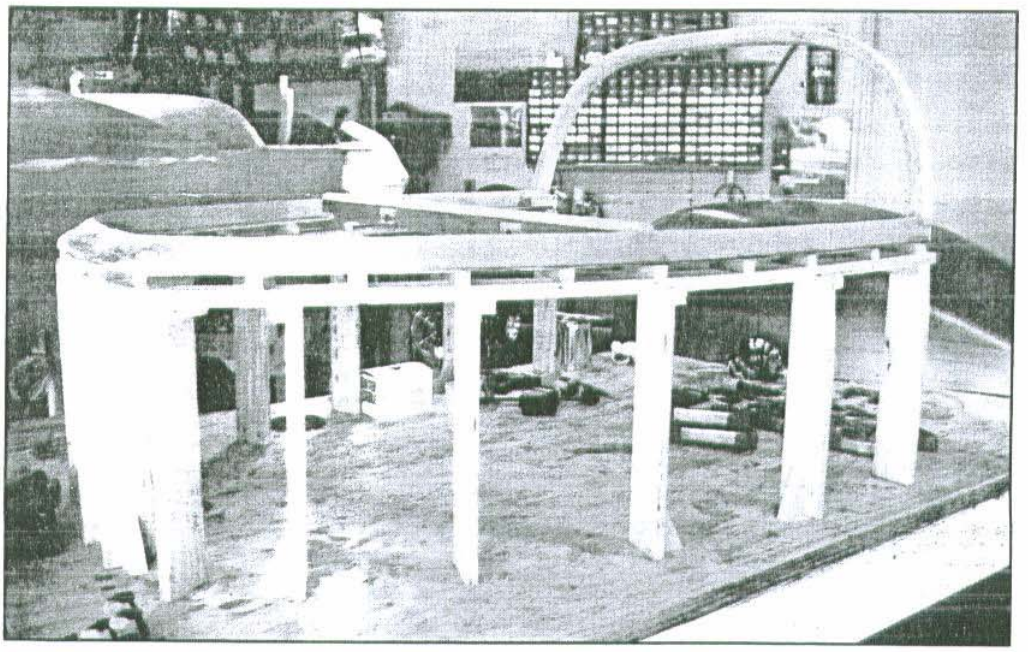
The canopy on the GP-4 can be somewhat intimidating from a fabrication point of view because of many factors. These include the cost of the canopy (approximately $1,500), the size and shape of the structure, and the complex fairing required to ensure a nice smooth fit to the fuselage. This series, published in the GP4BFN, is intended to walk the builder through the process of fabricating the canopy from start to finish in a manner to simplify the process. Please reference and become familiar with Plans Drawings 41, 46, 47, and 49.

Like virtually every aspect of the GP-4, the canopy design was done with purpose and performance in mind. It is a sliding structure which provides excellent visibility, ease of cockpit ingress and egress, and withstands approximately 400 pounds of lift force upon it when cruising at 200 plus knots (which is where you'll find yourself when flying this little hummer).

Where to purchase your canopy. Most builders I have run across are acquiring their canopies from Airplane Plastics Company in Ohio. (*Airplane Plastics; 9785 Julie Court, Tipp City. OH 45371; 937-669-2677)* This organization specializes in custom canopies for many aircraft, including military applications. They know the business and handle each canopy order in a first class fashion. I purchased my canopy from Airplane Plastics and was very impressed with the quality and finish of the product. It takes about four to six weeks to receive your canopy from their facility in Ohio, so plan ahead. Airplane Plastics gives you a warranty, six months from the date you receive it, which enables you to purchase a second canopy for fi the price if you botch the first one during assembly. Hopefully that won't happen, but it is good to know you're not out the whole amount if a mistake occurs. There are other canopy purchase options available, most of which can be found in the back of *Sport Aviation Magazine*. One such company is *Thermo Tec; 530-272-2556.*

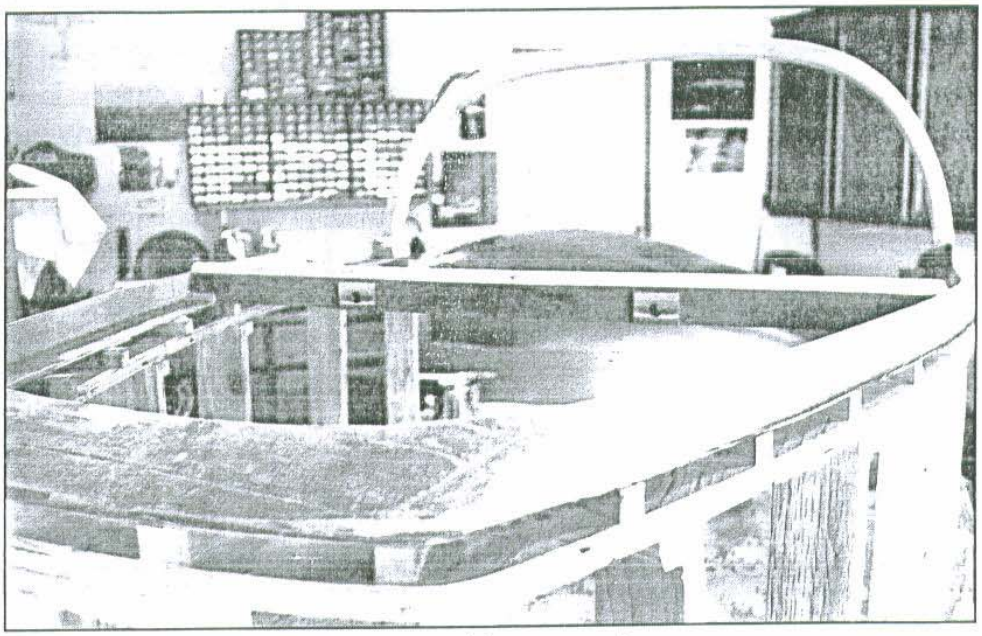
The drawings (41; windshield, 47; canopy) call for a canopy thickness of 3/16 inch, and a windshield thickness of 3/16 inch. The prototype aircraft utilizes these thicknesses and they work very well. However, if you want to reduce wind noise, utilizing 1/4 inch for the windshield is an option which many builders have chosen. (NOTE: Particular attention must be paid to canopy and windshield thicknesses in order to achieve a flush fit at the canopy/windshield juncture.) This series will address canopy fabrication using a 1/4 inch windshield. Early GP-4 canopies were not quite uniform in thickness due to the stretching involved in fabrication. Keep in mind that the canopy used on the GP-4 is derived from the Thorp T-18; the difference being the wider cockpit of the GP-4. So, in order for it to fit properly, the canopy had to be stretched during fabrication, which resulted in thinner plexiglass at the top and thicker plexiglass at the sides. This does not pose any problems or complexities during construction. (The folks at Airplane Plastics have become very adept at fabricating GP-4 canopies to the extent that very little thickness variation exists in the finished product. Like I said, they make a very nice canopy.)

This series discusses fabrication of the canopy and associated structure and assumes your fuselage, fuselage canopy base (apron) and all top fuselage skins are in place.

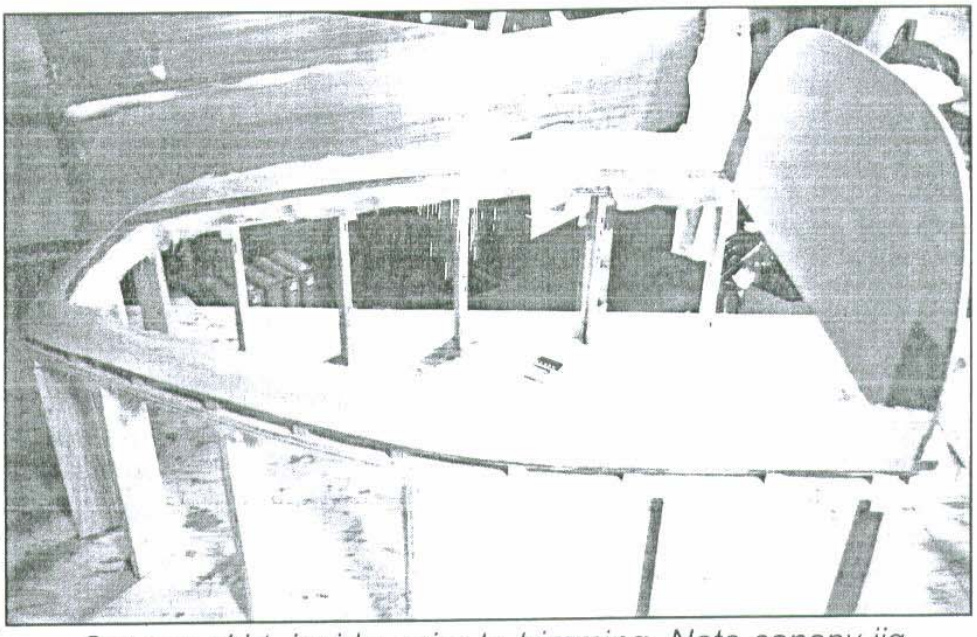


*Canopy skirt, inside, after trimming*

Given this, the first step is to fabricate the 1/8 inch mahogany ply skirt base (reference drawing # 47). Here is where some advance thinking is required. As you lay out the skirt base, keep in mind the thickness of the canopy plexiglass and the outside fiberglass layup. By fabricating the skirt base slightly narrower than the fuselage canopy base, you will end up with a nice, close tolerance fit between canopy and fuselage without having to utilize much foam and glass during fit and finishing. Specifically, the skirt base should be narrower by the width of the canopy plexiglass and associated outside glass layup - approximately 1/4 inch (3/16ths plus the thickness of the outside layup). With this in mind, you can fabricate the 1/8 inch mahogany skirt base as per drawing 47 . If you need to scarf the ply to complete the skirt base, remember to utilize a scarf joint of 10 to 1. Concurrent with the fabrication of the skirt base, you'll need to construct a canopy jig (reference drawing #47). I built mine as per plans with the exception of adding additional vertical supports.

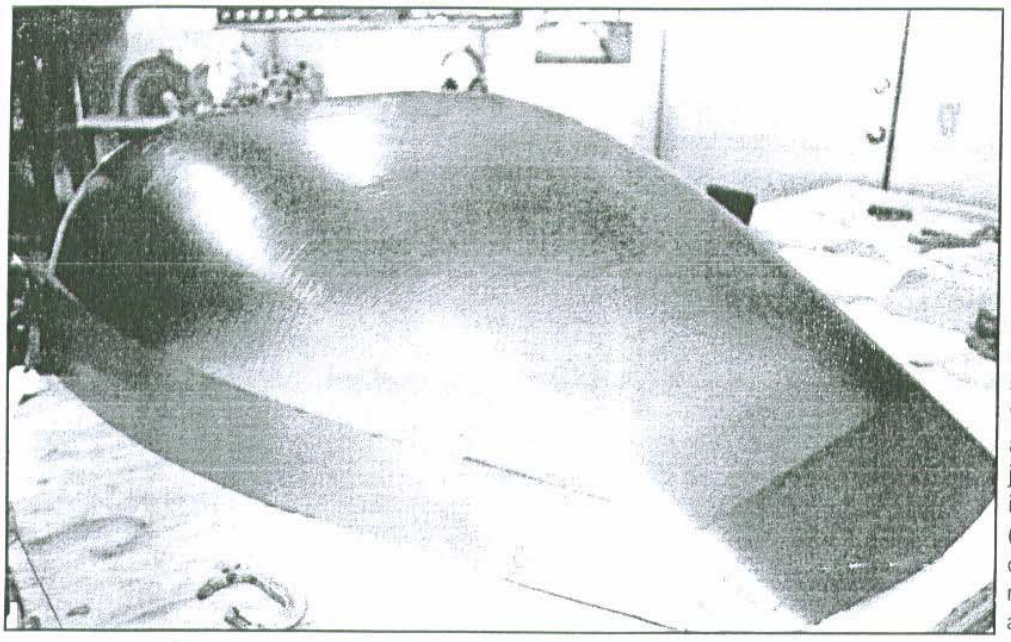


*Canopy skirt, rear view*



*Canopy skirt, inside, prior to trimming. Note canopy jig*

Once you have the canopy jig is complete, you now can place the 1/8 inch mahogany canopy base on the upper surface of the jig structure, level it and prepare for glassing the inside canopy skirt. The procedure for glassing the skirt is detailed on drawing #47. Here is how it goes: First, secure the 1/8 inch mahogany ply base on the canopy jig and make sure it is linear all the way around. (This will be a piece of cake as long as your canopy jig is top-dead-level. This is important because you want the damn canopy to slide *evenly* along and across the fuselage canopy base (apron) without contact between the two surfaces.) Once the 1/8 inch canopy base is secured on the jig, you now can attach the 1/4 inch thick (or so) masonite (or equivalent) forward canopy jig at 98 degrees. This part of the jig maintains the canopy shape at the forward end while you glass in the inside skirt. Do you have your canopy yet? Good, because now is when you place the canopy on the canopy jig in preparation of glassing the inside skirt. At this juncture, you can trim a *little* excess plexiglass off the canopy to reduce it's size. However, if you trim at this point in the game, it is important that you be liberal and leave a fair amount of plexiglass for final trimming on the fuselage. Once you get an idea of how the



*Canopy with "Spray Lat" protective coating*

canopy fits on the jig, you can remove it and install duct tape (I used two layers of tape here) on the inside surface where the glass will contact the canopy. You can also choose to protect the remainder of the inside surface of the plexiglass with either the plastic film that came with the canopy or a product called *Spray Lat* (available from *Wicks Aircraft Supply; (800) 221-9425*). Speaking of protecting the canopy, it is a good idea to take extra precaution to protect the entire canopy with the included plastic film and/or *Spray Lat* during the fabrication process. The last thing your want is to scratch your canopy and have to buff it out. (If you do have a problem with a scratched canopy, call me and we'll get it fixed for you. Easy as pie.) OK. One last thing before you lay up the glass for the inside skirt. You'll need some mold release compound to better allow the canopy to be removed after the epoxy/glass has cured. This is a wax product usually available at plastic supply stores. You might try *Wicks* or *Aircraft Spruce* as well. The stuff I used is called *Tap Wax Mold Release* and is available from *Tap Plastics* in Sacramento, CA *(916) 481-7584*. Apply the mold release compound on the surface of the duct tape and re-install the canopy on the jig structure. Take extra care to insure the canopy is positioned and fitted exactly the way it will be on the fuselage. Clamp it down on the lower edges. Using 4 plys of 8 oz. glass cloth with a 45 degree bias, cut into lengths of approximately 18 inches, carefully apply to the inside of the canopy/base using aluminum foil to assist in the handling of the wetted layup. Press out any bubbles before you peel off the foil. (You initially lay out the cloth strips on the foil and wet them up as you "build" the 4 ply layup. Once the 4 ply layup is fully wetted with epoxy, you can easily lift this layup and apply it to the inside structure, keeping every thing intact. No sweat.) Make sure you overlap the layups by approximately 4 or so inches. If you want, you can also perform two separate layups of 2 plys each during this process, *as long as you do not allow the first two ply layup to dry before appling the second two ply layup.* Any questions so far? Good. (Note: I used West Systems here. I could go into along discourse on epoxy systems, which I have fully researched, but I'll leave that for another issue. Feel free to call me or George Pereira for additional comments on epoxy systems as they are used in a GP-4.)

Once the epoxy/glass inside skirt has fully cured, you then can remove the canopy and set it aside. The inside skirt must be trimmed (as specified in drawing #47) to a height of 1 fi inches all the way around. Keep in mind that this two inches is measured vertically from the base of the skirt. Because the skirt is angled as you move aft around, the surface area increases in order to maintain the two inch height. Now that the inside skirt is trimmed, set it back on the fuselage canopy base and check the fit. At this juncture, we are now ready to install the skirt on the four (two forward side, two aft) canopy rails. This process must be done with a fair amount of accuracy if you want your canopy to slide smoothly. (A binding canopy is simply no fun.) Assuming you have the necessary hardware for the rails at hand, you should now install them per drawing # 46. (NOTE: There exists a modified, Darry Capps canopy rail system which is in use on the prototype and a few other GP-4's. This system provides approximately 1/2 inch to 3/4 inch more shoulder room and utilizes smooth rolling cylindrical bearings for the aft canopy slides. Contact me for further details.) Care must be taken to ensure all four rails are parallel and the bearing mounting brackets (fore and aft) are in alignment with each rail. It is OK to have a slight misalignment if you have a little play in the bearings. Try to keep it straight though. You probably see that in order to completely mount the inside skirt, you must fabricate the canopy crossmember (reference drawing #46, top, center of drawing). Fabricate this crossmember as per the drawing (do not use a single piece of spruce or other wood - that will compromise the structural integrity of the canopy structure. Remember the 400 pounds of lift force at cruise.) Use a table saw to make the 11 degree cuts on the top and bottom of the crossmember.

*Continued on page 9*

# The Editor's Corner

### *The newsletter that almost wasn't.....*

To follow is an e-mail that I sent out to the people that are on the electronic GP-4 discussion group. It will explain the situation to that point and should hopefully explain the extreme delay in getting out the latest issues of the newsletter. I'll comment more at the end... Spud

Hello Everyone,

I'd like to take a moment to talk to everyone on the list that is or has been a subscriber to GP4BFN (The GP-4 newsletter for those unfamiliar).

I contacted George Pereira last weekend and had to regretfully inform him that I was going to stop publishing the newsletter and was preparing to send back everyone subscription fees. Of course George was very disturb by this and truly disappointed.

We have seen a slight decline in the newsletter subscription base over the last five years, but was usually in the 120 to 140 range. As of April 15th I have 46 paid subscription sent in for 2001, but way more importantly I only have enough information for maybe one issue. Now I'm pretty good when it comes to Zigging and Zagging, but I'm not a magician. So I have to ask myself. "Self, is it worth the work to produce the newsletter for 46 guys?" Even If I didn't have a problem with the 46, what was I going to send'em??? With 125+ subscribers I was just getting enough "submissions" for the six issues a year (But it was good information), with 46 subscribers I could only assume it would be less, 60% less! I talked to the printers and it would cost just as much to print 50 to 60 copies as it would the 120 to 140, so the per issue cost goes through the roof. I saw the decline in information being sent into the newsletter the last half of 1999, why... I'm not sure, maybe the instant access to information via the internet, builders dropping off, just no interest in sending info in to share, procrastination, laziness, etc. who knows. I saw this trend and suggested to George that maybe we should take the newsletter to quarterly. He firmly didn't want to do that in that the builders liked the every two month communication. It kept them building!

I feel I would be remiss if I didn't say anything before "Closing the book on the newsletter". Do we have a lot of people out there that had intentions to re-subscribe to the newsletter and just hadn't got around to it? Do we have a quite a few people that have changed their minds and may now be planning or building another plane? Did the newsletter fall short in some way, where it wasn't of value? Gentlemen I'd like to hear your thoughts and ideas on what I think is a pretty important subject. I know we have quite a few builders that went to Sun N' Fun or maybe just not on line for a period so I'll leave it open for discussion through April 22nd.

Very Best Regards, Spud Spornitz

### *The groups responses....*

Spud,

I read your letter regarding the plight of the GP4BFN. It would be a travesty, nay, a temporal disruption in the space time continuum if the newsletter were to cease. I've gleaned much useful information from the newsletter and every issue has served to renew my enthusiasm for the
project and for the design.

I have been remiss in providing input due to the slowdown in my own project. I'm sure that others have similar tales to tell but mine is one of interstate moves and getting a much delayed formal education and raising children and working within limited budgets and on and on.

The greatest cause for delay with my project is the cost of obtaining an engine and prop. I have considered looking into an automobile conversion but I'm not inclined to get involved in all the needed modifications and peripherals.

In the mean time, I have taken on a smaller project (an ultralight) that I can afford for now just so that I can feel a bit of success from completion.

Please, if there is anything I can say or do to ensure the continuation of the GP4BFN, let me know.

Thanks and best wishes,
Bob Lockmiller

Spud,
I hope you get the subs in. I find it interesting and encouraging to hear of the progress others have made and the individual flourishes they have added.

As a Family doctor my skills are mostly self taught and there is a steep learning curve in building a project from plans. To someone who has built a GP4 the plans make perfect sense and the steps involved in manufacture of each part are clear, the newsletter fills the gap.
It would be helpful if someone would edit some of the outstanding articles and hints, and compile them into a supplement to the building manual in a logical sequence related to construction and drawing number. Some builders are experts in various parts of construction ie: Darry Capps with his machining and welding, Jake with the fiberglass

work, and George has a good idea from getting enquiries which are the 50 common questions!

Keep up the good work, Hugh Tapper

Hi Spud....
I for one would be sorry to see the newsletter stop. I like reading about other builders and seeing what they have accomplished. Just last month, I contacted Jim Simmons to make arrangements to meet with him this summer. (Jim was the feature article last month). Yes....I am guilty for not submitting anything to print. Writing is not my favorite thing to do. I know you keep requesting input from us all. I think if you are running short on things to write, you should keep a list of people who have not contributed and send them an email asking them if they would return something within a few days. This is especially true for a feature on a builder so he or she does not feel that they would be bragging.

Let me know if you need things for the next issue.
David R. McKeen.....Leonardtown, Maryland

Spud
I just read your e-mail that you are discontinuing the news letter and would like to express my regret to see this happen. I'm a "new" builder, having picked up a partially completed project in December of last year. I can say that one of the smartest moves I've done so far was to get the back issues of the newsletter from you, as the information in them has really helped me get organized and 'moving out' on my project, not to mention the ton of helpfull hints others have provided. These have really clarified the plans in places where I'm not quite sure of how it's supposed to be - and not confident enough to ask.
If I could have a vote - I'd rather see a quarterly letter rather than no letter at all. While most of us live in the electronic age - there's something about the hardcopy print that lasts long after the e-mail has been erased.
Hope we can talk you into changing your mind -
Jim Gwin

Hi Spud,
I, like many others, will be greatly disappointed if you were to stop publishing the GP4 newsletter. As I wrote in the recent issue, I look forward to each edition to learn about other builders, their progress and their ideas. As an aid in content, I can offer to provide a regular progress report on my project, if you would find some value in that. I have already drafted a report on my aileron trim indicator and my flap position indicator. I'm not certain from your email as to whether your decision is final, or whether you are considering hanging in there. I hope you will reconsider and continue for at least a trial period to see what kind of support you receive.
I also do not believe that the cost is an issue. If your production costs are higher, I would understand a rate increase. I would prefer the bimonthly newsletter, but perhaps a quarterly newsletter is the answer. I fully appreciate that newsletter production is a difficult task and I will respect your decision either way.
I look forward to your response,

JIM SIMMONS
Cheshire, CT

Spud,
I am new to the list am going to start building this winter. I had planned to subscribe to the newsletter and get all the back issues if possible. You can put me down as another subscriber even if you drop to quarterly. The experience of others that have paved the way for us "new" guys is invaluable and I would hate to see it lost.

Bob Shaw
Winnemucca, Nevada

Hi Spud,
About the newsletter, I do understand you, because I am a director of a local homebuilder chapter, we don't have much help when it's time to publish our monthly chapter newsletter.

I have all the GP4BFN issue since #1 and you did a really good job !!! (we don't say to many often, but it's true !). After a newborn and 2 consecutive flood in my house, I just get back to work on my project. If there is a chance that you don't stop the newsletter, I make the commitment to send you a progress report of my project with pictures for each issue, you will get at least one article per issue. If you reconsider your decision, let me know and then I'll send you right away my first article. If you don't I will understand...
Very Best Regards,
Patrice Theriault
Montreal, Canada

I agree with everyone so far. We don't want to lose the newsletter and I think we all want Spud to continue providing it because he does such an excellent job. And if there comes a time when Spud doesn't want to continue with it, then I'm sure someone out there would take over the task. Yes, we definitely need more contributors. I will soon be starting on my project,and will definitely be a contributor. And, as more GP4 builders begin and continue with their projects, I think we'll see more articles and pictures.

If the subscription price needs to be increased, then so be it. I would rather pay $5.00 per GP4BFN than subscribe to Kitplanes or AOPA, etc. Bottom line is that the GP4BFN is an essential part of the building process, andcontinues to promote and inspire builders to "keep at it". Absence of the GP4BFN is not an option!
Great job, Spud!
Good building!
Doug Keesling
Muncie, IN

I, for one, would continue subscribing to the GP4 newsletter. It has

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always pleased me with its contents although it is impossible to set aside the fact that the internet site provides a much faster and dynamic interaction with other builders and sources of information.

One risk here is that part of the info. obtained from either source could be just a duplicate of the other. Not a very efficient use of resources. Could even think into merging it all into the internet site, but then, the question of how many people would be able to reach it and use it arises.Maybe monitoring the web site transit? Whatever decision you make, I will respect it.

Thanks for your good work,
Alfonso Lebron-Berges

**Ok Gentlemen,**

**I will continue to publish the newsletter through the end of this year, Issue #41. I didn't want to leave the builders with no form of communications.**

**But, I've published the newsletter for 6 years and I feel that "I've done my duty" and it is time for someone else to step forward and take over the newsletter publishing chores. That give us the balance of this year to get the new guy setup to takeover starting with issue #42. I will not be producing the newsletter past issue #41.**

**Very Best Regards,**
**Spud Spornitz**

# Welding #101

I would be interested in knowing which welding process everyone is using, since I have little experience in that area. It seems that EAA is promoting TIG more and more, but a lot of the old timers still swear by the torch. What are the pro's and con's of each type, at least from a builder's viewpoint. I am one to listen to the voice of experience more often than the voice of the salesman. Has anyone ever attended one of the EAA Sportair workshops? Any input will be appreciated.

Thanks
Doug Keesling
Muncie, Indiana

Hi Doug:
Doug if you are not experience in gas welding. I would suggest you find someone that is if that is what you want to use. I have done a lot of gas welding and found that welding 4130 is a lot different from welding mild steel. I practice welding some 4130 and had real nice welds but when I put a lot of pressure on them they broke. I have not had that problem with TIG.

Lynn Sheets
Bloomington, Il

Hi Doug,

Over the years I've done some stick welding, some wire feed welding and gas torch cutting (all heavy stuff), but had no TIG welding or gas "light-weight" metal welding experience. Then, several years ago I bought a Lincoln Square Wave 175 TIG at Sun N' Fun. I started playing around with steel scraps, then I went to several of my friends race car chassis shops and gathered all their 4130 scraps (which was thicker stuff compared to aircraft stuff). I practiced, practiced and practiced. I made several pieces and beat them to death trying to break them apart, looked for cracks with a magnify glass, nothing! I proved to myself that my welds were plenty strong, but I just wasn't quite happy in the way they looked? More on this later...

I then went to Oshkosh that same year, went to the welding forum several times over my four days I was there and then bought the Smith "light weight" welding kit recommended for aircraft construction as I was leaving. This unit light-weight! I came home got the bottles leased and started welding. I was "all thumbs" and my welds looked like hell! I just couldn't get it! I was totally frustrated!

I then stumbled upon that my local vocational school (state funded) that offered welding classes AT NIGHT. Two separate courses, one for gas and one for TIG. I checked it out and you'll love this! 7 week course , two nights a week (14 total sessions) Tuesday and Thursday 6: 00 to 9:00 PM. They had all the equipment you could think of. Here's the best part, the entire course was Sixty dollars per course! 42 hours of training and equipment for $60.00, that's $1.43 a hour. I've since found out that this these schools and rates are fairly common!!!

The first thing I learned during the first course was that I had much more control over the gas torch than I thought I had. I was changing tip sizes up or down to go cooler or hotter, BUT would always set acetylene and the oxygen the same. That is light the acetylene and set it just so the black soot smoke just begins to clear up and then add the oxygen to get your inner flame set right and there I would leave it. It would still seem that I was still too hot or to cold, never just right! The teacher quickly saw this and pointed out that tip size changes where large steps apart in the scheme of things.

He pointed out that the presetting of the acetylene to "just until the black sooty part clears up" was just a starting point for any particular tip. He showed me "with what little adjustment of the acetylene" (as little as an 1/8th turn) and with the a proper readjustment of oxygen can change the temperature and the control of the bead. That little 10 minute session ended up being worth the price of the entire course right there!

I then went on to the TIG course. I feel that having a better understand of the gas welding immediately helped me now with my TIG welding. I thought things were starting to look pretty darn good, well getting better anyway.....

Now please try not to laugh to hard on this one, BUT this was the single biggest improvement in welding I've made to date! The instructor come over to my bench one evening and says "put your glasses on Spud" (eyeglasses). I flipped the helmet up and I says "I got'em on!". I guess I've had my helmet within 8" to 12" away from whatever I've been welding since starting the course. Now my vision is fine for everyday stuff, reading, driving and I had gotten new glasses within the last 6 months. So Hmmmmmmm! So I go to Walgreen's (the drug store) and I go back to the "Reading Glasses" display and I proceed to pick me out some 2x,3x or 4x power (I can't remember, but they look like semi-magnify glasses) reading glasses. I went home and tried them out! Unbelievable! Guys....it was a whole new world. I now can truly see what I'm doing comfortably, with particularly with great detail the bead and my welds are rock solid and look much better. This was the best $129.98 I've spent so far, $120.00 for the two courses and 9.98 for the reading glasses (K-Marts has them also).

The instructor asked me if I wanted to take the final welding examine to become a "Certified Tig welder" which he assured me I would pass. I said,"No thank you as I just wanted to make sure my engine and landing gear didn't fall off my airplane, especially when I was flying it!"

So in trying to answer your original question Doug, I'd take either! I would feel comfortable building any part of the GP-4 pieces with either system. If I had only a gas system available, no problem. If you had only TIG, no problem. I now see why some people prefer GAS over TIG and why some TIG people prefer it over GAS. Some other thought though....The strongest gas weld is not necessarily the prettiest. I think the TIG is better in working on clusters of three or more. TIG is a better looking weld, but it is a much slower process. If you were building a airframe like the Tailwind or Bearhawk that is an all tubular airframe, the slower process of the TIG would be a factor.

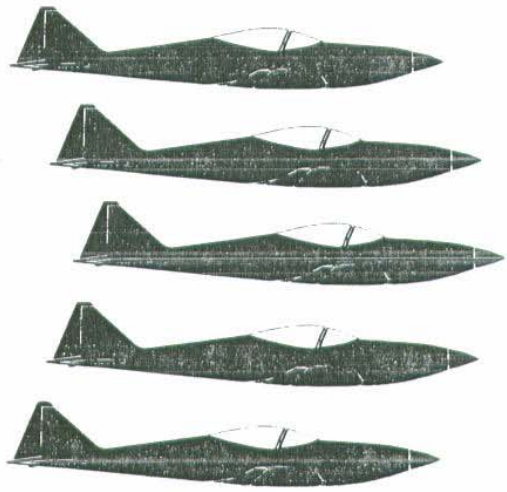
If you are looking for an excuse to buy another piece of equipment (another toy) as I did (ya know that old saying, "The one who dies with the most toys WINS!"). Well Doug, here ya go. The TIG will give you a better looking, stronger, sexier weld and your GP-4 will go at least 5 MPH faster than a gas welded GP-4. So go out there and buy that TIG as I did!

To me it is all temperature control and the control of the bead.

In closing. I did truly get the better deal at Sun N' Fun (Oshkosh also had prettier much the same deal). The best deal I could get here around Kansas City on the Lincoln 175 Square Wave was $1500.00 to $1550.00. After a little arm twisting at Sun N' Fun I paid $1329.00 delivered (they paid for the frt. charges) to my door which also included a fancy "electronic welding helmet".

Very Best Regards,

Spud "Magoo" Spornitz
Olathe, Kansas



## Traud's Canopy

*continued from page 5*

You can also radius a piece of spruce, clear pine or Douglas fir to put a nice top cap on the crossmember. With the inside skirt installed on the canopy base, install the canopy crossmember aligned with fuselage crossmember (at STA 63). This is a good time to check alignment of the aft slide rails before the crossmember is glued into the inside skirt. (Of course, by now, you'll wish you could just trash the whole project and get a Cessna.) When you think you have it all sliding smoothly, glue in the canopy crossmember. (I used T-88 with a little cotton flox for additional strength.) When the glue cures and the inside skirt is sliding smoothly, you are now ready to move on to the next phase.

In the next GP4BFN issue, we will discuss canopy and windshield bows, final trimming and fitting of the canopy plexiglass to the inside skirt, fairing in the fuselage with foam and glass to make a smooth transition from canopy to fuselage, fabricating the outside skirt and maybe a few other things. Stay tuned, and feel free to contact me if you get hung up on this or any other part of your project. Piece of cake.

Mike Traud
Gold River Facility

# George's Corner

Fellow GP-4 Builders:

The winter months are well established here in the Sacramento Valley. The valley fog and rain tend to clip the wings of our Buzzard flights. Our last Saturday lunch flight from Sacramento to Willows ended with a solid overcast at Willows, which meant no lunch at all.

The GP-4 has been cast in the roll of pathfinder for the other Buzzards. I seldom take off first but usually get to the lunch site first so I can relay the weather back to the others. On this occasion, I had climbed through a broken deck to 4,500 on top and set power to 25 square, then leaned to 10 gallons per hour. My Loran ground speed was showing 230 KTS. and Willows was only 14 minutes out. I was in beautiful sunshine and broken had gone too solid under me. The 13 other Buzzards were Willows bound until they got my call to divert back to Rio Linda. Northern California weather has always been hard to forecast, so we take a looksee to be sure. The first large hole in the clouds that I could see, I decided to let down and head back to Rio Linda. It was so cold, I left 18" of power on to prevent any shock cooling and "WOW" was this thing hauling. I came out the bottom at 1200 feet and 245 indicated. The air was a little rough under the cloud deck so I let it slow up at 18" and gradually increased power up to 20" and set the prop at 2350. I was still getting a lot of turbulence. Tightening up my seat belt, I brought the power back to 18" and my airspeed stabilized at about 175 mph. Fuel flow was between 5 and 6 gallons per hour. Banging around in that rough air; it is reassuring to know you are sitting on an 8G chunk of wood!

Some of the Buzzards had called in landing, and I was soon on a 45 for 17.

I hope you builders persevere and get your GP-4's into the blue. This is a real fun airplane to fly.

***Engine Mount:***

I have found that the dynafocal engine mounts, (Wicks P/N EM 100-005) will allow the engine to sag down about 1/8" below the cowl after 10 to12 hours. The prop spinner will be slightly below the cowl. This is fairly easy to fix as you can washer the bottom mount between the engine and the dynafocal sandwich mount to raise the engine back up again. It's a good idea, when you are fitting the cowl to the spinner location; to have a 1/8" thick washer next to the engine on both top and bottom mounts. This way you have some leeway to move the engine up or down as necessary. I made my own washers by using a 2" hole saw and .125 thick aluminum plate. Beechcraft says to rotate their mounts every few hours. I have done this on the Lycoming mount but couldn't notice much difference in sagging.

***Vacuum Pump:***

You should change your vacuum pump filter cartridge at each annual or at least every 200 hours. Be sure to mount the filter somewhere under your instrument panel, so you can get to the cartridge for an easy change or you will find yourself neglecting changing the filter like I do! (See drawing 49)

***Nose Gear Link Drawing #50:***

Some of you have found that the 1/2" X 1/2" X .065 wall, square tubing is not available to build the nose gear link. Any 1/2" X 1/2" down to and including .049 wall is OK.

***Landing Gear Strut:***

Once you have your landing gear struts completed and painted, I recommend greasing the interior with a waterproof grease used in boat trailer bearings. It's blue green in color and available in most auto parts or boat part houses. The interior where the strut leg slides should not be painted. Be generous with the grease. The excess will eventually come out the strut bottom, which you can wipe off. I use the grease for all of my wheel bearings as well.

***Newsletter:***

Please help Spud with articles on your GP-4 problems and successes. Your articles and photos are of great interest to us all.

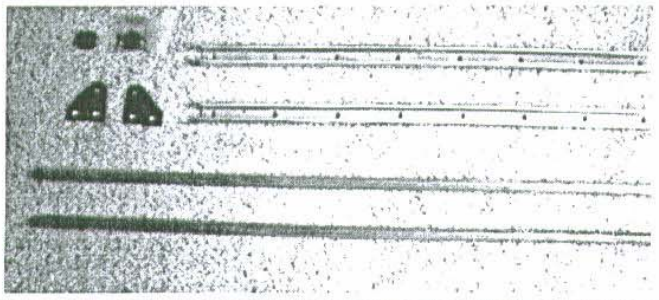
When you write or e-mail to me, please give your plan number or any change of address.

Thanks and regards to all,

George

# The Classifieds

***For Sale:*** **Stainless Steel canopy hardware kit.** The components include: Stainless steel canopy side rails, stainless steel canopy slide rods, 4130 steel brackets for side rail bearing mounts, and the bearings. Call for pricing.
Mike Traud,11907 Prospect Hill Drive, Gold River, CA 95670



***For Sale:*** GP-4 project: fuselage framing, vertical stabilizer framing, horizontal stab and elevators framing complete. Firewall installed. All fuselage internal hardware complete (D. Capps). All wood packages, two fastener kits. Project signed off by EAA Tech Advisor with compliments on construction quality. Fuselage signed off for closure. Stu Fitrell, sfitrell@lxpk.veridian.com or (301) 373-8087 or 25723 Vista Road, Hollywood, MD 20636. (27/28)

***For Sale:*** New Hydraulic Gear Plans Upgrade. Convert your GP-4 manual landing gear system to hydraulic - electric system. Complete with emergency back up system. (Note: System must be installed prior to wing skinning!, no retro-fits) Complete print package for $150.00 Mail your checks to: George Pereira 3741 El Ricon Way, Sacramento, California 95864 phone (916) 483-3004 Fax (916)978-9813 E-mail GP-4@juno.com

***For Sale:*** Pre-fabricated composite components for GP-4. Cowling , exhaust blisters, inlet ramps, tailcone . Complete four-piece package. Call or E-mail for current pricing. Shipment will be sent "Freight Collect" - Jake Jackson - Rio Linda, CA (916) 992-0608 E-mail J7200@aol.com

***Back Issues:*** We have all of the GP-4 back issues (#1 thru #23) available for $3.00 each. Mail your checks to Bill Spornitz - 1112 East Layton Drive - Olathe, KS 6061-2936

***For Sale:*** Brand new, never out of the box,Oildyne hydraulic pump for GP4 retractable gear. $300.00 FOB New Port Richey, FL. (727) 846-7784 John Satkowski

***Wanted:*** An original video (not a copy!) that George Pereira made on the GP-4. I have a multi-copied video now, but is very poor. Will gladly pay a reasonable price. Contact: Spud Spornitz (913) 764-5118 or 1112 East Layton Drive, Olathe, Kansas 66061

## *Subscribers Information Center*

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***New*** ***913-764-5118***

***E-MAIL bspornitz@home.com***

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This is an actual fly-by during deployment of the Nuclear Aircraft Carrier USS Stennis. The pilot was grounded for 30 days, but he likes the picture and thinks it was worth it. Yikes!

**Warning: Don't try this at home in your GP-4**

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# *First Class Mail*

## *NEWS FOR CRAFTSMEN OF FAST WOODEN AIRCRAFT!*