BUILDERS & FLYERS
GP4
NEWSLETTER

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

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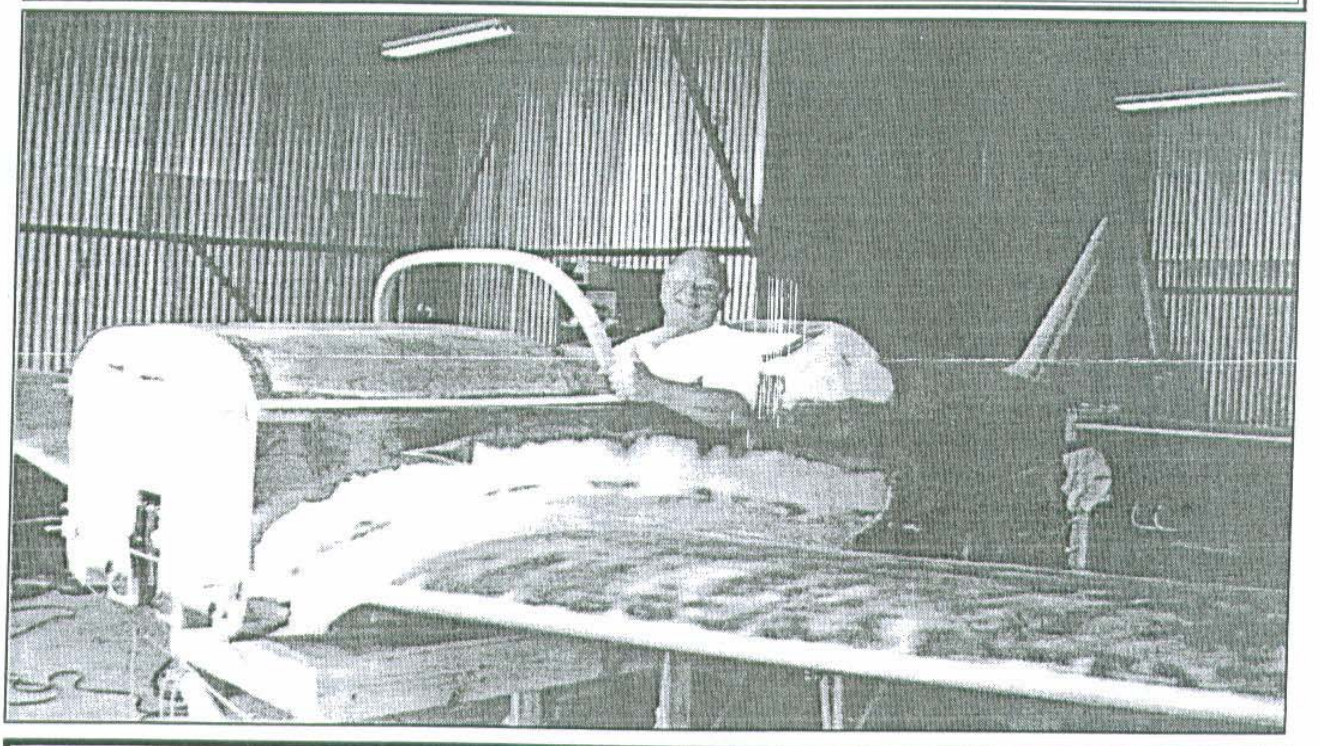


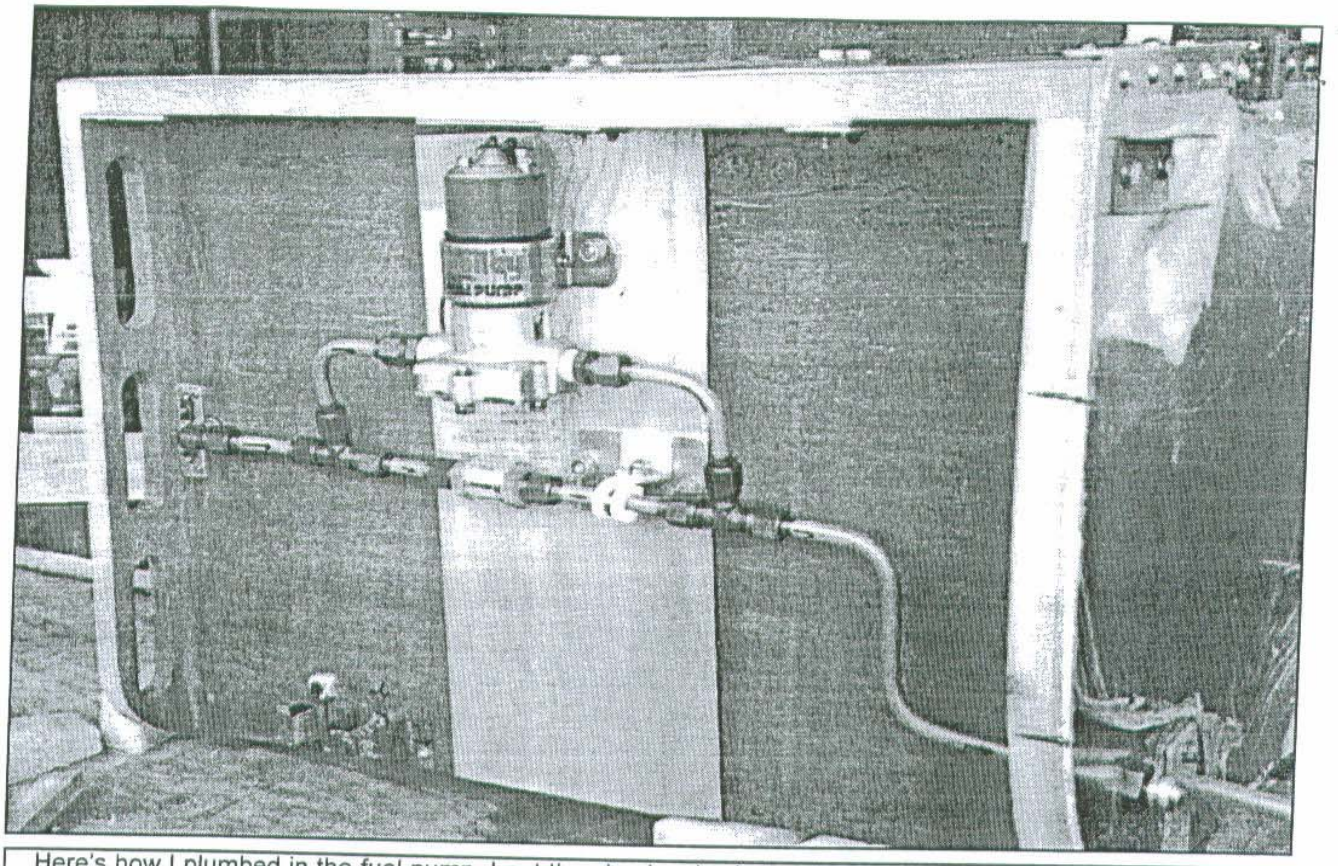
C.J. "Smiley" Reinhart of Ft. Worth, TX getting in some early stick time!

Part One

I've sent a picture of the way I plumbed in the Holley fuel pump. Different, but better for fuel flow than the drawing. I checked with George first before I did this and he agrees.

I reinforced the floorboard with a piece of 1/8" Birch and put a clamp over the fuel line at the mid-point. That secures everything at the pump, at the fuel selector valve, and at the bulkhead fitting through the firewall, and in the center – 4 places. I insulated the floorboard with ½" black fuelproof/soundproof foam from Wicks Aircraft. The aluminum blast tubes have 1/8" fiberfax glued to them. The whole system clears the exhaust tube by 2". The books all say you need to clear an exhaust stack by a minimum of 1 ½". This certainly does that.

My fuselage is covered except for over the panel and fuel tank. I just finished putting the deck cloth on it. I will have to take it to the hangar and mount it on the wing again so I can install the stabilizer. That will finish the fuselage. The reason that



Here's how I plumbed in the fuel pump. I put the check valve in the straight line with the fuel pump off to the side since 95% of the time the pump is off. This makes the fuel flow straight through. I sent a diagram to George for approval first. He said my way would cause less turbulence – fewer curves and bends and he felt it was OK. - CJ

I'm waiting to mate the fuselage to wing again before installing the stab is to ensure its all "square"

Last year when I first mated the fuselage and the wing – I did it to drill all the attach fitting holes and the holes through the spar. I spent 1½ months just to be sure I could pickup the fuselage and drop it on the wing – many times- in 2-3 minutes and have all the measurements come out the same. Only then did I drill the holes through the spar and brackets. Because I still had a year of work on the fuselage – and that means rolling it on its side to work on it – I couldn't put the stab on then. Now I'm essentially finished with the fuselage so I can take it to the hangar, mate it up and glue in the stab.

I have all the firewall hardware built – the oil cooler mount with solenoids, the Fram fuel filter, the nose wheel well firebox assembly that seals off the wheelwell from the engine compartment, etc.

I'm ready to flip it upside down and build the wing center section and gear doors. The – I'm about ready to paint and do final assembly. The IO-360 sits on the hangar floor.

I still have to so the canopy. I have the frames built and a green T-18 canopy in the hangar. The canopy rails are built are built and ready to attach. The rear canopy rails are like Darry Capps with roller bearings around ½" tubes *(??? I want to see pictures and info on that, I didn't realize Darry had done his differently from George's, I know Jackie Yoder did. Can we get some close-up details shots, etc. - Spud).*

Just to note – ARO no longer makes the air cylinders for the gear doors. I used a stainless steel "throwaway", i.e. – you can't repair it – Schraeder cylinder. The name on it is "BIMBA". It's a ¾" diameter 4 " throw spring loaded. Same as the ARO. I got a 3" throw for the nose gear door should I put one there. So – when you builders can't get the ARO go to the place that sells air cylinders and order the substitute. Also – I would suggest that you never tell them what they're going to be used on.... One place refused to sell them to me since it went on an airplane. I went down the street to another place, ordered them, and never told them what I wanted it for. "Precision Industries" is where I got them. I think they're around the US in various places. They sell retail and charge sales tax, so there's no problem getting them. - C.J. Reinhart

Part two

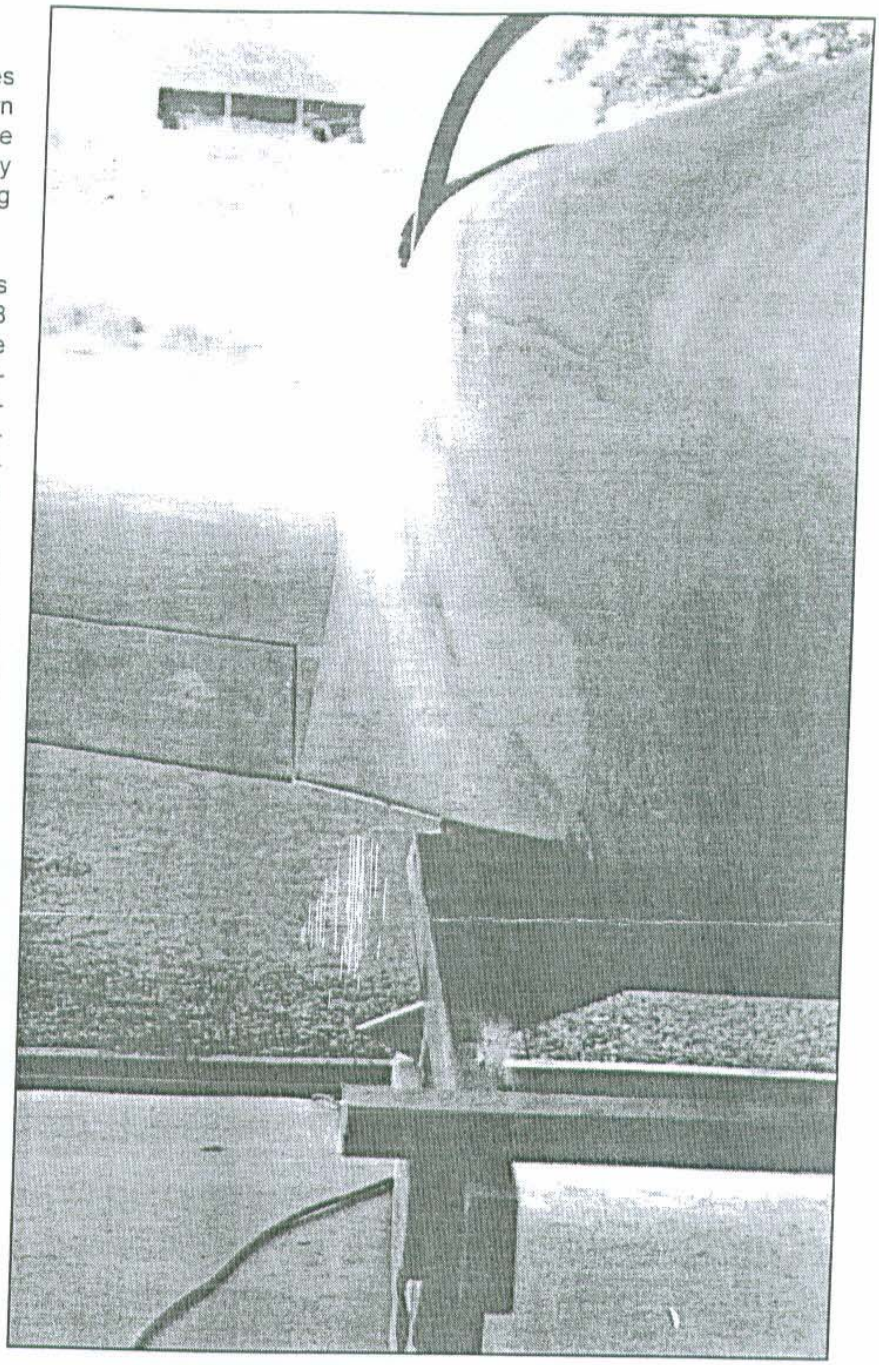
Thanks for publishing the pictures and diagrams of the cradle to turn the wing and the scaffolds for the trailing edges. I think this will really help our fellow builders in keeping things moving.

Here is an update of the pictures you used on the May – June 98 cover. I've come a long way since then and its looking like a real airplane. The only construction requiring craftsmanship is the center section of wing. I built the top wing fillets before I turned the thing upside down. Those fillets have taken approximately 80 hours of work, but they are perfect "expanding radius" fillets and each side matches the other. I used modeling clay to duplicate the curves from one side to the other as a template at each 6-8" intervals.

I'm ready to turn it upside down and I'll do what Jack Yoder did and build a turnover structure on the firewall. I'll use ¾" plywood and 2" X 6"s instead of 1" angle iron. I have a sign company lined up to turn it over using their truck with a 20' derrick truck crane on the back. I sent him pictures of Jackie turning his from the GP4BFN and the sign company owner said "no problem".

I just finished a complete landing gear uplock system test – gear handle goes down and locks into the uplock assembly (gear came up). Switch starts the air pump, and the locking looks engaged. Later, I retracted the gear, but kept the air pump turned off. I hung 100 lbs. of weight on the gear – 50 lbs. on each side. They came down about 5/8" as George said. Then I turned on the air pump and it sucked all that weight right up tight! They fall free when the handle is removed and the air pressure is released. Weights also scatter all over the hangar floor!!!

So – what I have left is the wing center section and gear doors.



Canopy and windshield (the forward deck is complete, ready for glue on), then finish wiring and plumbing, hang the engine (I have IO-360-A1B6D). Prime and paint, certify and fly. Oh – hopefully get some more flying lessons from Darry, George and Jake.

Last summer I was in San Jose, Ca. And went over to Neuman to see Darry. His spirits where excellent. I talked him into going to the airport and then he suggested we go flying *(I bet ya this part really broke your heart – Spud)*. We went up and I got about ½ hour of good instruction in the basics. Turns, keeping the nose on the horizon, DON"T whatever you do – shove the stick forward! After 5-8 minutes I could handle it. ¼" movement on anything in any direction appeared to be enough. I spent the whole afternoon with him and really enjoyed it.

I still travel 3-4 days a week, 3 weeks out of the month for IBM, but still exceed my original target of ten hours a week. I average 12-13 hours week. I have 2748 hours in the plane as of this writing in 4 ½ years – making progress.

Regards,
C.J. Reinhart
Fort Worth, Texas

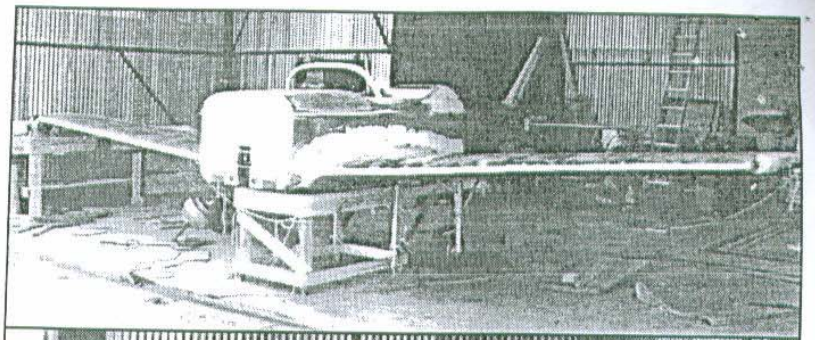
"Multicom" Continued

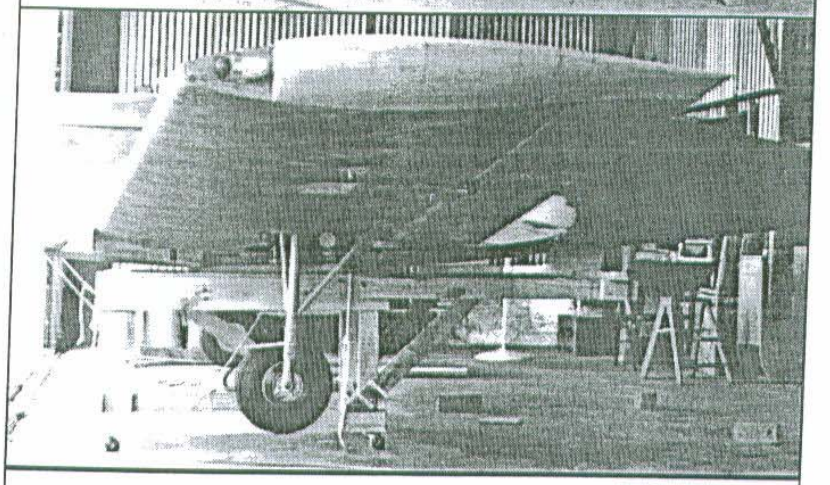
The Troops checking in....

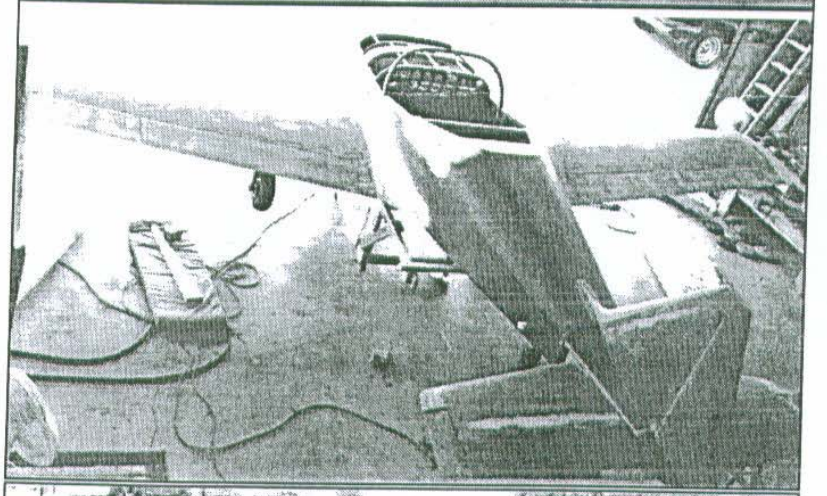
Spud, I do look forward to the newsletters as its the only means we have in this part of the world of keeping tabs on what is happening in the GP-4 world.

I expect my Wicks material kit to show up in the next week or two and have the workshop prepared to start. George gave me the addresses of 7 people in Australia who have bought plans. I wrote to them all and so far three have checked in by email and all have started building. One of the seven has decided to build something else, no word so far from the remaining three. I'll keep you posted on progress. Please post my name and address in the newsletter so that If there are new people coming on board or someone I may of missed so they can contact me.

John Evans
P.O. Box 71
Picton, New Zealand







Dear GP-4 & Osprey 2 builders:

We have some news for immediate release in the newsletter.

Darry Capps has decided to retire and will no longer be building metal component parts for the GP-4 and the Osprey 2. He is finishing up the orders he has on hand but will be taking no new orders.

Darry's work was of the highest caliber and George is currently looking for a supplier of these components who can match Darry's fine workmanship.

Gayle Pereira

Scratched Winshield?

Who ever put the tip out on the internet to use toothpaste on plexiglass to get scratchs out, thank you very much.

I was unloading my son's car seat from the plane when the wind shut the door on it. I had a scratch all the way across the window. A few minutes with the toothpaste cleaned it right up.

Thanks again,

Gary Woodbridge

The Troops checking in!

Hi, Spud,

Just for background, I have plans number 385 for the GP-4 and am currently busy gluing center ribs to the main wing spar. After Oshkosh, I hope to start on the flaps and ailerons. I built the Thorp T-18 that we will fly to Oshkosh, but I am a novice when it comes to welding. Therefore, I purchased Harry Wooldridge's project about a year ago. He had welded up almost all of the gear, etc. and had done a lot of work on the fuselage so I'm in pretty good shape. I guess I'm at that famous situation——50% completed and 90% yet to go. I sure am enjoying working with wood, and the GP-4 has great lines—-the whole project is a real pleasure. And according to what I read, it flies pretty nicely, too.

The newsletters are a great help, especially George's Corner and the many photos that you publish with other builders letters. I've got Harry Wooldridge's old newsletters as well as the one's I've received from you for the past year or so. Needless to say, I keep them handy as I plan each day's work!!

Thanks for compiling and publishing such a great newsletter.

Thanks,
Les Conwell

Hi Group!,

Thought I should drop you a line. Haven't written any input for the newsletter recently. So here you go, use it or not, any way you like.

First off, my condolences to the Berrick family. I never met Bill but from the article in the last newsletter it sounds like he led a fruitful and contented life. I wish I could have met him.

Secondly, I finally received my first order of spruce from Wicks. I ordered the wood for the fuselage and empennage minus the mahogany in January. It finally arrived the second week of July. I refinished our kitchen table while I waited, and made some jig pieces I'll need for the fuselage. I've got the fuselage laid out on my table and should start cutting wood real soon. With some luck I may be finished gluing up the fuselage sides before winter sets in. Waiting on the wood got me searching around for other GP-4 projects up for sale. There are some out there if some new GP-4 builders are interested in cutting down on their build times.

I also joined the local EAA chapter here. Seem like a nice bunch of folks. A lot of RV'ers in the group, but also some regulars with Bonanzas on down. I'm the only GP-4 builder in the bunch.

Finally, a few questions for you, George, or your readers. How well does T-88 hold up from a storage standpoint? My workshop, 1/2 of our garage is not temperature / humidity controlled. Here in Texas it certainly gets hot in the summers, > 95 degrees. We're somewhat fortunate in that the humidity is generally low, below 30-40% ususally. Also, what about working time during use? Should I wait for Oct. here in Texas before I start gluing, when the temps are usually around 70- 80 degrees? Or if it's 95 degrees, it's OK, but I might have to work a little faster? Just curious. I'm certainly going to do up some test joints no matter what I do.

Regards,

Steve Sokolich

*"**Troops checking** continued on page 4"*

GEORGE'S CORNER

Fellow GP-4 builders:

Since the Bill Berrick accident, some builders have questioned the advisability of using the manual gear retraction over my recently designed hydraulic system. I am still waiting to hear from the N.T.S.B. regarding the accident. They now have a set of plans and a history of my flight test work on the prototype. Definitive answers may never result from this but they are working on it.

I will try to answer the gear question by explaining my view of both retraction systems. Hopefully, it will help you make a choice.

Manual System:

My prototype has worked very well for the last 13 years, about 750 hours. Once the air driven uplocks were installed (dwg. 37 & 37A), it has been trouble free.

On the plus side, the manual gear is all direct linkage, (except for the air uplocks). No electrical or hydraulics to fail. Pretty straight forward. Manually operated systems require no redundancy for gear down operation by FAA part 23. They feel that direct linkage is no different than your flight control system. If you can weld, it is cheap to build. A bunch of tubing, some bushings and rod end bearings. The largest expense is the air pump and two air cylinders.

Sounds pretty good, so what's wrong with it?

Well, it's manually operated and it takes some muscle to move the gear handle from gear down to gear up. The faster you go, the more muscle required since the nice flush gear doors set up a low pressure download which inhibits retraction with speed. After lift off, say 80 mph, you have about 7 to 10 seconds before you're going through 110 to 120 mph. You should have the gear in the wells before 100 mph. This is easy once you are comfortable with the flying characteristics of the GP-4. I tell all who will listen, to test fly with the gear down. Once you have some altitude, slow the aircraft to 100 mph. Drop some flaps and then retract the gear. You can cycle the gear up and down until you are comfortable with the throw. You should also practice with the plane up on jacks in the shop or hanger. I am a fairly big guy and gear retraction is very easy for me. If any of you flown the older Mooneys, I can say that the GP-4 retraction cycle is easier than they were under a 100 mph. I've owned two of them for comparison. If you are of small stature, perhaps you should consider the hydraulic alternative.

Hydraulic System:

What can I say? Flip a switch and watch the world go by! What's wrong with this? Nothing at all except you could have a hydraulic or electrical failure. That's why FAA requires a redundant system to get the gear down in a home-built. The hydraulic gear does cost more. I don't know exactly how much more. The Alldine pump is about $350. Three cylinders are about $200 each and there are a bunch of hoses and fittings. Perhaps some of you hydraulic builders could enlighten Spud on cost. Oh yes, the plans are $150.

I did a lot of research and a year's work designing and building a full scale working mock up. I feel good about the design, particularly since Pat Salamonde says his hydraulic gear works so well. It is possible to retrofit the system into a finished GP-4. Pat did, however, you should decide before you finish the nose gear tunnel and install the main gear.

Now that you all are totally confused, I'll sign off with,

Regards to all,

George

P.S. Please don't hesitate to call me if you want to talk about this hydraulic alternative. Best time is 8 to 10 am or 4 to 5 PM. Pacific Western time. Phone - 916-483-3004 or Fax - 916-978-9813

The Classifieds

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

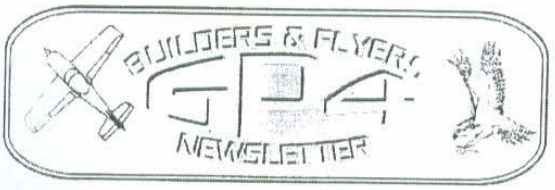
For Sale: Now flying Ultralite due to loss of medical. GP-4 project now for sale. Gear in wing. Tanks ready to mount. Tail group enclosed. Ailerons and flaps mounted but not covered. Call and make me offer. (423) 396-2917 Rich Nadig, Ooletewah, TN

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

Wanted: Looking for a GP-4 project that is "well under way" through "close to being finished". Will consider all projects. Contact me at (503) 646-5276 or by mail at Edward Mitchell, 13835 S.W. Devonshire, Beaverton, OR 97005

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

For Sale: GP-4 project - Most wood materials to complete. Most metal parts cut-to-fit and tack welded. New hartzel prop and spinner to George's spec's. Contact Tony Mikus in the evenings after 5:30 PM mountain time. (970) 963-9575



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Here is something that CJ is as equally proud of as his GP-4 and that's his father. Here's CJ - "My father was one of the first Delta Airline pilots. The one above is one he didn't quite get home in - He retired in 1962 with 1 year of jet flying after 42 years. He also holds a world endurance from 1929 - 246 hours, 11 minutes in flight. Refueling was accomplished with a hose". - ***C.J. Reinhart - Fort Worth, Texas***

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First Class Mail

NEWS FOR CRAFTSMEN OF FAST WOODEN AIRCRAFT!