

First Flight Report!

That's Pat's beautiful GP-4 on the front cover. Number seven! - Spud

Dear Spud,

Enclosed is a photo of my GP-4 on the day of its first flight. My GP-4 took to the air at 3:00 p.m. on 10-11-97 at Merritt Island, Florida. It was flown by a test pilot, Greg Garee. He reported that it was a "sweet" flying airplane and flew like it was on "rails".

The design on the tail and sides is something that I put together and is available to any GP-4 builder through "Moody Graphics" P.O. Box 1450, Belleview, Florida (800)-749-2462 fax (352) 245-2463 George said "it was very nice". I have incorporated most of the mods such as, air assist gear doors, spring on the main gear where I installed heavier rod ends per Bill Berrick of Omaha, Nebraska.

We are at present going through the full testing program. As of this writing we have three hours on the plane. We've seen 222-225 mph at 23 square. Also we were hangar flying over a cup of coffee and we came to the conclusion that I am the sevenTH GP-4 to fly and the first GP-4 builder to finish his plane that was not retired at the first flight. That's it for now and I'll keep everyone posted on our progress right here in our newsletter.

Pat Salamone

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Congratulations Pat!

Volume 16 - September-October 97

THE TROOPS ARE CHECKING IN!

Hello Spud and fellow GP4-builders

The heading of our nice newsletter says "*The official voice of GP-4 builders all over the world*". Now I will live up to Spud's request for contribution and make the heading true: I live in Denmark, and for people familiar with Europe I can tell that Denmark is in the northern part, and one of the three Scandinavian kingdoms (the other two are Sweden and Norway). It is a small independent country with about 5 million inhabitants. If I should mention any special Danish (not pastry) that might be known in USA it would be Copenhagen (our capital) and Tivoli, Victor Borge (entertainer mostly living and performing in USA), Hans Christian Andersen (fairytale writer), and our beer Carlsberg.

When people hear about my project the name GP-4 very seldom ring a bell (yet). After giving a description of the aircraft, especially for people unfamiliar with flying, (not to mention people who can not imagine anyone to build his own plane) and stated the type of aircraft and engine, wood construction, retractable gear and cruise speed, eyebrows are often raised in a suspicious looking and indulgent attitude, which show discredit thoughts to either me, the air craft performance, the wood and glue idea, or the likelihood of success. It's difficult to say which is the most dominating one. And the next unavoidable question: "When are you finished?". All I can say is "in about 5-6000 hours". "When are you going to fly?", "well, in 8-10 years from now"? Then all conversation dries out, unless with people, who really know me. And honestly, I do not know when I am finished, and it does not matter at

all! I love the challenge and joy of building, and if I want a trip into the sky, a rental plane is at hand. (That's always the cheapest way, but who's taking money here?) I think many of us GP-4 builders share the same feeling and experience.

And why the choice of GP-4. First of all it is a fast, handsome shaped and elegant high performance airplane. Further, it is a strong design built to carry two big persons, luggage and a lot of fuel, which promise the possibility of fast cruise and long range. Dear George, thank you indeed for your fine design and eye for layout and details. However, neither my wife or myself are that big, so I will have to do something about the pedal extension, but it is nice to know, that we always will be safe inside the flight envelope.

And wood? Well, that is a very nice and forgiving material, easy and clean to work with. It is also of importance, that you do not have to pay a lot of money up front to start with, as for "glass-kits". You do not need to wear special body protection during a great part of the working time. You will not be in danger of getting sick, experience a rash from fumes and dust, or endure skin irritation from composite materials. (I know that some limited work of that kind has to take place, though). Even when you have a short moment of time available, you can always find a little thing to do without the need of getting in working dress first, and you do not smell, when you come in for a meal. If you have made a "mess" (and everybody will) it is often easy to remedy. Every little or big job is very rewarding, and anyone in your family can be of help from time to time, so you

all can experience the distinguished feeling of satisfaction from a nice work done.

This reminds me of another important part of an aircraft project. Have you hugged your darling lately for being so understanding, forgiving, and accepting you to use all household money available for your own dream? Think about it, well -, I believe you are doing so already, all GP-4 builders must be nice, caring and special people, each one following a fantastic dream filled with creative zest.

In 1994 I visited George and flew the GP-4 with him from Rio Linda (regrettable too short). That was a very great experience that even more confirmed the right choice of bird to build. I took a lot of pictures, and a few days later on a return trip I was lucky to get more detailed photos of the magnificent plane, which was totally stripped down for maintenance and check before a trip to Oshkosh.

My GP4-project is about three years

and 600 hours old. Unfortunately I have experienced a break due to moving to another part of the country, followed by repeated preparation and installation of workshop facilities, and building an extension to the house. At this moment the wing is ready and waiting for the manufacture of hinges, landing gear and fuel tanks.

I have some experience from wood construction as former being a boat builder of sea going sailing yachts. From producing the spar caps my

contribution to fellow builders would be on making a good and perfect wood scarf very easily:

1. Measure the scarf length from the spar cap end, make a square mark with a pencil. Do this to one flat side on each spar cap part.

2. Arrange 4 or 6 spar cap parts (in pairs 2 or 3) on top of each other on the worktable. The worktable must be absolutely straight. Displace the parts like steps on a staircase; use the table edge for straightening up. The square mark should just be visible at each next and lower part end.

The bottom cap scarf end must be

carpenter's wood plane about 1½-2 feet long). If you can not find one, a smaller one will do, but the plane should not be shorter than 8-10 inches. On beforehand you could use a band saw to cut off most of the "steps", but you will be amazed how quick a wood plane in good hands can do the job solely. During planing be careful that the edge of the growing scarf area all the time is parallel to the square mark. Also take care that you are planing equal off from each spar cap part. You should be able to plane the scarf area on all parts down to the marks in long steady moves. In the beginning the plane tool will "jump" from step to step. Continue planing until

the scarf area barely reaches the square mark. Now your scarf joints will be exactly straight and square. Check the scarf area with a long ruler. Undo the clamps.

4. And now prepare for the glue work. Take two spar cap parts, which together form the required spar cap length. Mount the first spar cap part with two clamps on the worktable with non-adhesive paper (use plastic

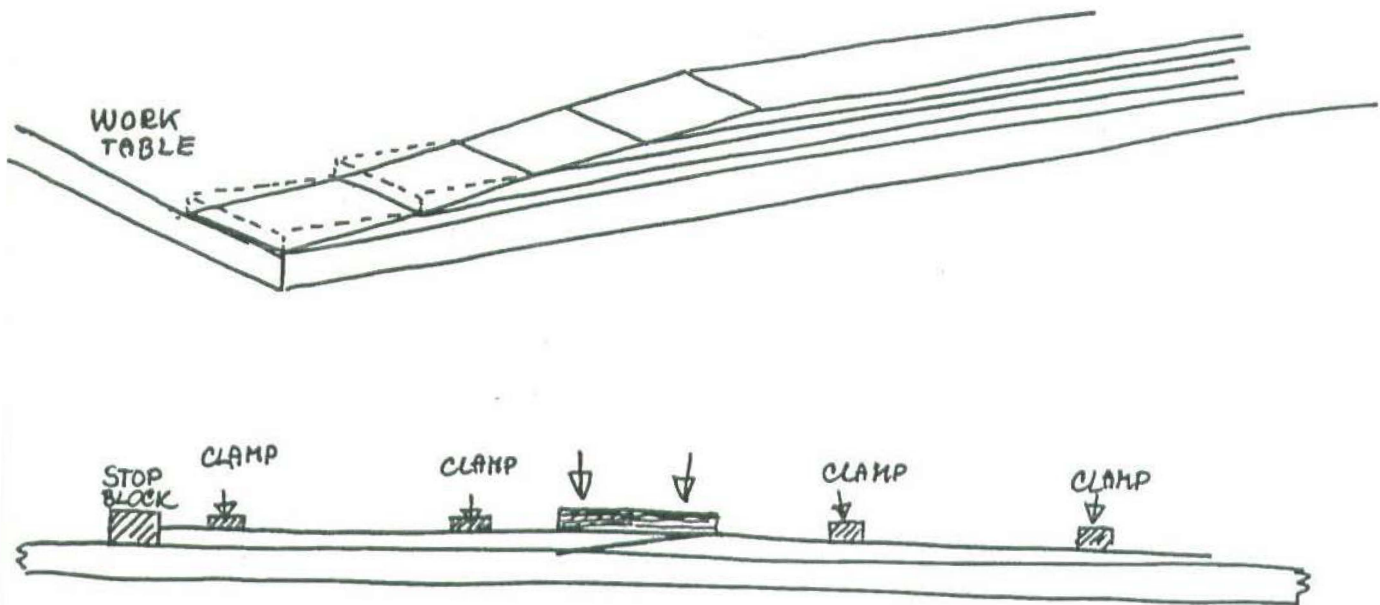
folder or similar, which do not stick to the glue) underneath the straight flat side. Test-mount the second part with two clamps longitudinal and use the worktable edge to get the set up straight. Pay special attention to the upper scarf thin end, that it just touches the square mark on the lower part. Mount a stop block at the end of the second part end to secure the same position when re-mounted. Test-mount the glue joint clamps with a flat and thick plywood block covering the whole scarf joint area. Secure that the flat plywood block



Oshkosh photo by Carl-Erik Olsen

placed right up to the work table square edge. Mount two clamps longitudinal; remember to protect the spar cap surface against any clamp pressure damage. The clamp next to the upper part square mark must be arranged below the imaginary continuation of the scarf line.

3. Plane the steps down to the scarf square marks. In the start you can use an electrical planing machine, then go to a sharp wood plane, preferable of a long kind. (I do not know your specific tool word for a



just barely touches the square mark. Mark the block position and release the second spar cap part only. Do not remove the stop block.

5. Sand the scarf joint surface. Blow away the wood dust and put glue on both areas. Use the stop block to position the second spar at re-mount. Arrange two clamps longitudinal to secure the second part from sliding sideways. Mount top non-adhesive paper, plywood block and clamps using easy and uniform joint pressure.

And now to the power plant: I know, that many builders will go for the recommended Lycoming IO-360 A1A. However, I can not get away from the idea of using an auto-conversion like a flat 4 or 6 cyl. Subaru. Does anyone out there share the same thoughts or have experience in the matter, please come forward with your comments.

It would also be appreciated to hear good and weighty arguments against the auto-idea.

I am fully aware that the GP4 is nearly designed around the engine, and that the nose gear retract system, weight and balance and so forth will be influenced by any change. But Jack Yoder managed to do even wilder things using a much bigger and heavier power plant. So why not? However, the idea would not make the engine buy cheaper than the price of a used Lycoming, and the building time will probably be extended with one year. On the plus side are less vibration and noise, improved economy and cheaper spare parts.

A newcomer in the engine beat is the very interesting engine from Continental: A flat 4, water cooled 2-stroke diesel. It is reported to be flying in 1999, and be cheaper than

a similar air cooled oldtimer. Find a pencil or turn on your PC and let's have some technical discussions.

Regards,

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Hello Spud and fellow GP-4 builders,

Many thanks for the photos of my GP-4 that you took at Oshkosh! Sorry I didn't get to see you in person.

I have 63 hours on the GP-4 now and seem to be getting most of the bugs out. I flew it to Oshkosh on Tuesday, the day before the convention, and back home on Sunday. It was wonderful weather all week and I had a fine time.

I did get the inboard gear door problem solved by making new doors that are closed by air cylinders. At Oshkosh other builders let me in on the news that the change to air cylinders had been in the newer plan sets for the past two years! Making the new doors and putting the cylinders in probably took less than a tenth of the time I had spent fooling with the original cable design! I used Speedaire model 6W126 air cylinders from Granger in Des-Moines. They have branches in all states; 800-323-0620. They sell only wholesale, but an electrical contractor in our EAA chapter ordered them for me; two day delivery and about \$21 each. The ones I used do not have internal springs; I used the original springs and arms for opening the doors since they were already in and working OK. I tried to work with Wicks to get the cylinders but they finally said they would not stock them.

I still get vibration at higher power settings. I had the dynamic balance of the prop checked before I went to Oshkosh, and just recently took it off to have the blades checked for distortion, imbalance, unequal motion and whatever else the prop shop does, but all checked OK. Also had checked the fuel flow of the injectors and the magnetos and harnesses.

Next I think I will try some Lord pads that are used in some Mooneys that have a larger pad aft on top and on the front of the mount below. I used aerobatic pads that the plans called for that may be too hard or too soft. My spinner sags about an 1/8 or 3/16" at rest but lines up well with the cowling when running. A recent article in *Light Plane Maintenance* gave a lot of things to look for that can cause vibration. The article also said that it was normal and usual for the big paddles on the Baron two blade props to have a rumbling vibration at higher power settings--those blades look a lot like mine.

For the near future, (probably till it gets warm in the Spring), I'll be content to fly at 20-22" MP and 2400 RPM which is fairly smooth and gives 170-180 kts on 9-10 GPH. Good enough for an old guy like me who isn't really going anywhere. I am still waiting to get some altitude then slowing down to 80 MPH to get the gear up. It is easy enough for me then, but just too hard to operate the handle right after takeoff with that big fan blowing at full power.

I'll be sending copies of my Operation Manual and checklists for my GP-4 which Spud has scheduled for issues GP4BFN issues 17 and 18. I think that the other builders in the group would find it as a good starting point in making your own manuals. The part I'll include about doing stalls was written early on before I had actually done the stalls. It sounds a little over cautious now because my stalls were gentle and straight ahead as it turned out, but I think one should plan on extra caution for the first stalls in any airplane, including this one.

so long,

Bill Berrick
Omaha, Nebraska

MULTICOM !

Hi Spud,

Just received my latest copy of the GP-4 newsletter, and once again you have published a very nice issue. I was one of those at Oshkosh and watched Bill take off in his beautiful GP-4 and saw him seem to struggle with the gear, so the article about the assist seems particularly appropriate.

Regarding the use of an electronic bulletin board, why don't you mention the one on AOL, in the message boards for Aviation Forum? Just use Keyword: Aviation Forum and go to the message boards; it's under the home-builts and experimentals category, which I'm sure you know, because I've seen your messages there. It's extremely under-used right now. One area that could be addressed is that at the builders meeting in Oshkosh, comments were made that there are some typo's or errors in dimensions in the plans in a few places. If people could make the corrections, it could save them a problem or two.

OR, maybe someone could do a web site. AOL will let any subscriber set one up for free.

Thanks again for all of your work with the newsletter.

Steve Weinstock
Elmhurst, Ill.

Hi "Spud",

I have recently bought plans and joined the fraternity of GP-4 Builders. The past issues of GP4BFN that I've been able to get are really interesting !

As a first time "experimental" builder, I have all sorts of questions regarding sources of some of the costlier non-kit items such as instruments, avionics, strobe lights, wheels, brakes, glass cloth, finishing resin, paints, etc. As is

GEORGE'S CORNER

the case with most builders, I am trying to keep the overall project costs down -- good, servicable, used equipment is okay as long as it is a good VALUE (durable, not just "cheap"). I would also be interested to hear from anyone who may be unable to finish their GP-4 project, and perhaps would like to sell components (canopy, or possibly major fiberglass or metal components that they've purchased or fabricated) at a reasonable price, rather than just letting them gather dust (or rust!) out in their garage.

I have a couple of friends that are building RV-6As... they have a network where they "pass along" fuse-lage and wing jigs, and other items, once they are no longer required by the current builder. Has anybody thought of applying a similar idea to the GP-4? It seems a shame to me that each builder must make up bunches of support frames, lamination clamps, three(!) fuel tank molds, etc., to be used only one or two times and then tossed!! Speaking of fuel tanks, this seems like an area where an enterprising person with good fiberglass (or aluminum?) fabrication skills could find a market... I would sure be interested in buying a set of tanks, and applying my limited time towards airframe construction. (*I'm scheduled to pick up Bill Berrick's fuel tank molds (very soon). When I get them home I'll take you up on your request. I've got a fair bit of composite experience. - Spud*)

Well that about does it for now. If there is any way you might squeeze any of these questions or suggestions into future issues of the GP4BFN, I appreciate it! Keep up the good work with the newsletter -- it shows!

Sincerely,

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Fellow GP-4 Builders,

It was nice to see two GP-4's represented at Oshkosh this year with Bill and Jackie doing the honors. Some nice mail resulted from their efforts.

I was surprised to read that Bill Berrick's GP-4 was burning 11 gallons per hour at 22" and 2400 rpm. Both Jake and I consistently burn 10.5 gph at 25 square. Darry Capps tells me he is even lower than 10 gph at 25 square with his electronic ignition and one mag. Jake and I both have Vision Micro engine instruments and our fuel flow is very accurate. Vision uses the Shadin transducer that is plumbed between the engine pump and the servo. I do know that you have to lean the Bendix injection a lot to get your fuel flow down. I now lean to fuel flow rather than EGT since the Shadin is so accurate. I am sure Bill will get his fuel burn down as he gets more time in his GP-4.

● One more time!

Pat Salamone writes the following: "The first flight of my GP-4 was very exciting - my heart was pounding as he left the runway. I still have the usual "Bugs" to work out as we continue the test flying. My test pilot said that it flew like it was on rails. I'll keep you posted on the progress. Best Regards, Pat

Pat Salamone
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Pat has built a stunning GP-4 and very prudently let an experienced test pilot make the first flight. Pat called and had told me that he was letting some one else fly his GP-4 since hadn't stayed all that current. He is getting some Glasair time

from another friend and will now have a well qualified test pilot to check him out in his own GP-4. I admire his decision. I hope you do to!

● Buzzard flight to Hollister

**Distance: 100 nautical
Buzzards: Vari-EZ, Midget
Mustang, Tailwind and two
GP-4's.**

I often tag along with some slower buzzards but today Jake and I flew a loose formation to Hollister. Its been over 100 degrees here in the Sacramento Valley, but today the delta breeze came in and we were in the low nineties. The wind was pretty much on our nose as we lifted off Rio Linda. Jake has a two axis auto pilot that was direct to Hollister. I still like to navigate wit a sectional chart even though my Loran was tuned to out destination. Old habits are hard to break! We were showing about 185 knots ground speed at 5,500 feet, but as we started down into the Hollister valley we were showing 200 knots into a stiff wind and a rough ride getting rougher. We entered into pattern altitude for an uneventful landing. After lunch I lifted off first with Jake close behind. Level at 6,500 feet on course direct to Rio Linda. My Loran was giving me a ground speed of 235 knots. I gave Jake a call "What's your ground speed Jake?", "240 knots George", "Jake what's your power setting?" "22 inches and 2450 rpm". I was pulling 23" and 2500 rpm. Our fuel burn was close, 10.3 to 10.5 gph. With a little help from Mother Nature we were banging along at 276 MPH! Jake slid into the 45 for Rio Linda runway 17 with me at his six.

The rest of the buzzards sauntered into my hangar shouting "MILLER TIME". I remember a beer commercial where some guy says. "It just doesn't get any better than this"....**HOW TRUE!**

Regards to all, *George Pereira*

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

For Sale: Pre-fabricated composite components for GP-4. Cowling - \$750.00, exhaust blisters - \$110.00, inlet ramps - \$110.00, tailcone - \$105.00. Complete four pieces package for \$1000.00 and \$75.00 for packaging/handling charges. Shipment will be sent "Freight Collect" - Jake Jackson - 1052 Hayer Court, Rio Linda, CA 95673 (916) 992-0608 E-mail J7200@aol.com

For Sale: Quality custom fabricated metal components for your GP-4. See GP4BFN issue #4 for complete component listings and pricing. Please allow generous time allowances for your orders. Darry Capps, 813 Hoyer Road, Newman, California (209) 862-2707

For Sale: We have all of the GP-4 back issues (1996 and back) available for \$3.00 each. Mail your checks to Bill Spornitz - 1112 East Layton Drive - Olathe, KS 6061-2936



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Its George Washington Crossing The Delaware River To Do Battle!



No..... Its George Pereira in the pilots seat, in line at Oshkosh a few years back, getting ready to go out and do some serious aviating I'm sure! - Photo submitted by Carl-Erik Olsen of Denmark



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NEWS FOR CRAFTSMEN OF FAST WOODEN AIRCRAFT!