BUILDERS & FLYERS
GP4
NEWSLETTER

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

VOLUME 28 Fifth issue of 1999

Dr. Phillip D. Foshee makes the first flight in his beautiful GP-4!

First Flight update!

Hello Fellow GP-4 builders,

This is my GP-4 with 8 hours time on it. I continue to work on the landing gear. I have experienced no great problems so far at all.

The project is the results of four years of construction.

If I can be of assistance to any of our other builders please don't hesitate to call or write. I'll be glad to help out any where I can.

I will report back to Spud for the newsletter as things progress.

Also for those in need, I do flight physicals!

Regards to All,

Dr. Phillip D Foshee
310 Pinedale Road
Clanton, Alabama 35045
(205) 755-3980

Multicom!

Internet Cruiser's

Hey you Internet cruiser's.... next time you're on the net check out Patrice Theriault (Plans holder #104) of Canada cool web site at:
http://www.total.net/~alined/index2.html
It is an excellent site with a bunch of progressive construction photos of his GP-4.I'll try to download some of the photos for a future issue of GP4BFN.

While we are on the subject of the Internet...Is their any other GP4 people out that have a web site like Patrice Therialt does. Well let's hav'em so we can list them in the newsletter for everybody. Also lets get a current update from everybody that has an active E-mail address. This is simple, just E-mail me at my address bspornitz@aol.com with your name, city and state. I'll then post them in the newsletter.

The Troops checking in...

Just wishing everyone a Happy Holiday in advance. Hope that all is going Well for our fellow builders. Still working on the GP-4, slowwwlllyyyy, but steady. Estimated date of completion is December 2003. The 100th anniversary of the Wright brothers flight. That's it for now.
Kindest regards,
Arnold Greene, Lake Worth, Florida

Hello Gp-4 builders and Spudley,

Thanks for the back issues of the newsletter, I read through them all over the weekend and found lots of helpful information to refer back to. I know I will refer to them on a regular basis as I build my GP-4

I want to order as much as I can from Wick's, as we don't have any local suppliers for many things. I have now been convinced to use the hydraulic gear, unfortunately I will need a parts list for this, to try and get it shipped with the rest of the kit if possible. -Any suggestions? *I would purchased the hydraulic gear update plans from George as soon as possible, sit down at the kitchen table for a hour or so with your main GP-4 plans and the Hydraulic plans. George has done an excellent job. You'll easliy be able to see what comes out and what extras go in. I double check my hydraulic plan and George has all of the items depicted with part numbers etc. - Spud*

I have a feeling the engines are going to get harder to find, so if you have any suggestions on a source of used or rebuilt IO 360 A's. Keep us posted, which would be really appreciated.
It's going to be a problem everywhere- Spud

West system resins have a good reputation in our cooler climate and I am tempted to use these, I have not seen T-88 here and wondered if I should get some with the kit?
George now highly recomends the use of T-88 through out construction. I think if you go back and re-read his "George's Corner" article he speak to that. I double checked in the Wick's catalog. They have T-88 from 1/2 pints to gallons - Spud

Any news on a parts supplier to replace DARRY! *Not Yet*
Do you know how many are flying to date?
I show eight flying on my roster, but there may be more that we don't know about, at least me - Spud

HUGH TAPPER, NewZealand

Welding tips...

I would like to know how big of a misfit or burn hole it is ok to weld over. When you are welding close to an edge, if you let the puddle get to small, then you will get some erosion of the edge and if you are not quick you can have a quarter inch hole in your joint. With a TIG welder it is very easy to add metal back to this hole, close it and blend it into the fillet. Richard Finch, the "Performance Welding' book guy says that improper fit ups are at risk for cracking. Why is this when the metal you are putting in, the rod, is lower carbon, mild steel?

Archie Dunbar, Crystal Lake, Ill.

The answer...
Your filler rod is supposed to be mild steel (RG-45, E70S-2, E70S-6 and similar fillers). There is no problem filling a "burn through" or "melt out". Actually, the additional heat input at that spot lessens the likely-hood of cracking. If you melt out an area that is larger than about 1/4" it becomes difficult to close it just because of the thin edges with which you have to work. At that point I will sometimes cut a little disk of material to patch the hole and weld around it.

If you weld 4130 with 4130 rod as the filler you have a very high chance of a cracked weld. It takes much more care for an inexperienced welder to weld defect free with 4130-alloy rod. On top of that, if the part is not a piece that will be heat-treated then you are wasting money and effort. A weld, using mild steel filler rod, on 4130 tube will exceed the strength of the base metal (the tube). Weld a little setup of a fish mouthed "T" joint, a good fillet all away around. Let it cool, clamp it in the vise and take your 3-lb. ball-peen hammer and try to beat it apart. If you get it apart there will be several places where the base metal tore.

Take Finch with a grain of salt. I like his books. He says many things that go against the accepted standard, but from my experience, I find to be true. But, there are mistakes and in some areas he is wrong. (Don't ask me where, it's been a year and a half since I read " Performance Welding". - Bruce A. Frank

Mr. Frank is the owner of:
AIRCRAFT PROJECTS COMPANY
Manufacturing parts & pieces for homebuilt aircraft,TIG welding

He is also the editor of :
"Ford 3.8/4.2L Engine and V-6 STOL Homebuilt Aircraft Newsletter"

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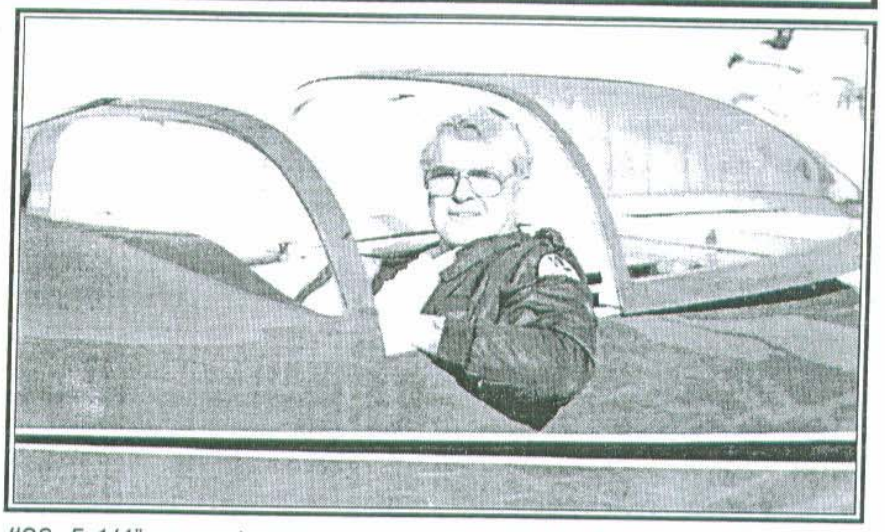
GEORGE'S CORNER

Fellow GP-4 builders;

In the last newsletter, volume 27, I described building the GP-4 wing assembly on Mike Traud's GP-4. We got the main spar planed and faired very close to final sizing. The front spar was leveled horizontally and vertically, then blocked firmly to the work table. The spar was drilled and the landing gear mount plates were installed. Next were the tip and butt ribs. We used two bubble levels. A 9" and a 28" to level the spar and the chord lines on the ribs. Mike had the rear spars completed as shown on drawing #25. Note that the spar is 1" longer at the tip for trimming and fitting. Chord lines were drawn on the forward side of the rear spar after fitting it to the tip and butt ribs.

The center wedge shaped block that joins the two rear spars together, (drawing #25) was cut on the band saw and finished on the belt sander. With the rear spars glued in place and joined in the center, we decided to install the four seat rails. (See drawing #30) In the hydraulic gear installation, the two center seat rails eliminate the spar plate and pillow blocks assembly shown on drawing #29. The rails run full length from the rear spar to the front spar, just like the two outboard rails. They attach to the center of the main spar with an L shaped bracket 5 7/8" long (full width of rails in place) bolted to the spar. The through spar bolts are the same width apart as shown on drawing



#28, 5 1/4" on center.

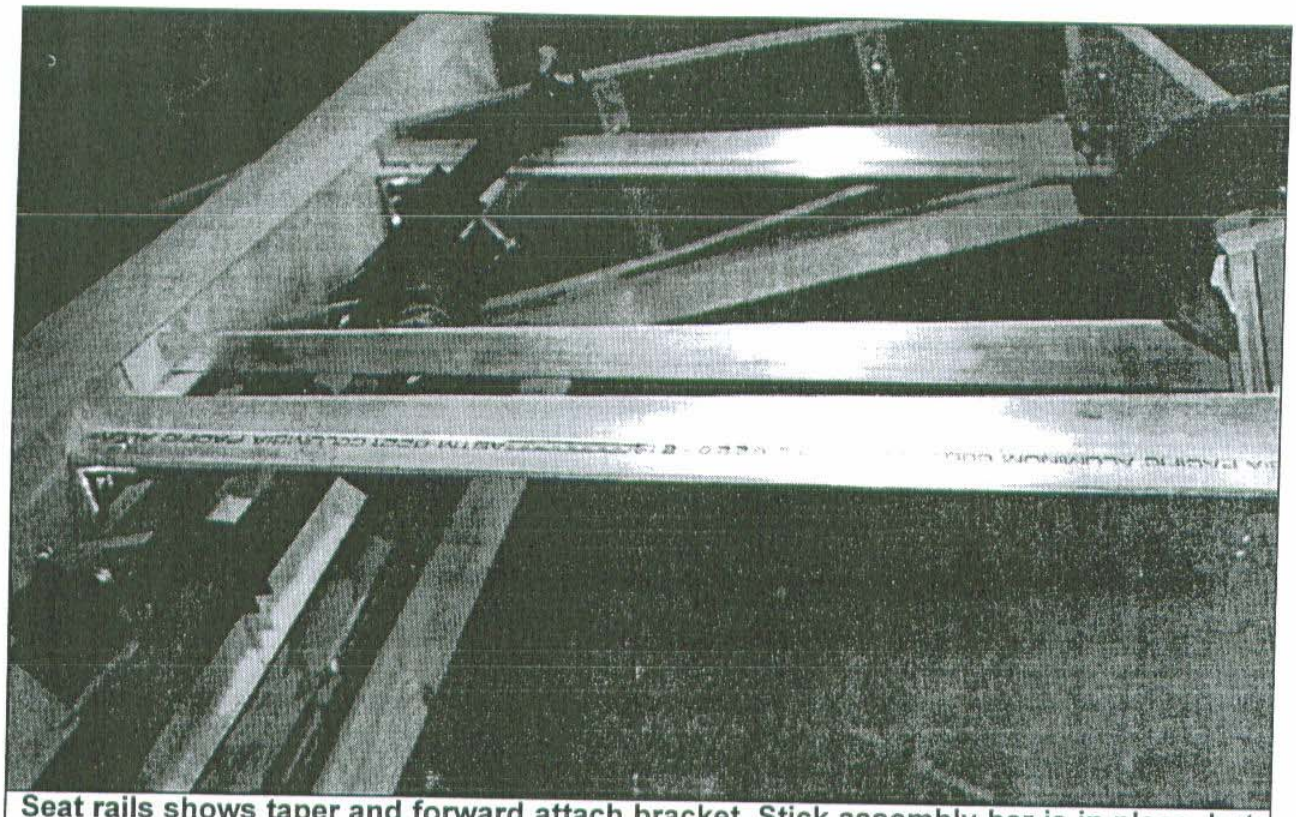
The seat rails, shown on drawing #30, are tapered from 7/8" high at the front to 1 1/2" at the rear attach point. I found a simple way to cut these rails on my table saw. I used a carbide tip blade, raised about 3/8" high. I then cut a guide board, same lengths the rails, and tapered it on one end to 1 7/8", the other end to 2 1/2" wide. You then set the rip fence wide enough to taper the aluminum rail by pushing the rail andthe guide board through the saw at the same time. Push it slowly and be sure to wear safety glasses. The aluminum chips really fly! You can finish off the cut side of your rails with a belt sander along the edge. You can now level the ends to fit between the two spars. I suggest you make a ply template of each rail to get the correct length and angle before cutting your four tapered rails to length.

It's very important to keep the four rails parallel from the front spar to the rear spar. I clamped two 1" X 4" boards to the four rails, spacing them as shown on drawing #30 before drilling the spars for the attach brackets. With your wing level on your table, you can level, span wise, the two 1 X 4 boards clamped to the four rails. After all, you want your two seats level with the wing, otherwise, you may end up flying in circles!

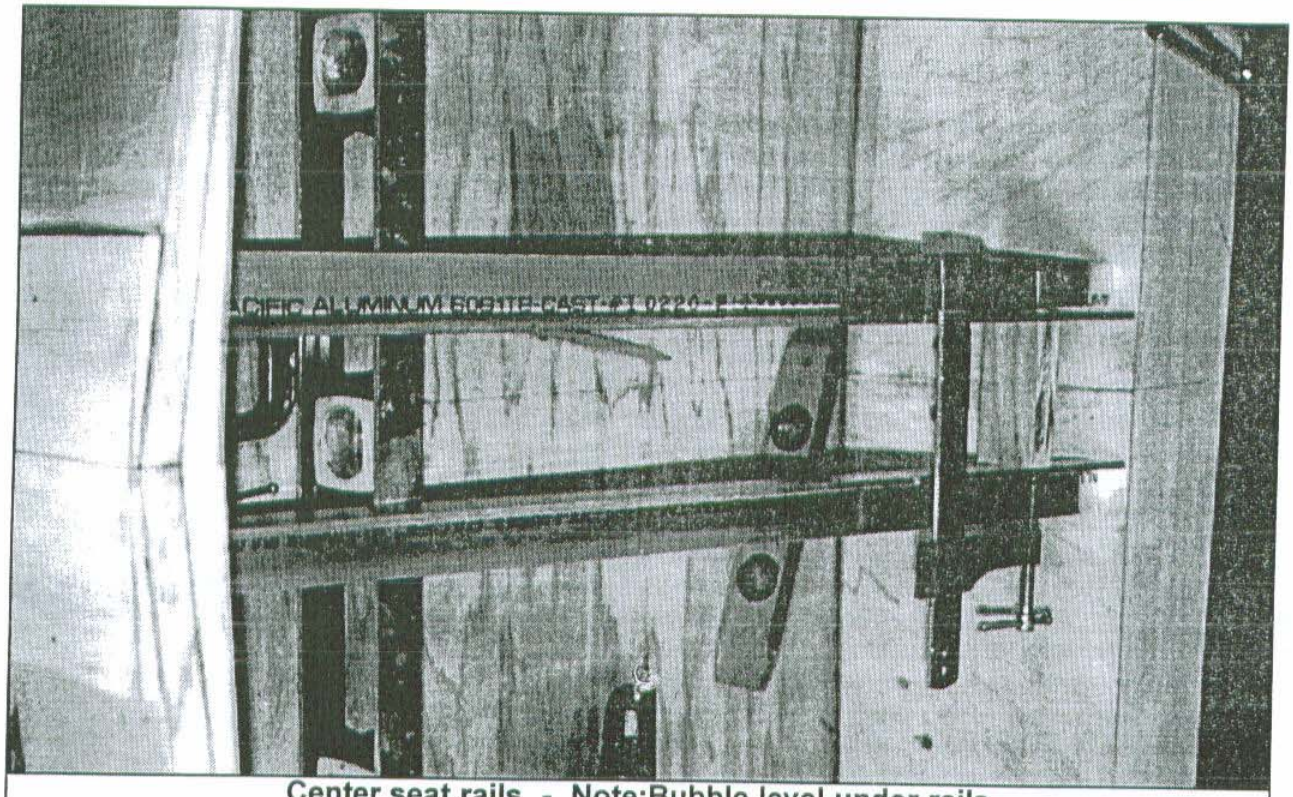
Regards to all,

George

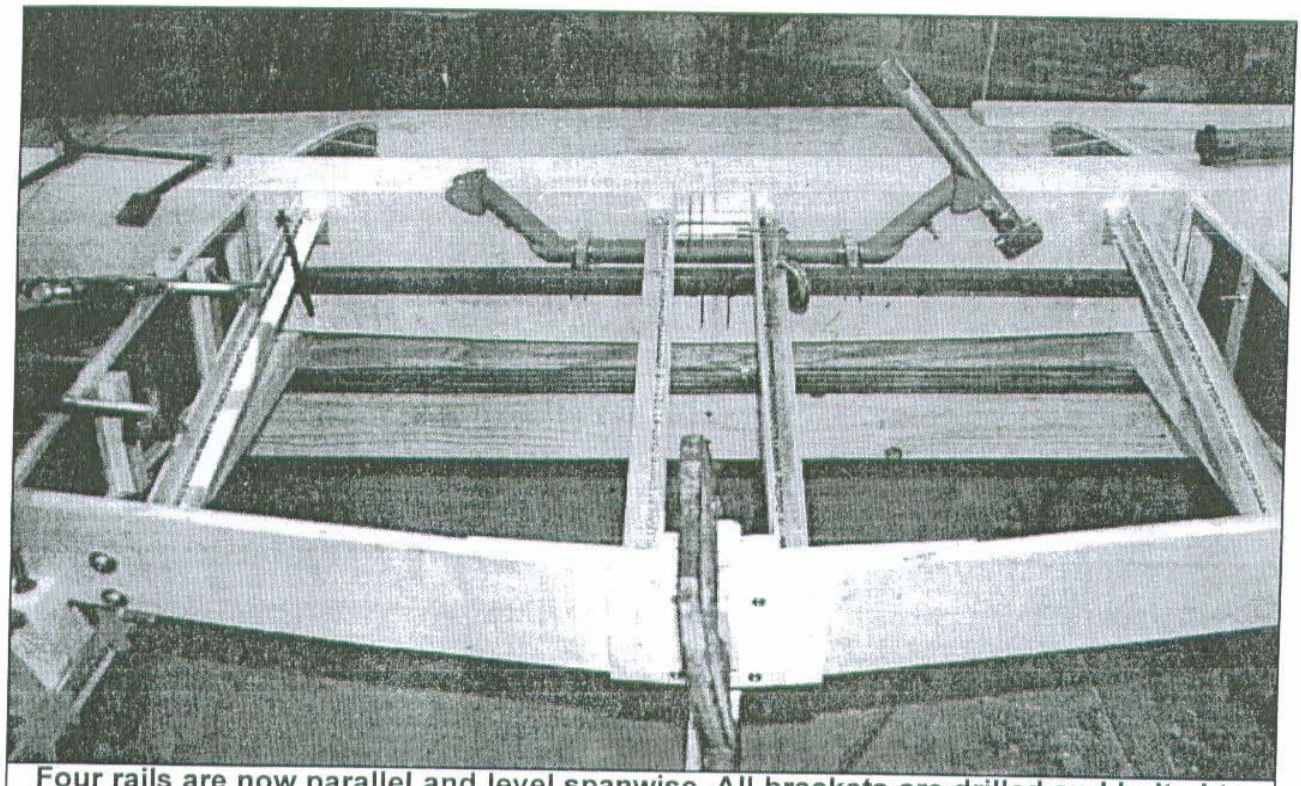
Photo's and sketch on the following three pages.



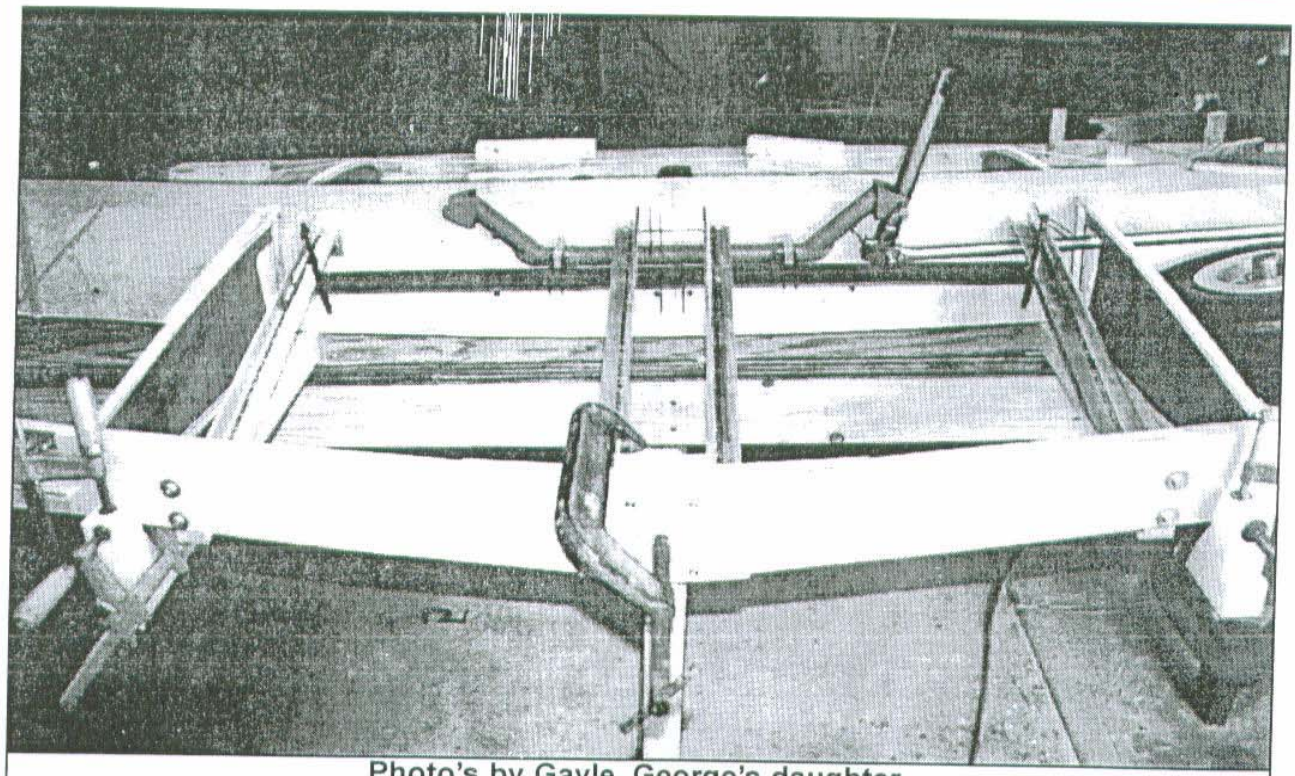
Seat rails shows taper and forward attach bracket. Stick assembly bar is in place, but not drilled for bolts yet.



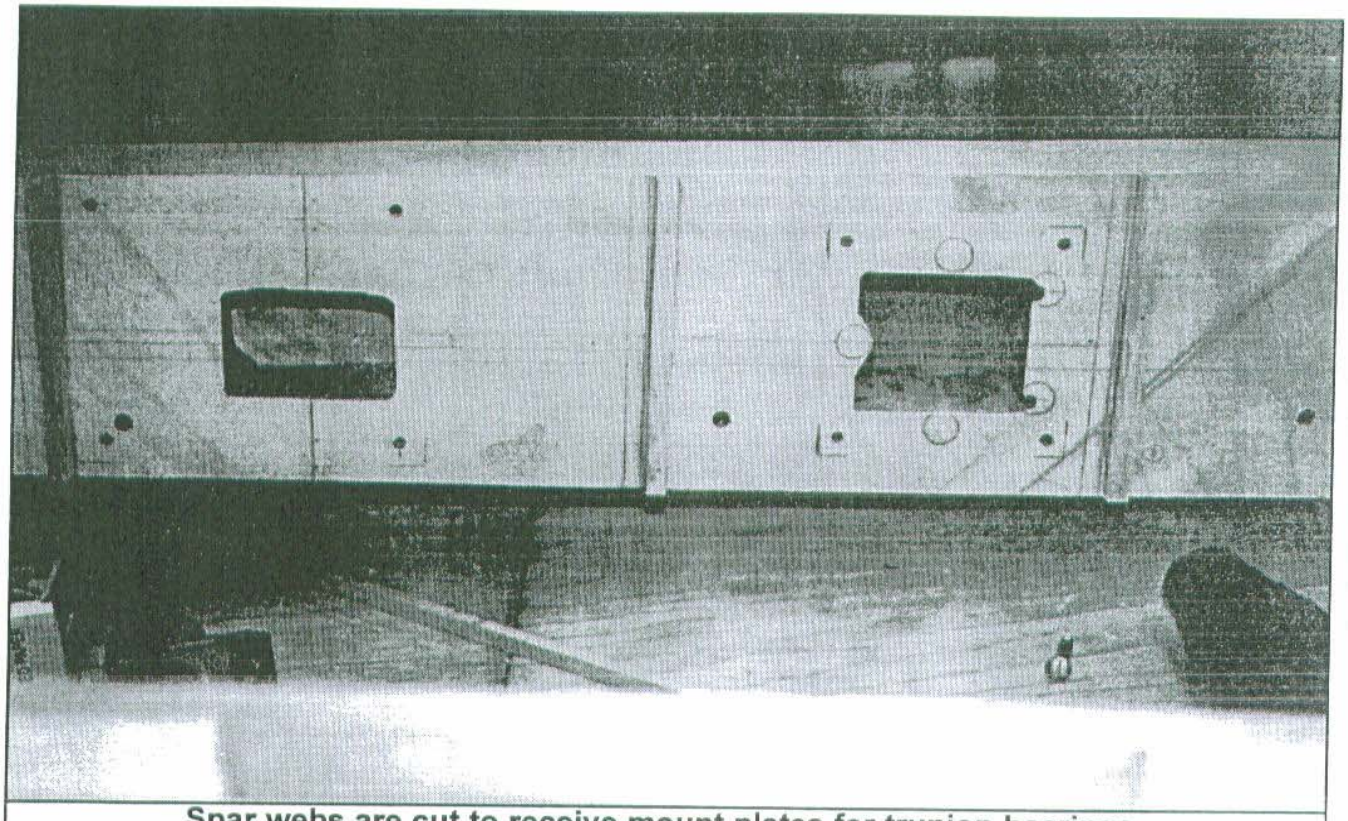
Center seat rails - Note:Bubble level under rails



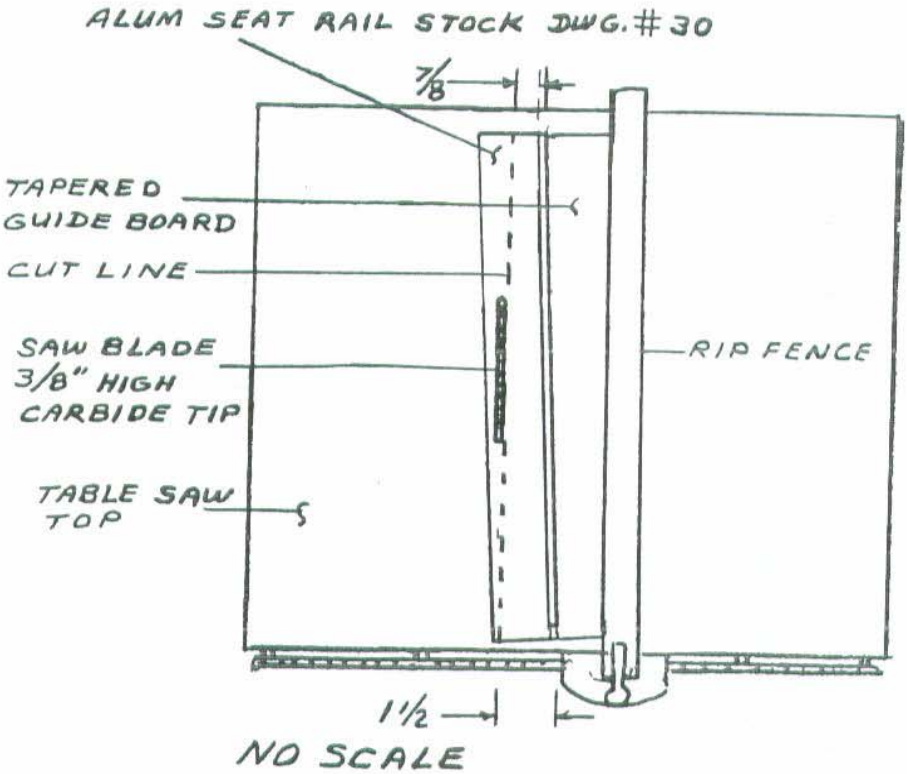
Four rails are now parallel and level spanwise. All brackets are drilled and bolted to the spars.



Photo's by Gayle, George's daughter.



Spar webs are cut to receive mount plates for trunion bearings.



The Classifieds

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: 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 (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 jakejackson@jps.net

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

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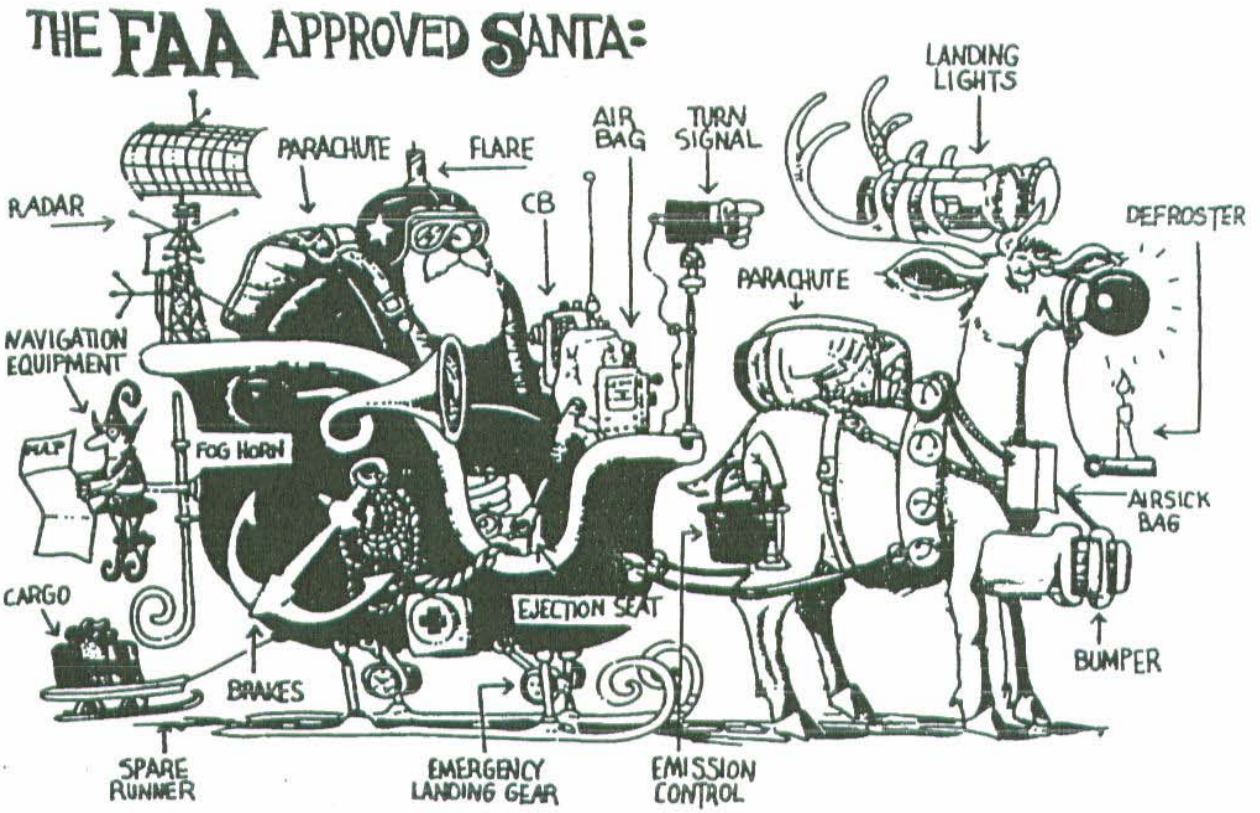

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