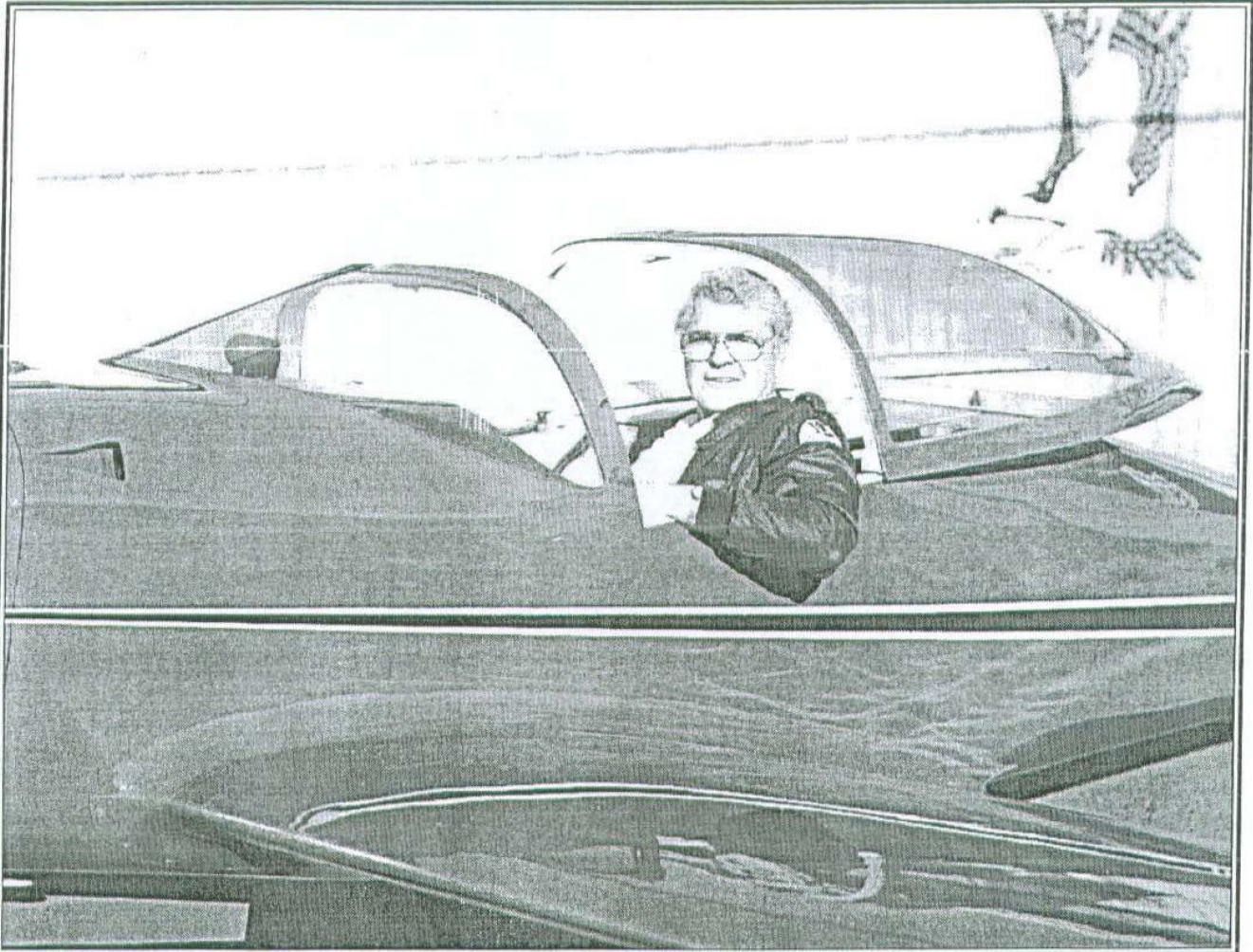




THE OFFICIAL VOICE OF GP-4 BUILDERS ALL OVER THE WORLD

VOLUME 27

Fourth issue of 1999



Mr. George Pereira in his office getting ready to do a little business!

MULTICOM!

A missing troop checking in...

Hi Spud

Thanks for sending this year's back issues, sorry I was late getting renewed. I hadn't touched the GP-4 since July of 1998, now I just keep thinking about how far I would have been if I hadn't stopped working. I started back working on the project this last week. I was able to cut out the canopy base (outside cut only) and glue all my top formers on that have cut for a year and 3 months. I still only have a little over 3 months work invested and I am just about ready to turn it over and put the bottom formers on. As soon as I can get a band saw, I am going to start on the spar. I would like to get the spar together before the cold weather arrives (no heat in that building). In case anyone wants or needs Spruce I found a good source (direct from the mill), they sent me enough extra to make sure that I got the width I needed that I could build another fuselage, and it only cost \$1500. This is for all the spruce that you need for the entire project. It had to be planed (it comes in 13/16 thickness), but a friend in local cabinet shop planed it to 1/2 inch and 3/4 inch and even cut my spar material to width in 8 hours time (\$200). If anyone wants to the name of the mill just email me at bretv@todays-tech.com. If any one is worried about the source, I believe that they just might be supplying the other 2 major suppliers. Sorry no bargains found on plywood. I'm also using one of the glue guns you see in Wicks and Aircraft Spruce, and I love it.

Sorry to hear about Bill Berrick. I talked to Bill just after I talked to George on the phone before I bought my plans. Spud, I hope you made it up to Bill's, I never did, and was only 30 minutes away last fall when I was buying my Bellanca. I was also sorry to read that Darrylapps is no longer building parts, I

guess I waited to late on that one to.

Sincerely

Bret Viets - Buffalo, MO
(417)345-2233

Builders tips...

Hello fellow GP-4 builders,

When I built my tables I found that 3/4" plywood is too rough to work on, also it is not a flat surface. I used 3/4" Medium Density Fiberboard (MDF) to build my tables. This material comes in 49" x 97" sheets. It is very flat and smooth, much nicer to work on. It does not hold screws as well as plywood, but more than good enough for our purposes.

I built a base for the top out of 8" wide pieces of MDF. If you rip carefully this material will be dead straight and will stay that way. I built the base 2 3/4" smaller than the top so I would have an edge to clamp to all the way around (Also can join 2 or 3 tables together with cleats on the bottom.). Drill and countersink the holes for the screws then carefully tighten the 2" drywall screws with a cordless screw gun.

Don't forget to layout & drill the top for installation on the base also. Use plenty of adhesive on all of the joints, Titebond or white glue is fine, epoxy would well also.

My tables ended up being 34" tall. This may be tall as I ended up standing on the table to do some of the fuselage work. I did put a middle

2 x4" leg on each side before walking on the tables. These tables are nice and flat and will stay that way. I did my layout right on top, and then I put "Saran wrap" on the joint areas when gluing up the fuselages, etc.

You will need 7 full sheets of MDF to build 3 tables. 1 full sheet for each top, 1 full sheet for each base and 2 legs. I final sheet for all the remaining legs and cleats to finish.

The only thing I would do differently is to build the table for the rear fuselage tapered to make it easier to stand closer to the work.

Another tip:

For sanding formers, etc. I used an extruded aluminum 6' 6" level from a hardware store and just stick sanding paper discs in the appropriate spots. Much lighter and straighter than a wood board.

Now for a question:

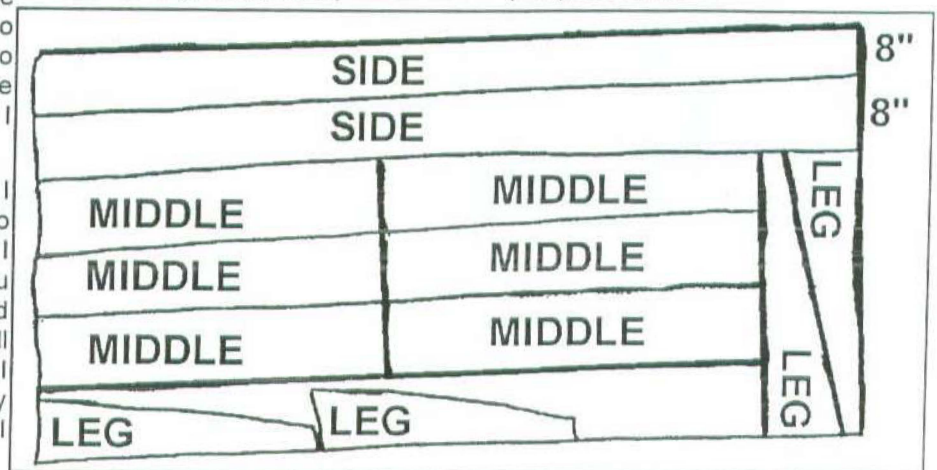
What RC# (Rockwell hardness) are builders having their gear legs heat-treated to? It sounds like the retract arms & links could benefit from this also?

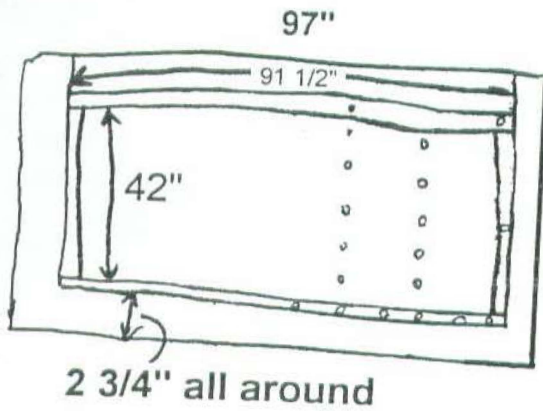
Need a loaner prop???:

If anyone dings their prop, I will ship them mine if they will pay me the cost of the new one. I will not need mine for quite a while.

Best Wishes,

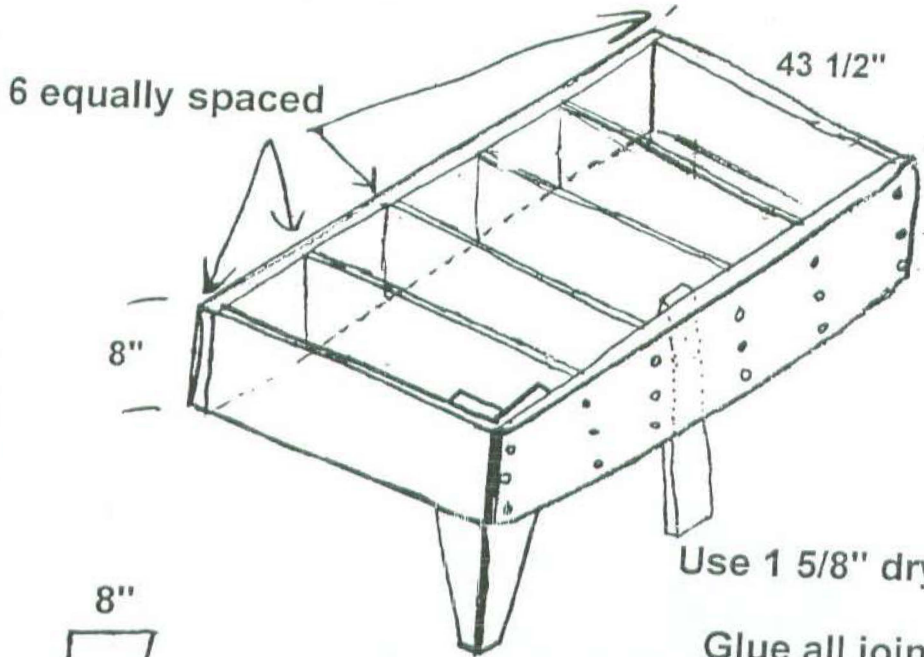
Tony Mikus
0344 Kings Row
Carbondale, Co 81623
(970) 963-9575





3/4" MDF

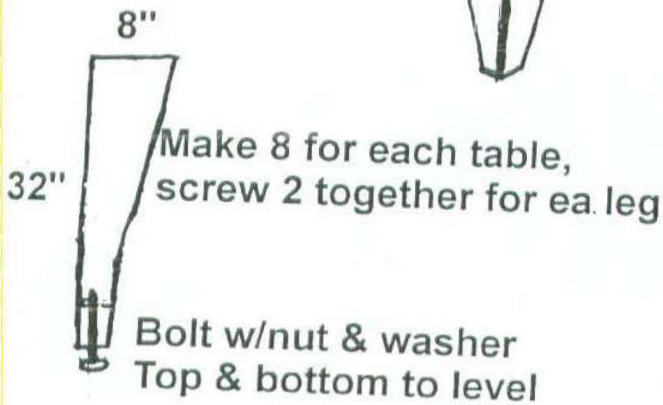
Drill holes in top
about 7" o.c. & csk



Drill & csk
holes first

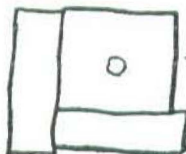
Use 1 5/8" drywall screws

Glue all joints
Titebond, Elmers etc.



- 2 pcs. 8" x 91 1/2"
- 6 pcs. 8" x 42"
- 4 pcs. 12' x 32 rip for legs

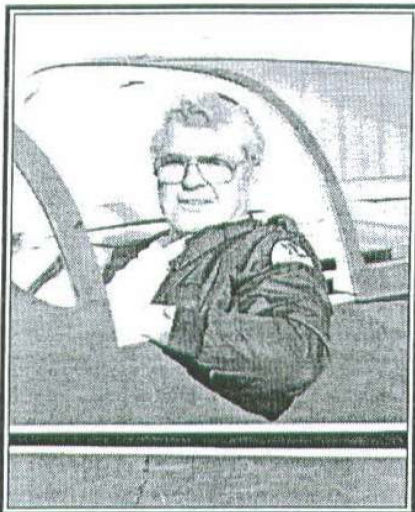
Bottom view of leg



3 1/2" x 3 1/2" x 4 block
glue & screw on at
bottom. Drill hole for 3/8"
to 1/2" bolt for leveling.



GEORGE'S CORNER



Fellow GP-4 builders;

Recently a friend of mine and fellow GP-4 builder asked me for some help in building his wing. The builder, Mike Traud, had all of the ribs and spars built. We were looking at more of an assembly and fairing project. Mike had optioned for the hydraulic gear and had all of the components ready to install. I had previously built a full-scale model of the mockup of the hydraulic gear, yet I still wanted to see how well the components fit in a plans built wing.

Mike flies a corporate jet for a local company, and a busy season has him working almost seven days a week. He is also a fine craftsman, so with the limited amount of available time from Mike and myself, the wing is going together surprisingly fast.

It was 1981 or 1982 since I built the prototype GP-4 wing, and don't laugh, but I had to read and reread the plans to be sure I wasn't making any mistakes! Fortunately, I remembered how important it is to pre-shape the main spar prior to installing the ribs and rear spar. We first drew straight accurate chord lines on both sides of the main spar, and on the front side of the two rear

spar sections. Lines were then drawn for rib locations on both spars. Mike already had chord lines on both sides of all the ribs. We could then hold a rib up to the spar, mating the rib and spar chord lines, and see how much of the spar needed to be planed away before final rib installation.

If you install the ribs before you pre-shape the spar, it is very hard to plane down to the rib height without breaking the rib away from the spar with your plane. Most of the spar wood is removed on the forward, topside of the main spar. This will become apparent when you match up the rib-spar chord lines. I used a 10-inch hand plane, keeping it very sharp in order to plane the spar down to rib height. A belt sander was used for final finish. We then glued and nailed corner blocks to the spar. We used 20 gauge aircraft nails, available from Wicks Aircraft or Aircraft Spruce. These are brass, cement coated nails that are small enough so they won't split your corner blocks. Two sizes were used, 3/4" long for corner blocks and 5/8" long for attaching the ribs. T-88 adhesive was used for all the wood attachments.

The main spar was then blocked and clamped to our 'very' level 24-foot tabletop. The spar face, or web, was 90 degrees to the tabletop. A leveling string was attached from spar tip to spar tip. The positioning blocks to hold the spar were screwed to the tabletop. The spar must not move once you start installing the ribs!

The retract link trunion bearing and the main gear trunion locations were marked on the aft side of the main spar. This is shown on drawing M-5 of the hydraulic gear plans. All measurements start from a centerline on the spar. The spar plates that hold these trunion components

were bolted to the spar. It is important to use drill blocks to keep the bolts aligned when drilling the spar. Mike had some 3" oak that we used for drill blocks. You drill a 1/4" hole through the block on your drill press. You then have a block that will guide your long, 1/4" drill through the spar cap by clamping the block to the spar. With the trunion plates now installed, we were ready to attach all of the rear ribs. The tip rib, which is a full one-piece rib, glues to the main spar tip. You match the chord line to the spar chord line and level the rib chord line.

I stapled a temporary batten to the outside of the tip rib along the chord line to lay a level on, as it was checked often during assembly. A batten was also stapled to the chord line of #1 rib, to ease leveling when attaching the rib to the spar. We then had the tip ribs and the butt ribs #1 attached and blocked to the table so they can't move. Remember the aft ribs are all 1/8" longer than required, to allow fitting them to the main spar. Be sure to use this 1/8" tolerance to fit and shorten the #1 rib when attached to the spar.

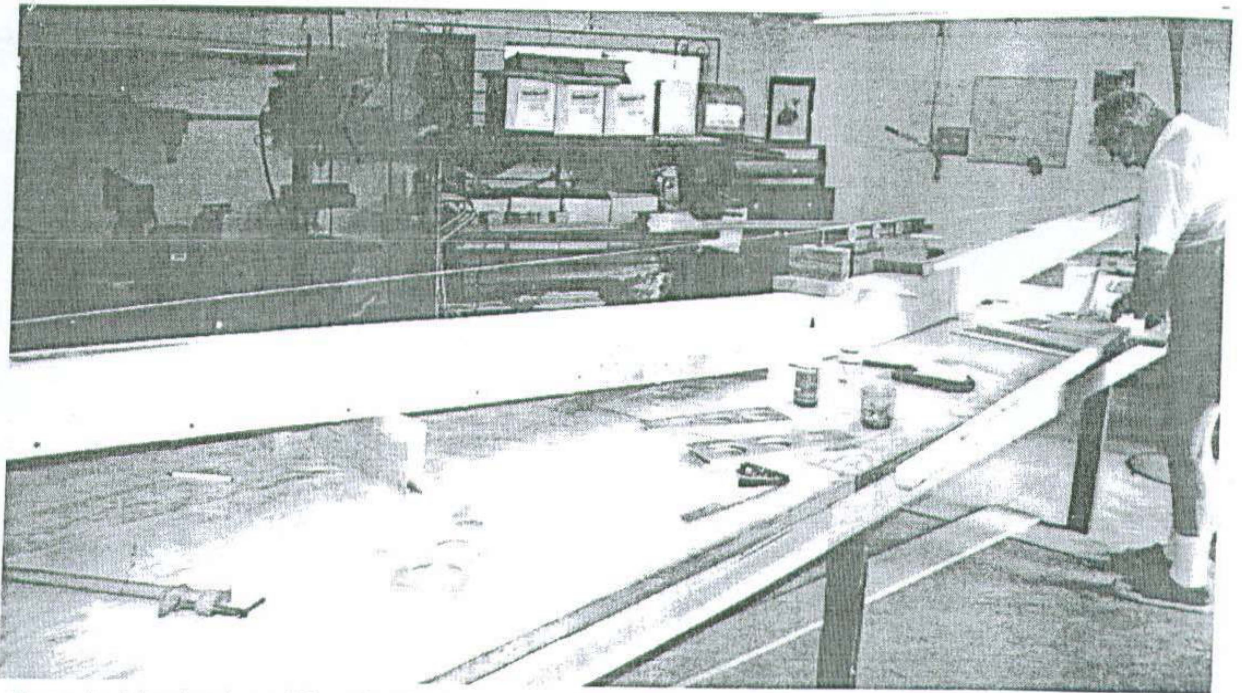
With the main spar blocked and level in two planes, the tip ribs and #1 ribs in place, and chord lines level, we were ready to attach the rear spar, ribs, seat rails, and main landing gear.

I will cover this in the next newsletter.

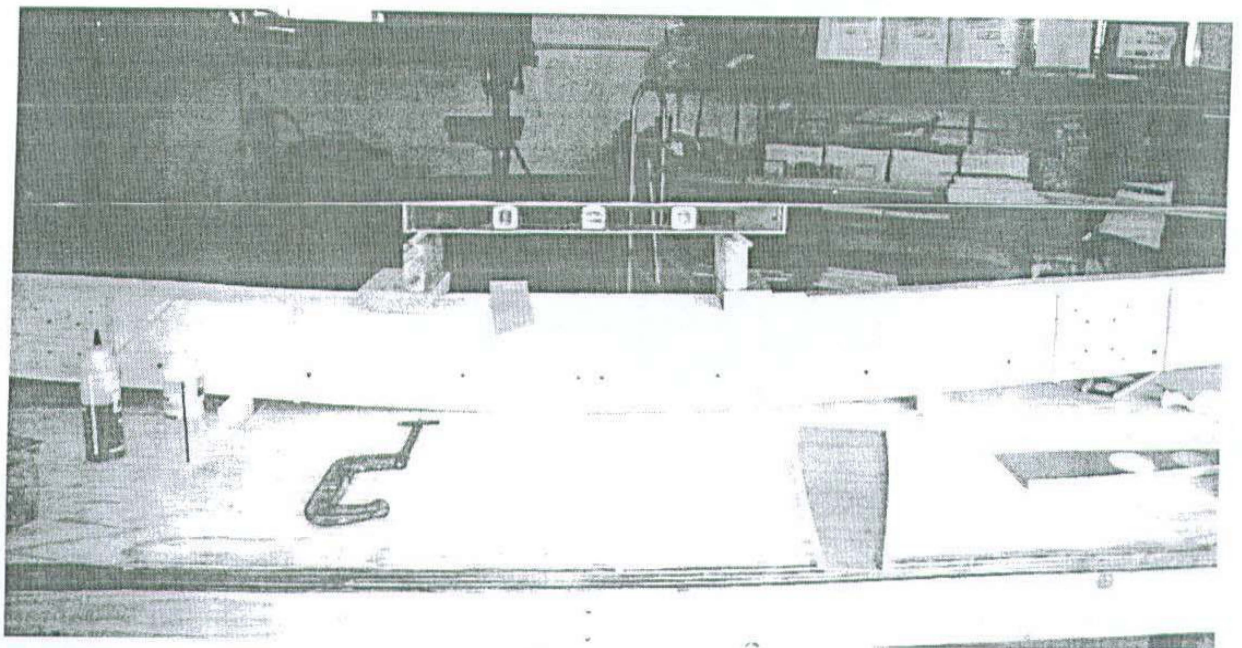
Regards to all,

George

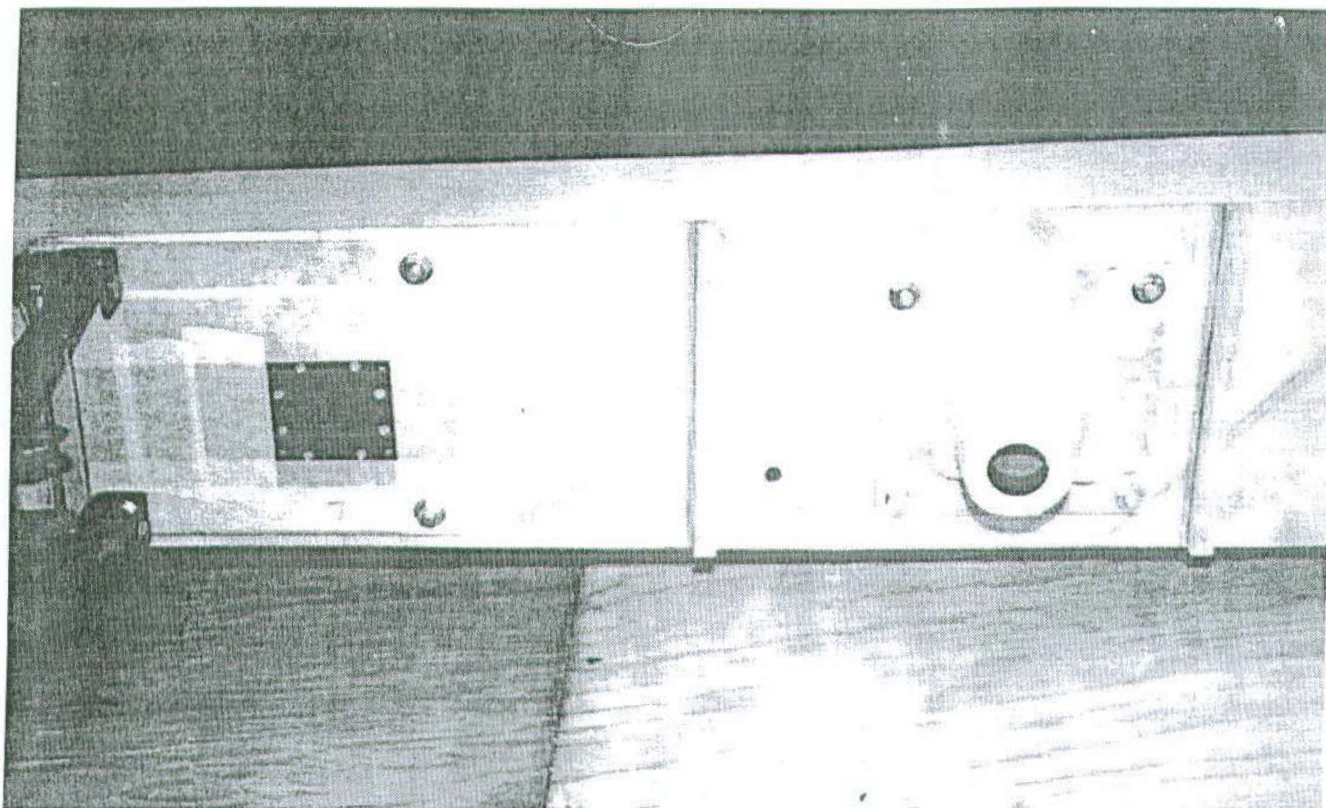




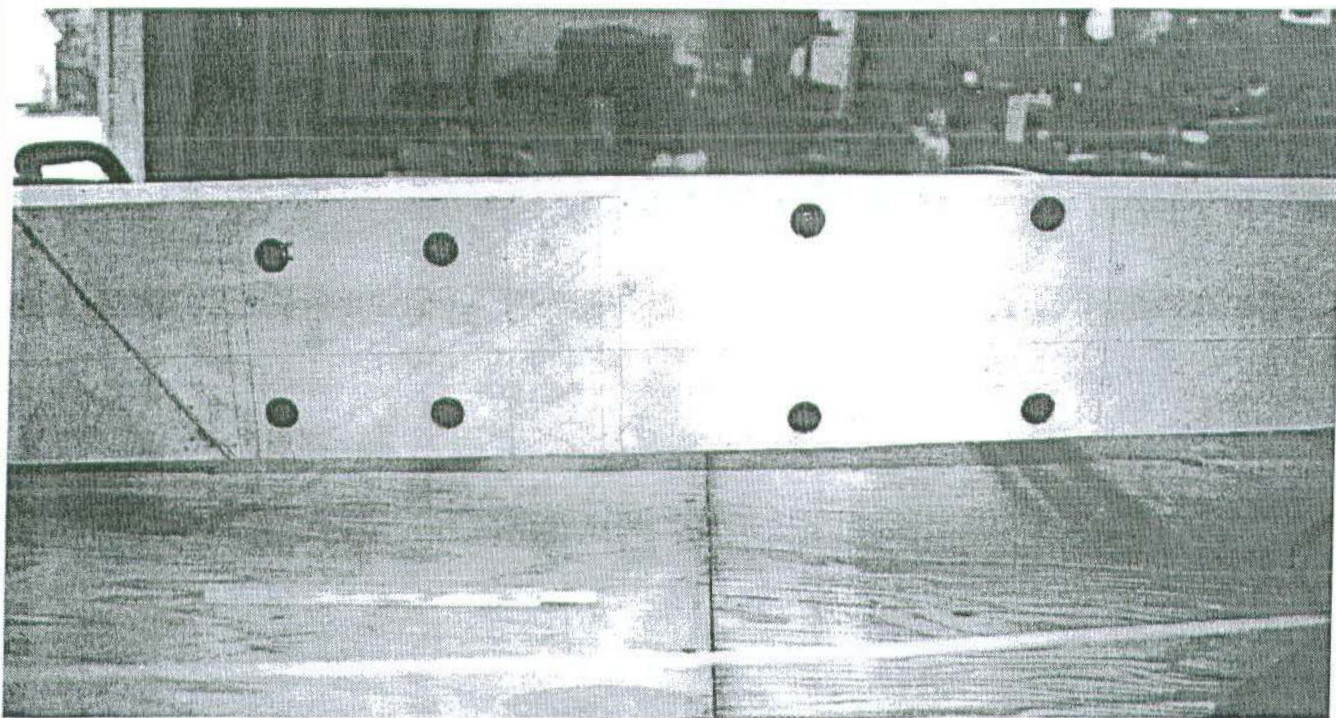
Spar is blocked and leveled on work table. Note: Corner blocks are in place for rib attachment.



Spar level with holding blocks



Trunion plates temporarily bolted in place. Masking tape is to protect anodized coating



Forward side of spar showing countersunk trunion plate bolts

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@lpxk.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 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

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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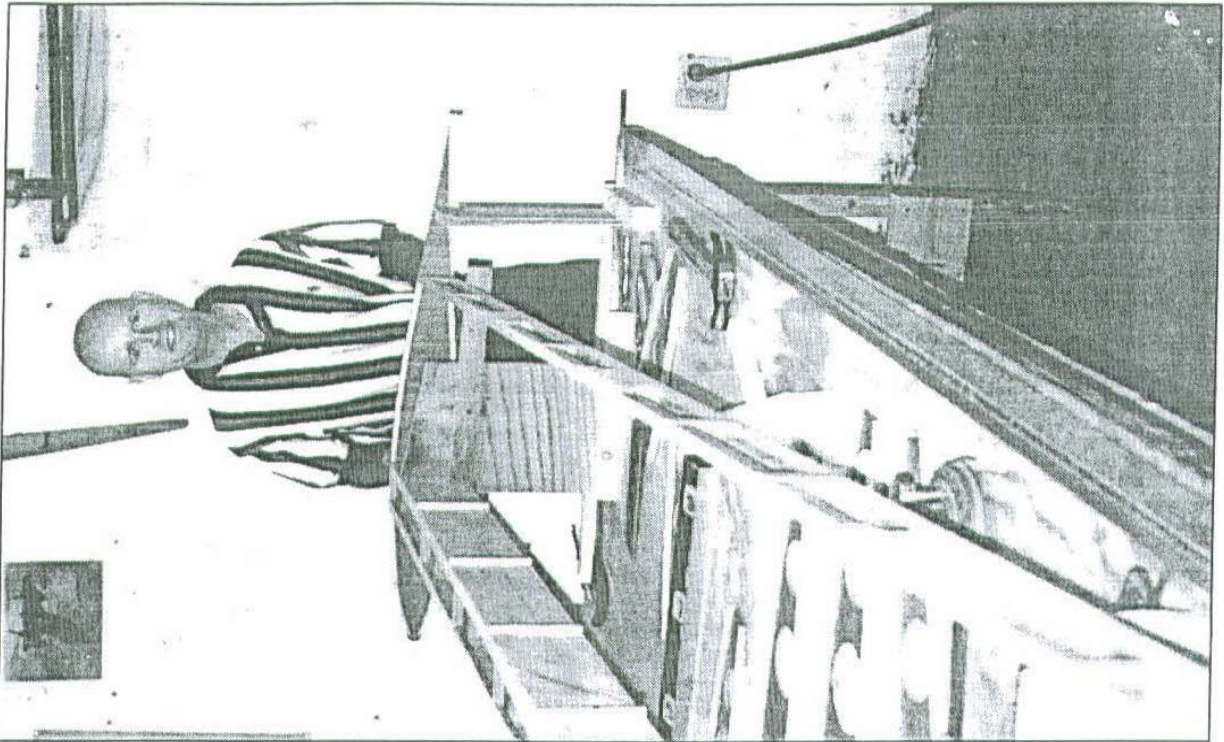
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Mike Traud - The happy builder! Note how spar and tip rib is blocked to the table top prior to rib installation - regards, George



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OLATHE, KANSAS 66061

First Class Mail

NEWS FOR CRAFTSMEN OF FAST WOODEN AIRCRAFT!