

GP-4 BUILDERS & FLYERS NEWSLETTER

January 2005
GP4BFN 45

Completed & Flying GP-4s

Plans Number	Name
0	George Pereira
1	Darry Capps
2	Jake Jackson
8	Steve Baum
31	Pat Salomonde
49	Thomas Evans
134	Ernie Holmes
193	Mike Traud
233	John Reinhart
260	Phillip Foshee
292	Paul Guglielmi
360	Lynn Sheets
366	Jim Simmons
396	John Evans
??	Bernie Griffin

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Corrections?

Updates?

Errors?

Please e-mail them to me at:
ecultice@woh.rr.com

THANKS !!



HYDRAULIC GEAR PLANS NOW AVAILABLE

As you look through your plans, you will note that the GP-4 has a manual landing gear retraction system. The manual system has worked very well, but I received feed back from builders asking if I would develop an electric hydraulic gear for the GP-4.

I spent about a year of research to design and build a working mock up that I feel has all the amenities to do the job. It has since been flight tested and it works well.



Both systems have advantages and disadvantages. The manual system requires no redundant back up to get the gear down. It is all mechanical, the F.A.A. feels it is fail safe. Its less expensive if you build your own parts. The main disadvantage is muscling the Johnson bar between the seats about 90° to get the gear up right after take off. There are also more parts to build,

all the push rods, bellcranks, and the air drive uplock system.

The advantages of the hydraulic system are obvious. Flip a switch, and fly the airplane. Less parts to build, and you get the Johnson bar out of the cockpit. Disadvantages? Possible electric hydraulic failure, approximately 5 to 6 more pounds weight, and maybe some more expense. And, the F.A.A. requires a back-up system, even in a homebuilt. This system has

an excellent emergency back-up, consisting of a mechanical cable uplock release and nose gear extension. It is both simple and foolproof.

No machine work is required for any of the components. Plans are available for \$150.00 from Osprey Aircraft. You can find the address and an order form at www.ospreyaircraft.com.

George

BUILDER'S RESOURCE BY BOB FOSTER

Many GP4 builders who have completed their fuselage have installed Jim Weir's antenna kit. Jim has many more "Can't Live Without" electronic designs that will save you beacoup bucks or as he says, "A champagne panel on a beer budget." He has published a full panels worth of designs in Kitplanes for several years, from about 1996 to the present. I have listed all the publications and subject that I have. Perhaps someone else could fill in the blanks.

Kitplanes Magazine

Issue Date / Page / Subject

- Jan 97 / pg 87 / Coaxial cable
- Mar 97 / pg 69 / Extend landing light life
- May 97 / pg 72 / ELT antenna
- July 97 / pg 79 / Wire rack
- Oct 97 / pg 62 / Radio Connectors
- Feb 98 / pg 86 / Radio "stuff"
- Apr 98 / pg 20 / Altitude chamber
- June 98 / pg 86 / Auto AM FM radio
- Oct 98 / pg 60 / Inexpensive intercom
(I missed most of 1999 and 2000)
- Dec 99 / pg 115 / VHF nav antenna
- Oct 2000 / pg 49 / LED position lights
- Nov 2000 / pg 65 / GPS
- Jan 01 / pg 88 / Dim Bulbs
- Feb 01 / pg 85 / Antennas
- April 01 / pg 61 / Lamp dimmer
- Aug 01 / pg 68 / Aviation software
- Feb 02 / pg 43 / Engine monitor
- Apr 02 / pg 79 / Battery sulfate buster

GEORGE'S CORNER

BY GEORGE PEREIRA



Fellow GP-4 builders:

Congratulations seem to be the order of each GP-4 Newsletter these days, John Reinhart and Jim Simmons first flights and now Jim's Oshkosh award as Reserve Grand Champion Plans Built.

Jim's award was not a big surprise to me since the photos he sent me and the phone talks we had during his construction of the GP-4 indicated he is truly a fine craftsman.

In June 1997 I sent an article in a former newsletter #14, a drawing for mounting the Holly aux. pump P/N 1208-1. It was mounted under the floor in front of the fuel selector valve. Due to the T shape of the pump, the motor laid on its side in order to mount in between the floor and bottom

skin. Last week the pump would not run. On examining the pump, the motor was pretty well burned. It has been in my GP-4 for about 7 years and performed well all this time. So I bought another Holly pump (\$130). The mounting instructions say to mount the motor upright or vertical. I could not see any reason for this but I decided to call Holly for an OK to mount it horizontal. Here is what they said!

"If the seal between the motor and the pump should fail, the fuel will discharge out two weep holes below the motor when mounted upright. If the motor is sideways the fuel would drain into the electrics of the motor and could start a fire" This explanation really got my attention! For those of you who have not started fuel pump installations, there are probably pumps available that

will fit under the floor. Mike Traud is researching this for his GP-4. PH- 916-812-1147. You need a bypass when plumbed in series and at least 9 pounds of fuel pressure.

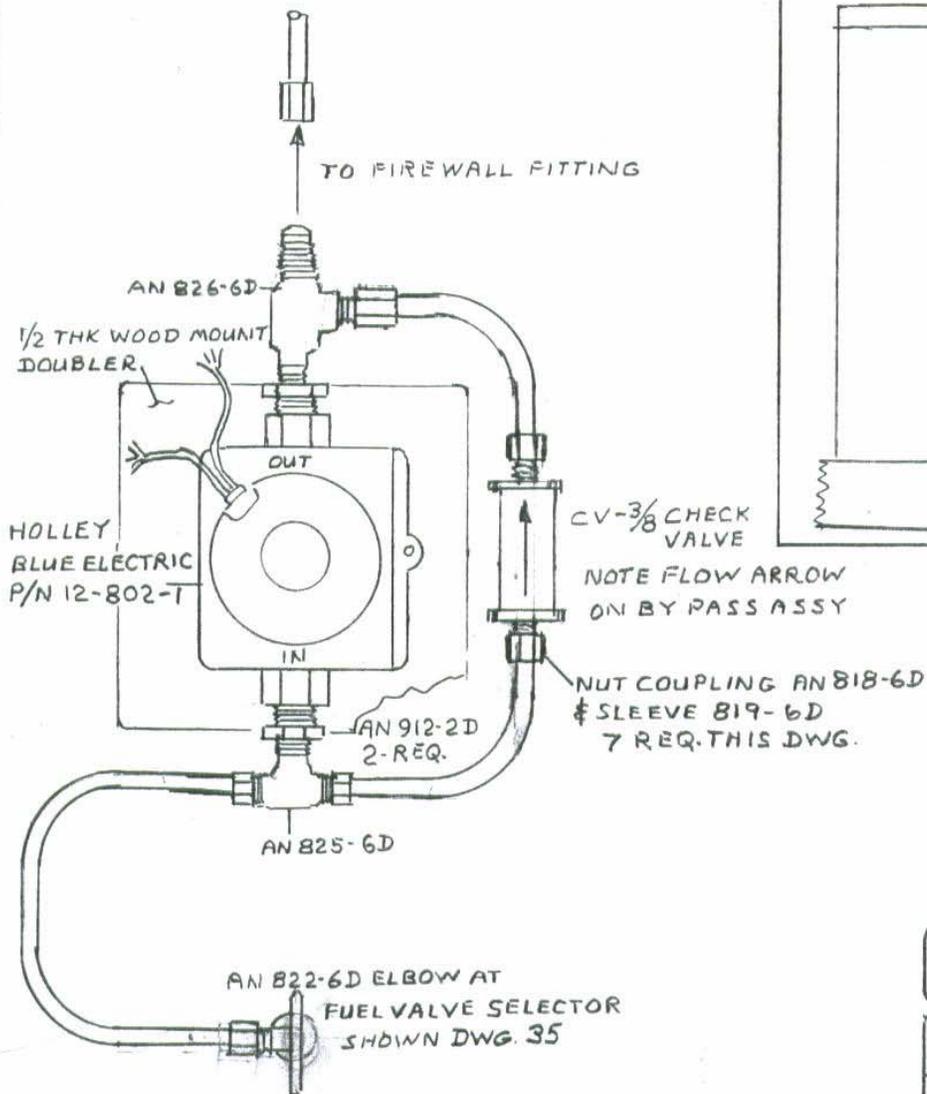
In the meantime I decided to use the Holly pump and mounted it vertical. This requires a 2 inch hole in the floor and the pump motor will stick up through the floor about 2 inches. It is not ideal but it is well out of the way of your feet since it is so far aft. I intend to fabricate a cover over the protruding motor just to insure protection when getting in and out. The 3/8" aluminum tubing I got from my local hardware store. It is a little softer than some of the aircraft grade so you can get a tight radius bend from the valve to the pump. This gets the pump farther aft, (see drawing next page). I believe Wicks and Aircraft Spruce call this tubing *versitude*? It flares nice and will bend tight with a good 3/8" tubing bender.

Regards to all

George

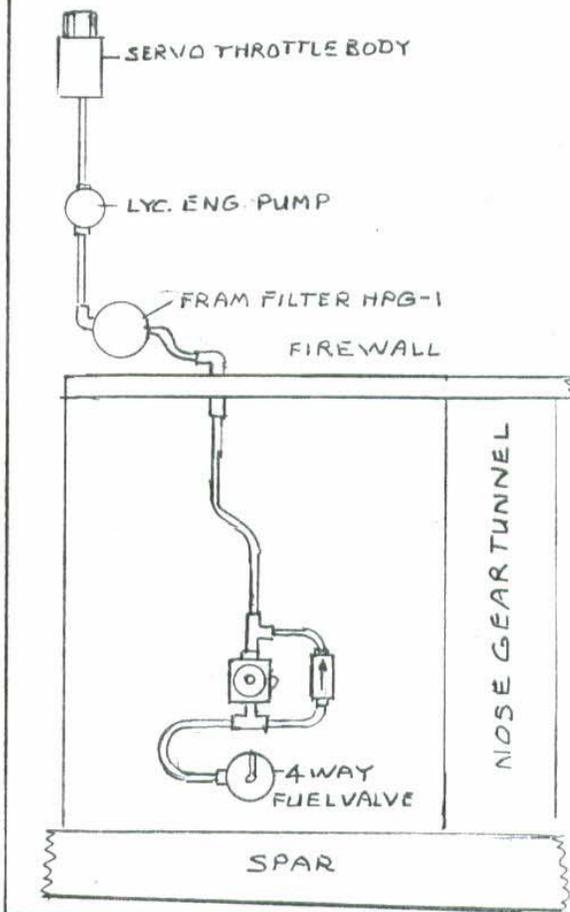
TOP VIEW LOOKING DOWN
MOUNTING DETAIL NOT SHOWN
THIS DWG.

NO SCALE



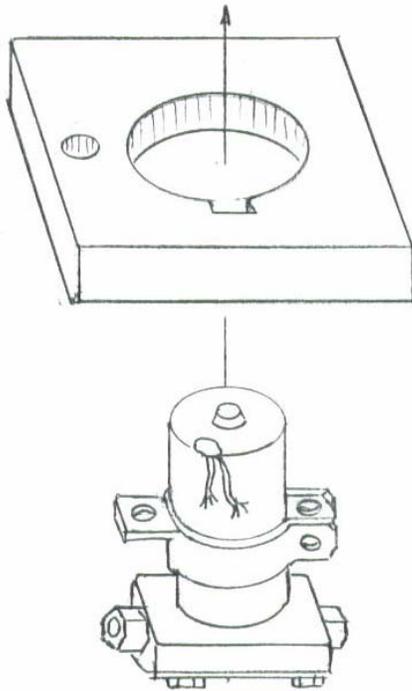
ALL TUBING IS 3/8" OD

NO SCALE



GP-4

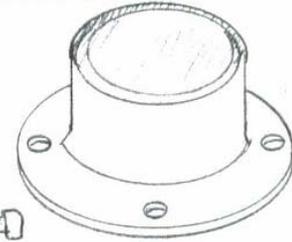
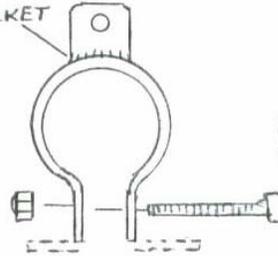
HOLLEY 12-802-1
BY PASS PLUMBING FOR LYC.
10-360 A SERIES ENG.
OSPREY AIRCRAFT 9-28-004
NEWS LETTER NO. 45 DWG. 1



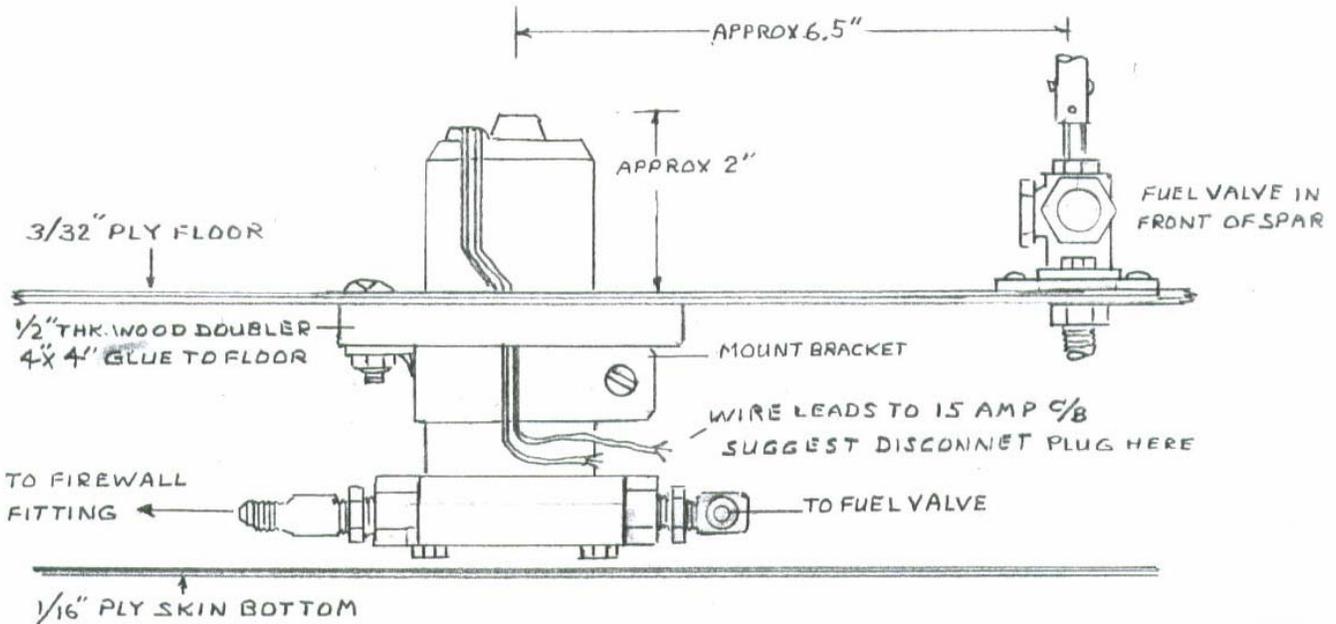
NO SCALE

WELD MOUNT TAB TO HOLLEY MOUNT BRACKET

COVER CAP, PROBABLY A GOOD OPTION. COULD BE FIBERGLASS?



CUT OFF EARS ON HOLLEY BRACKET & WELD ON MOUNTING BRACKET



NOTE: THE FLUSH ACCESS DOOR UNDER PUMP ASSY SHOULD BE LARGE ENOUGH TO REACH ALL PUMP FITTINGS APPROX. 11" X 5 1/2". THE FIREWALL FITTING CAN BE REACHED BY REMOVING THE EXHAUST OUTLET BAFFLE ON LEFT SIDE. (SEE DWG 57)

GP-4

HOLLEY 12-802-1
MOUNTING DETAIL VERTICAL
MOUNT BETWEEN STA 12 & 25
LEFT SIDE UNDER FLOOR
OSPREY AIRCRAFT 9-28-04
NEWS LETTER NO 45 DWG. 2

BUILDER'S UPDATE COCKPIT LIGHTING BY JIM SIMMONS, CHESHIRE, CT

While seeking to provide good lighting for my instrument panel during night flights, I found that there were more decisions than I originally anticipated. I thought I'd summarize my thought processes and selections regarding cockpit lighting for my GP-4.

Figure 1 illustrates my instrument panel. When purchasing my flight instruments, I decided that they would all be internally lighted. I felt this offered the best presentation to the pilot. Secondly, there is lighting associated with each of the avionics devices and engine instrumentation. Thirdly, there will be switches and controls that are not illuminated that need to be properly illuminated in order to conduct a safe night flight. Fourth, I wished to have a map reading light built into the aircraft. Lastly, I wanted the ability to independently dim each of these lighting sections in order to properly balance the different lighting intensities within the cockpit. Additionally, two flashlights are carried in my GP-4 however; they are primarily along for pre-flight, post flight and backup purposes.

Now that I'd summarized my

needs, I then moved on to selecting the devices to accomplish the above goals. I purchased my Artificial Horizon, Altimeter, Vertical Speed Indicator, Directional Gyro, Autopilot/Turn Coordinator, magnetic compass and two OBS indicators with internal lighting. The True Airspeed Indicator I chose did not offer internal lighting. I purchased a Nu-Lite 14 volt, 3 1/8 inch assembly to match this instrument. This Nu-Lite (PN LW3014) works well and may be purchased from Aircraft Spruce and Specialty for \$38.50. A minor trimming of the assembly was necessary to accommodate the adjustment knob on the instrument.

I opted for the VAL Avionics CLA-500 multi-circuit dimming system. This unit sells for \$278 from Chief Aircraft. While this is not an inexpensive solution, it does offer a complete package which perfectly matched my needs. The kit includes the dimmer power supply, four on/off dimmer control potentiometers, connector assembly and complete instructions. Figure 2 illustrates the control knobs and labels as they appear on my instrument panel.

Figure 3 illustrates an eyeball

light on the left hand side of the cockpit. This light serves to illuminate all unlit switches and controls on the left side of the cockpit. This eyeball light is PN 11-07800 available from Aircraft Spruce and Specialty at a cost of \$12.50. A similar eyeball light is installed on the right hand side of the cockpit and can be seen in Figure 4.

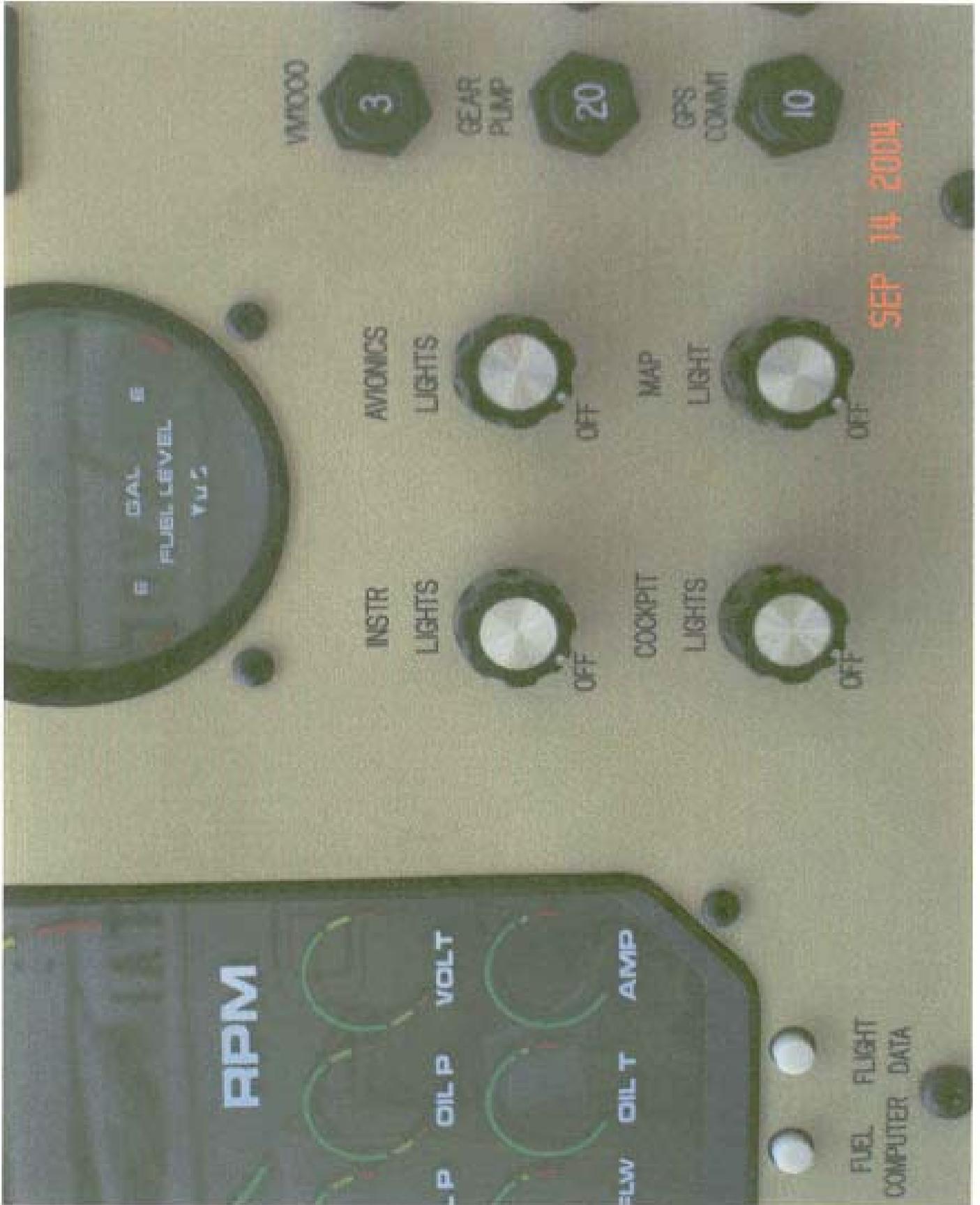
Figure 4 also illustrates a flexible shaft map reading light which tucks under the instrument panel when not in use. When desired, just pull it out from underneath the panel, turn it on, adjust the intensity and you have a fine map reading light. This assembly was purchased from a local marine supply house for about \$40. It included the mounting base, goose neck, the 12 volt light assembly and a white and red lens for the lamp.

I am completely satisfied with this choice of devices and I have full control of the lighting intensity for my GP-4.

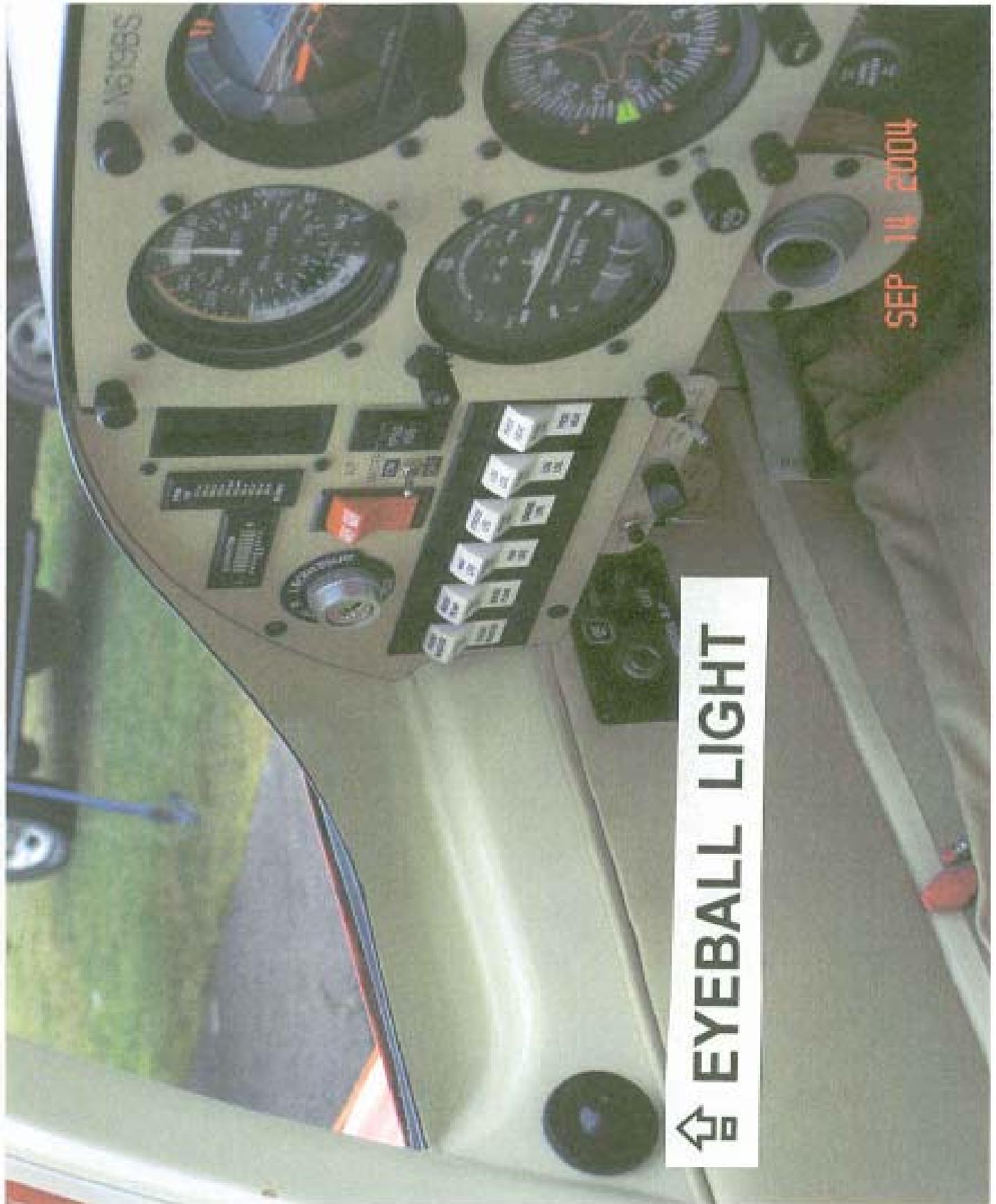
BUILDER'S UPDATE



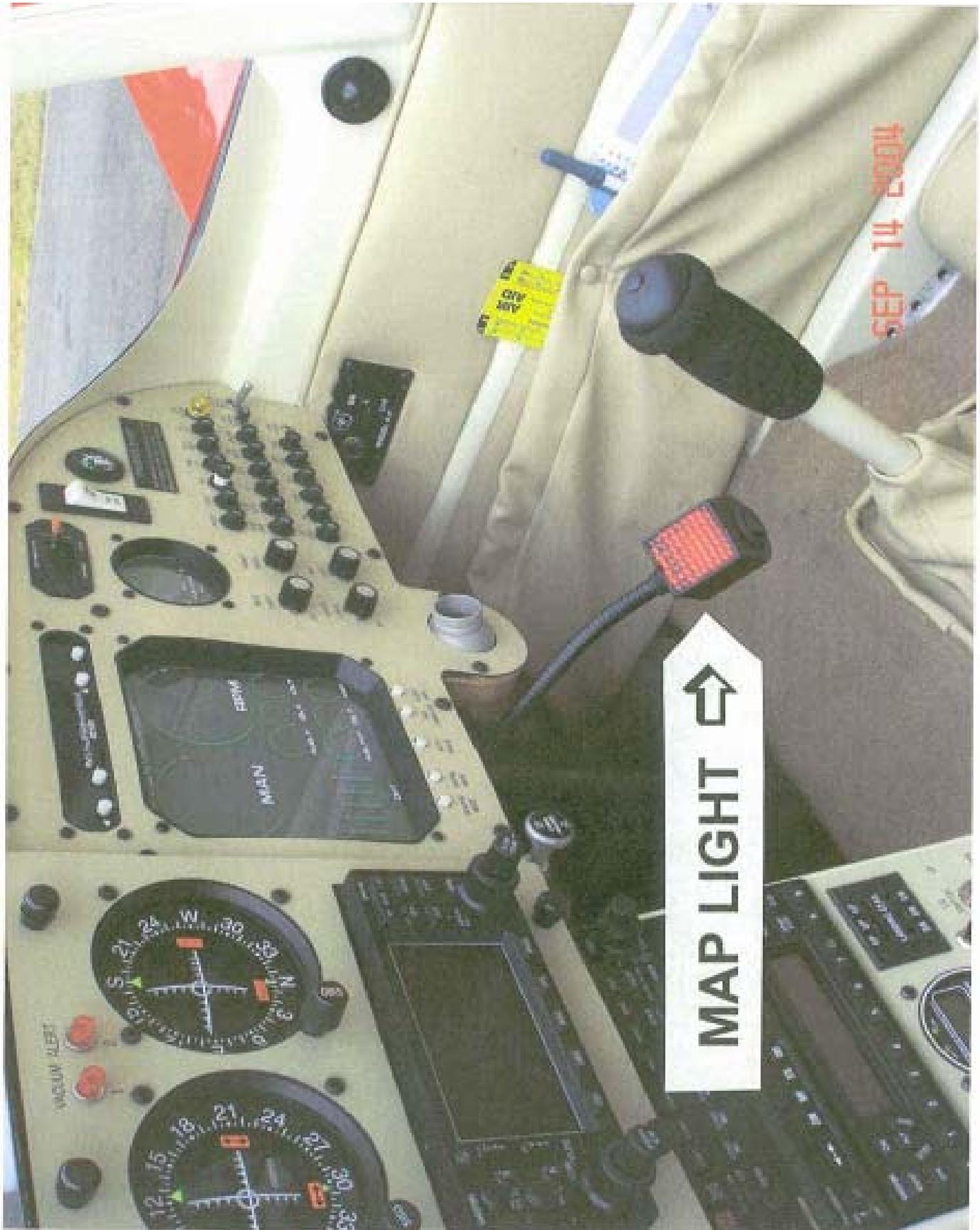
BUILDER'S UPDATE



BUILDER'S UPDATE



BUILDER'S UPDATE



BUILDER'S UPDATE GP-4 FLOOR JACKS BY JOHN REINHART,

Here are some photos and a construction drawing for the floor jacks I built for my GP-4. They are made from 6 pieces of 2'x2'x3/4" birch plywood and 2 pieces of 4" x 4".

They are sturdy enough that they will hold a Mack Truck. They use a short 12 ton bottle jack at the bottom. The four sides form a 3 3/4" hole in the center where the 4" x 4" goes.

These can be made for about \$80. To locate where to drill the 5/16" hole for the safety bolt the airplane must be jacked up all the way. Then

locate the hole about 1/8" above the top of the jack base top. That will allow you to slide the 5/16" x 6" safety bolt through the 4" x 4" so that if the jack fails or you want to let the pressure off, the bolt comes to rest on the top of the jack base.

When you make the jacks, the 4"x4" has a 1 5/16" oak dowel in the top. It is set and glued into the 4"x4" about 2" deep and extends above the 4"x4" about 1 1/2". The top of the dowel is rounded to allow the 2"x4"x5" jack pad to rotate to match the wing dihedral and any forward/backward rotation caused when you

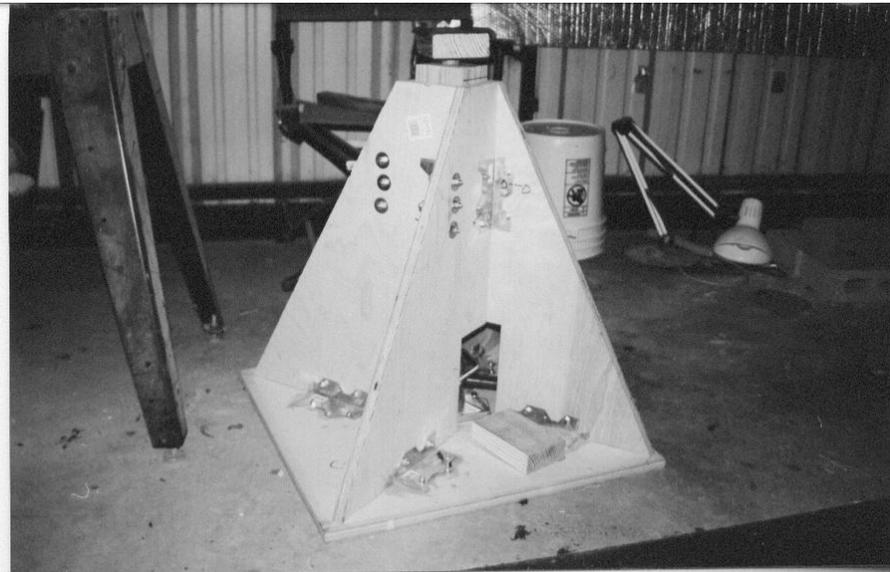
hoist the front of the airplane to get the nosewheel off the ground. The hole in the 2" x 4" is drilled about halfway through and the hole is about 1 1/2" diameter larger than the dowel. This fits loosely over the top of the dowel and is not glued to the dowel.

Cover the top surface of the 2" x 4" jack pad with soft rubber to prevent damage to the wing and to ensure it does not slip and slide.

See pictures next 2 pages



BUILDER'S UPDATE



NEED HELP?

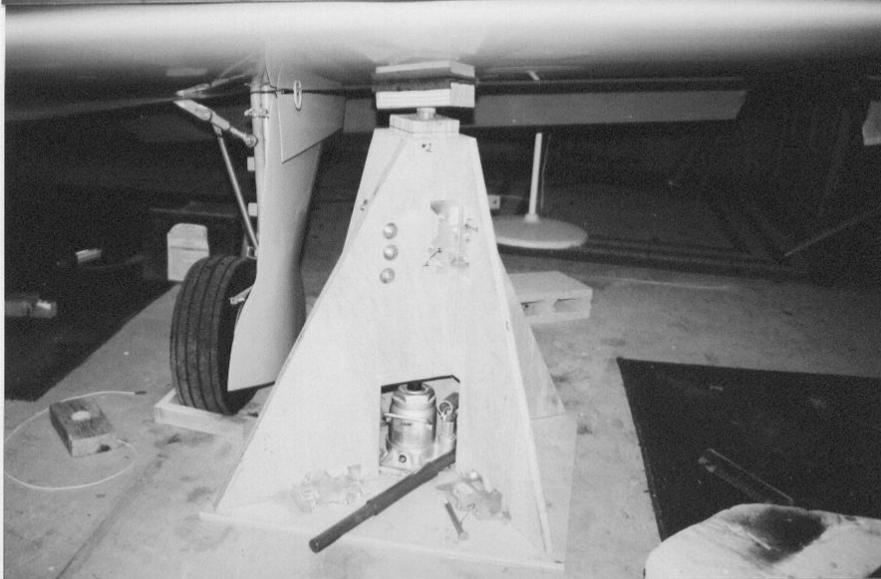
Have a question, idea, or is there something you don't fully understand?

There are currently about 525 sets of GP-4 plans in builder's hands. Of course, it's impossible to know how many builders are active, but we can hope :)

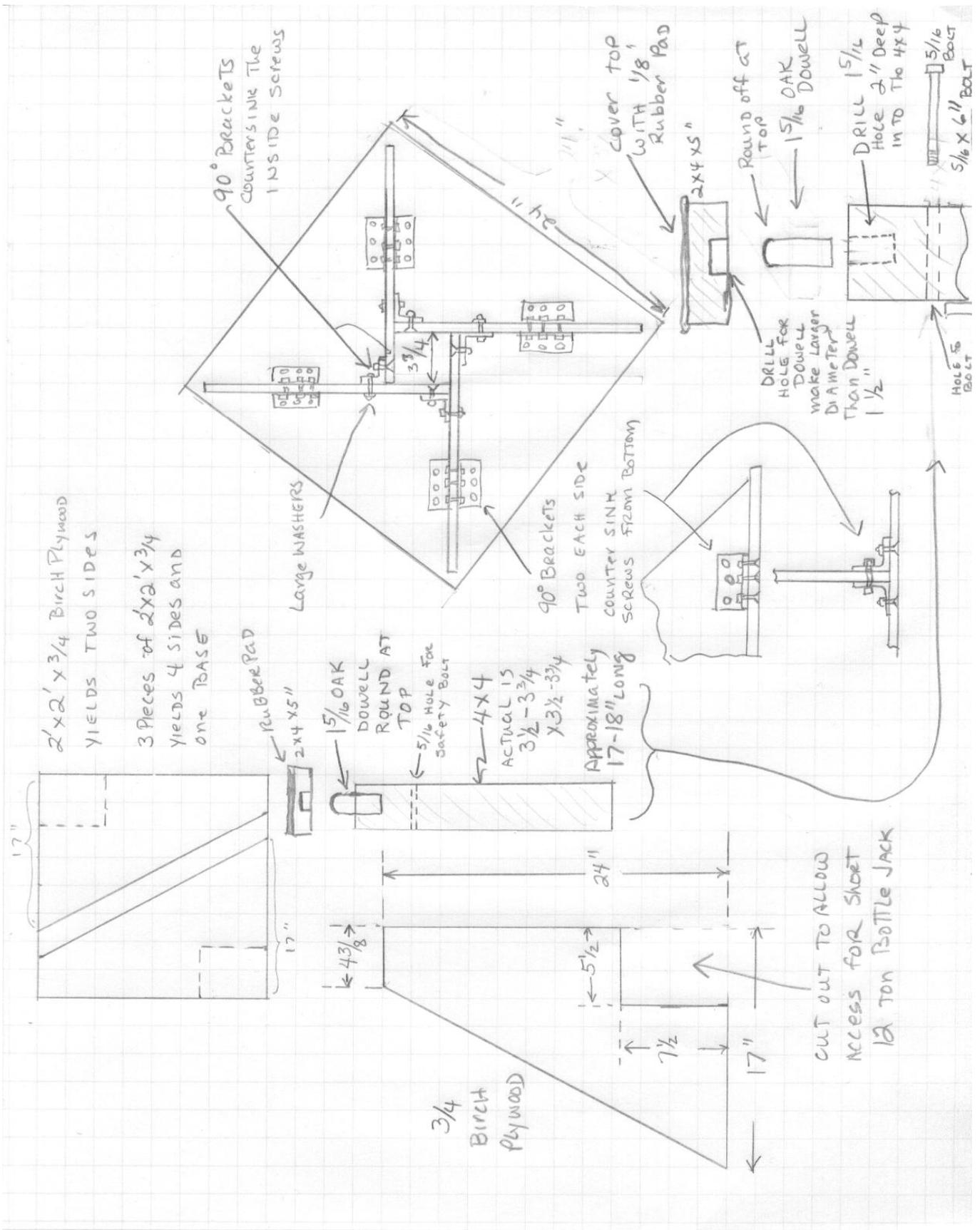
Help / answers / advice is only a phone call or note away. Please remember to include your plan serial number when you write, it helps to locate your mailing address.

Write or call:

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BUILDER'S UPDATE



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Thank You!!

CLASSIFIEDS

For Sale:

Pre-fabricated composite components for the GP-4. Cowling, Exhaust Blisters, Inlet Ramps, and Tailcones. Individual parts or complete package available.

Cowls are constructed with West System Pro Set 125 Resin and 225 Hardener. They are hand lay-ups of 4 layers of 6 ounce cloth, and 2 layers of 10 ounce cloth.

I get great discounts on shipping and I pay for the packaging. For current pricing, please call or e-mail: Bob Ringer—Halifax, Canada.

Phone: 902-876-2871.

Cell: 902-483-4611.

E-mail: bobringer@eastlink.ca.

For Sale:

Quality custom fabricated metal components for the GP-4. State of the art equipment used by a certified welder to construct parts on the jigs obtained from Darry Capps. Available from: Raymond Beazley, Dartmouth, Canada.

Phone: 902-465-6141

Cell: 902-497-4187

E-mail: ray1beazley@accesswave.ca

For Sale:

GP-4 Project
 Fuselage — almost ready to cover
 Emp — almost ready to cover
 Most of the metal work is done
 Gear done (manual retract)
 Plywood bows formed for canopy
 Wing 0% done

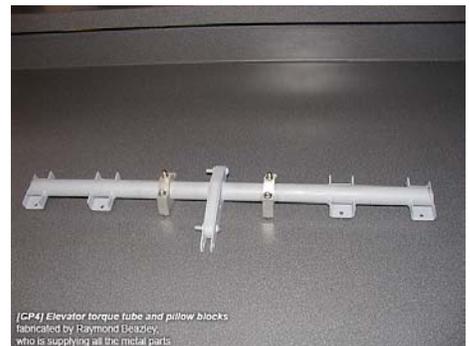
Some hardware & a few instruments included.

Built by A & I

Located near Lake Hill Airport, P09, PA

For more information:

Ken Grieb
 kgrieb@nauticom.net
 (724)625-9202



[GP4] Elevator torque tube and pillow blocks fabricated by Raymond Beazley, who is supplying all the metal parts.