BUILDERS & FLYERS
GP4
NEWSLETTER

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

VOLUME 15 JULY - AUGUST 1997

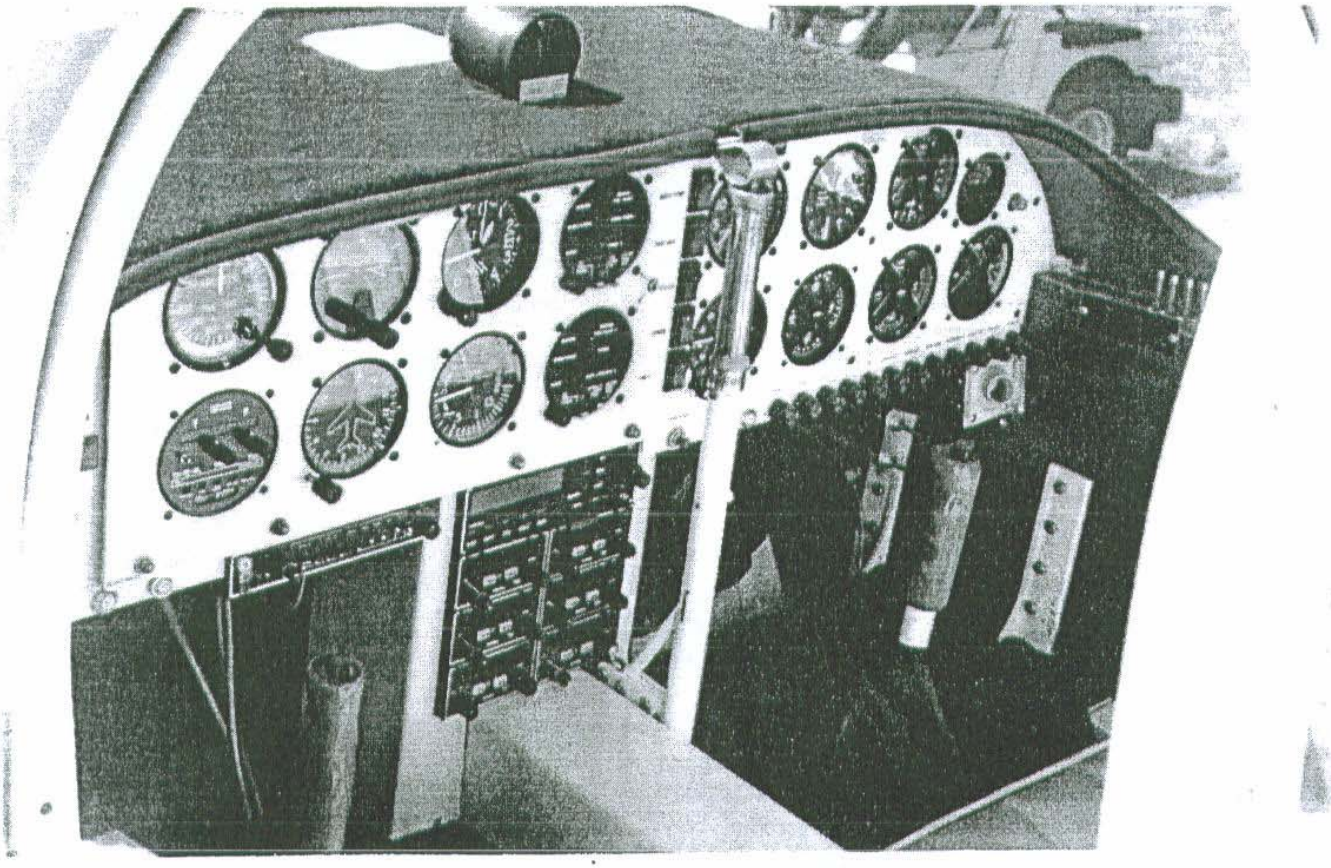
JACKIE YODER AND BILL BERRICK GP-4'S ON DISPLAY AT OSHKOSH 1997 !

We had two "new" fantastic GP-4's at this years Oshkosh fly-in. Bill Berrick of Omaha, Nebraska and Jackie Yoder of Midland, Michigan.

In this issue we are going to take a little closer look at Bill Berrick, and his beautifully detailed GP-4. By the time I caught up with Bill Berrick he had put 58 hours on his GP-4 to date. He surely isn't letting it sit in the hangar. Below is an update on some of his flight experiences in his GP-4. I had failed to post Bill's empty weight in an earlier report which is 1338 lbs.

I have been getting the gear up the past few flights -- a real chore! I get up to 2000 msl, slow down to 80 and can then get it up. George had said in his original article that he had to have it up before 90 mph or it wouldn't make it.

So far I am having trouble getting the internal main gear doors to close completely. I had added small springs to the cables that pull them shut because my main doors lack about 3/4" to as much as 3" of closing completely until the air hook finishes the job. That means a direct cable per the plans would be trying to close the internal door even though it laps over the main door and cannot close until the gear handle is plugged in to activate the micro-switch. I have air cylinders on



order from Wicks Aircraft, but have not been able to get the correct ones to date. When I get the correct ones and get them installed, I'll report back to the newsletter to share my findings. I have about 58 hours on the GP-4 now; and have only been up to 66% power so far, 22" MP and 2400 rpm which that is giving us 205-215 MPH – this thing wants to go!!

I've restricted the max power setting so far to 22" MP because of a vibration problem. We have eliminated 2 possible areas that may of been causing the vibration. First being the propeller, we had it ran through a complete testing and it checks perfect. The next area of possible concern might be the airframe itself, maybe the gear doors or some other part of the airframe was causing the vibration. I had the opportunity to make a couple of high speed let downs through holes in the clouds at lower power setting. Each time at over 240+ mph the let down was "Smooth as Glass" (Jakie Yoder also has seen 280 mph in some of his let downs). So I feel the airframe is not the fault. It seems to be narrowing down to be engines related. I have talked to the people that overhaul this engine for me in regards to their recommended break-in procedures. They feel that I may be taking it a little too easy with the engine during break-in. They recommend I use a more aggressive power settings and hotter leaning - EGT setting. The vibration problem is improving with time, so it just may be related to the break-in time and procedures.

I'm working on two things that I'm going to be able to share with everyone through the newsletter. A fuel consumption chart and an OPS manual. The fuel consumption chart is going to be very close to that of a Mooney with a 200 HP Lyc. IO-360. The fuel burn at 22" at 2400 rpm is 11.0 gallons per hour. It took 27 gallon to go from Omaha to this years Oshkosh. Spud said he burned more gas than that in his pickup this year coming from Kansas City. I bet I got there a lot quicker also (non-stop)!

I'd like to try to describe some of the flying traits of my GP-4 for the builders or about to be builders that may of not had the opportunity to fly in one of the GP-4s.

I considered the airplane to be neutral to slightly positive in stability. It goes exactly where you point it, but is not easily defected and has a tendency to "stay put". I feel its going to be an excellent instrument airplane. I have shot several ILS approaches and as long as you get it slowed down properly and trimmed right it comes down that ILS like its "On a Cable". Very stable airplane, very comfortable in this area.

The ailerons are heavy/firm at speed as compared to my Acro, Sport II, but very responsive with very little control movement required to do whatever is needed.

The elevator is light and sensitive all the way through the range very similar to a Grumman that I have a fair amount of time in.

Another area that I'm very happy with is the performance of the GP-4. When I was in the Air Force as a Flight Surgeon I had the opportunity to put in quite a few hours in F-15's. The maneuverability and visibility when doing such maneuvers in my GP-4, such as 90 degree steep turns and Lazy-8's are the closest I've came to those days in the F-15's. The GP-4 really is a performer in this area!

Landing the GP-4 is a "Cinch" compared to my Acro Sport II and is very well mannered. Very similar to the Grumman.

I'll keep everyone up-to-date as I build flight time,

Regards,
William Berrick
11803 Hunters Cove
Omaha, NE 68123
(402) 292-6832

We'll take a closer look at Jackie Yoder's GP-4 "Cotton Candy" in the next issue of GP4BFN - Spud

MULTICOM

● Oshkosh 1997

Hello Spud, We're sorry we missed you at this years GP-4 builders meeting on the Homebuilders Headquarters front porch. The meeting included about 12-13 builders, Jackie Yoder and myself (Bill Berrick). I was pleasantly surprised to learn that there is another 4 to 5 GP-4's that are painted and are very close to flying, likely within the next year. Quite a few of the builders brought their photo albums along and everyone's construction looks very good. A couple of things that came out of the meeting are: The group would like to have a better communication flow from the three people that have built the first three GP-4's. The group felt that any information in regards to any previous "situations" or "service difficulties" would be of great help to the over all group. Another thing that came out of the meeting is a desire by some to have a GP-4 group E-mail list. What this is a group mailing list. If one of the builders would post a question or answer to the list, then this item gets automatically distributed to everyone that has subscribed to the list and vice versa with the next response. Spud would like to here from the group if there is an interest in just a list and if anyone out there in the builder community knows how to facilitate such a listing service. - Bill Berrick

● Another new builder joins us

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

Multicom cont'd on next page

Mulitom cont'd

the case with most builders, I am trying to keep the overall project costs down--good, serviceable, 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" fuselage 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, wing tip and tail cone lens formers, 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.

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'd appreciate it! Keep up the good work with the newsletter -- it shows!

Bob Hanson

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Tucson, AZ 85737
(520) 797-8951 (evenings)
bhanson@as.arizona.edu

George's Corner

Fellow GP-4 builders,

We used to have a very nice newsletter for the Osprey 2. With 1200 or more builders the newsletter was enhanced by builder participation from all over the world. The builder articles were often problem solving and very interesting but the editor and myself had to constantly appeal to the builders for these articles which made up most of the Osprey newsletter. Spud and I are now appealing to you plans holders for more GP-4 articles. I promise to address your building problems, share your ideas, and help if I can.

● **Gear Doors:**

Keeping gear doors closed and tight have always been a problem on high performance aircraft. The GP-4 is no exceptation. The aerodynamic shape of the doors tend to suck open as speed builds. Spoilers on the door can reduce this low pressure suction but only defeats the purpose by adding drag. The main culprit on the GP-4 are the inner doors on the inboard side of the main gear door. Since the main gear door is bolted the strut it is always tight if the uplock is engaged. The shape of the inner doors is well curved in order to cover the wheel and tire so the low pressure suction is high as speed increases. To mechanically close the door with cable and push rod the tire must clear the door before the door starts to close. This means that the push rod that retracts the gear must close the door on the last bit of travel left as the tire clears the door. This puts a very high leverage factor on the cable and door horn mechanism. I found myself re-adjusting this assembly often as air checks showed these doors were sometimes part way open. It finally dawned on me that since I had a power source of air for the uplocks why not close these doors with an air cylinder. The nice part of using air is that when the valve opens for air to the uplock cylinders the wheel and tire is already in the well so the door is clear to close. I have had this air cylinder closure system on the prototype for about three years now. Jake Jackson has checked the doors at over 200 mph and says they are tight. This system can be retrofitted easily into a finished GP-4. I strongly recommend it over the cable push rod setup for all manual operated retract GP-4's. Wicks Aircraft supply can get the cylinders if you haven't got a good hydraulic store available. The drawings #1 and #2 should be self explanatory.

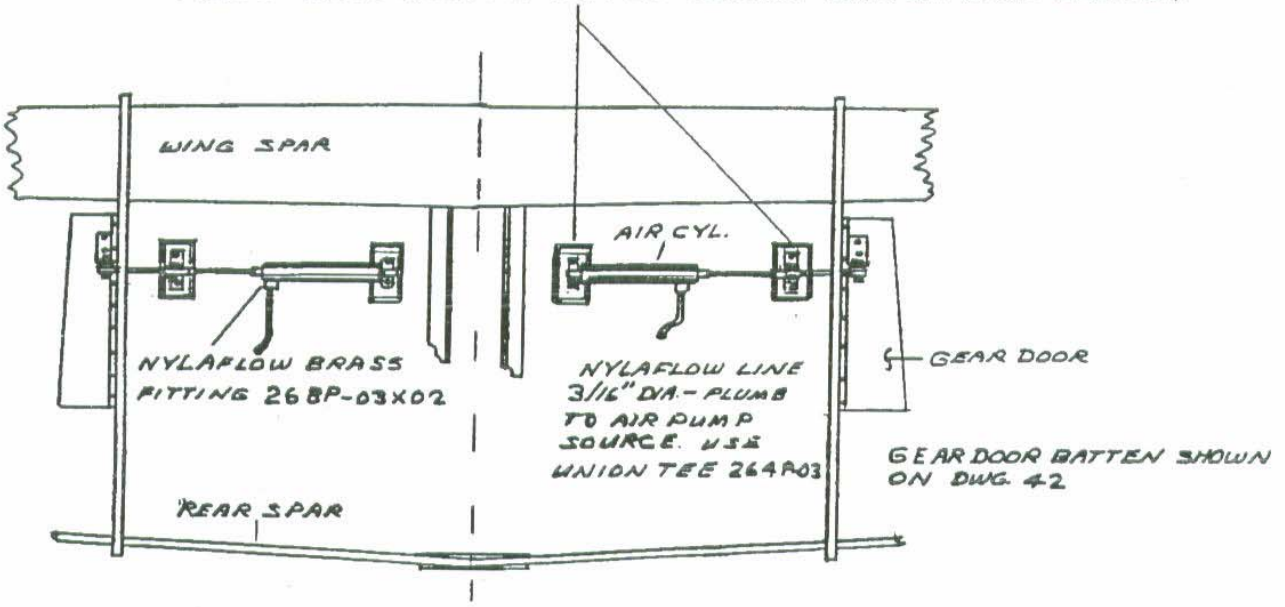
Buzzard Flight:

The call goes out in the clear "Any buzzards up?" Kit calls from his Midget Mustang "Going to Clear Lake". The Rio Linda bunch this Saturday are 2 Bonanza's, a Skylane, a Cougar, A Vari-EZ and 2 GP-4's. Jake's GP-4 is off first and I join up on his wing shortly after. Jake was kind enough to pull the power back to 20" so I could catch up and fly a nice formation. Out of the ARSA Jake goes to 25 square for a easy climb to 5,500 feet. I am showing about 1200 ft per minute and 170 mph. Its a hit day, close to 100 degrees. I am showing 210 degrees on the oil, 380 degrees on the hottest cylinder #3. With on 42 sq. inches of inlet air I am always amazed at how cool this Lycoming is running. As more buzzards call in their positions. I peel off from Jake to look for the RV-4's . Keith Peterson has a beautiful Red RV-4 and I spot him at my 10 O'clock about 4 miles out. As I slide in on his right wing he waves so we fly formation for a few minutes. I am already leaned out and as we fly along I check my power. 2,400 rpm, and 16" MP and fuel flow is 5.5 gallon per hour! Its pretty quiet at those power settings also. Ten miles out I drop down to about 200 feet over the lake. Lots of pleasure boats out today. Pulling up to traffic pattern altitude I am able to fly a close down wind, real short base and final and off to my left is Lamson's restaurant. ***Is that a dead cow on the taxi way!***

Regards to All, George

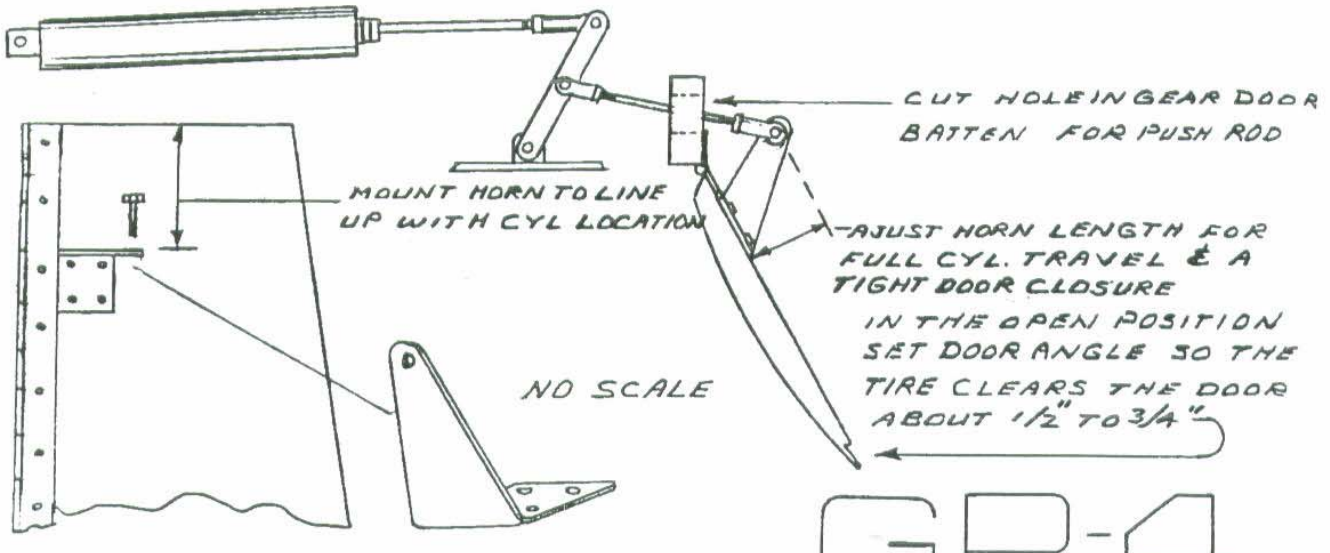
TOP VIEW - SCALE 1/10

MOUNT BLKS GLUE TO 1/16 PLY BOTTOM CENTER WING SECTION



AIR CYL IS ARO Ø176-4Ø19-Ø4Ø 2 REQ.

CYL. IS SPRING LOADED OPEN. DOOR CLOSES AFTER GEAR RETRACTS & UPLOCKS ARE ACTUATED

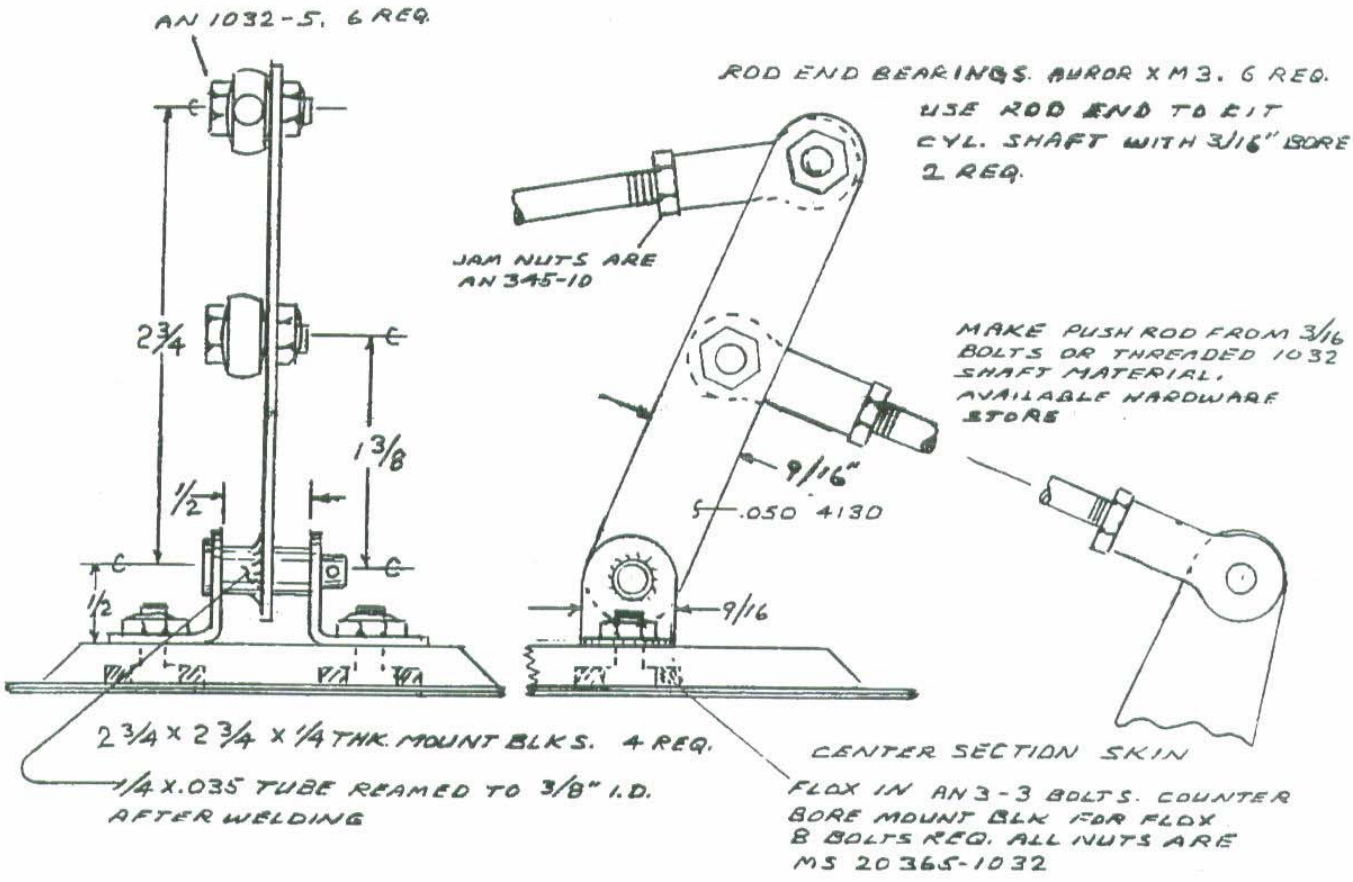


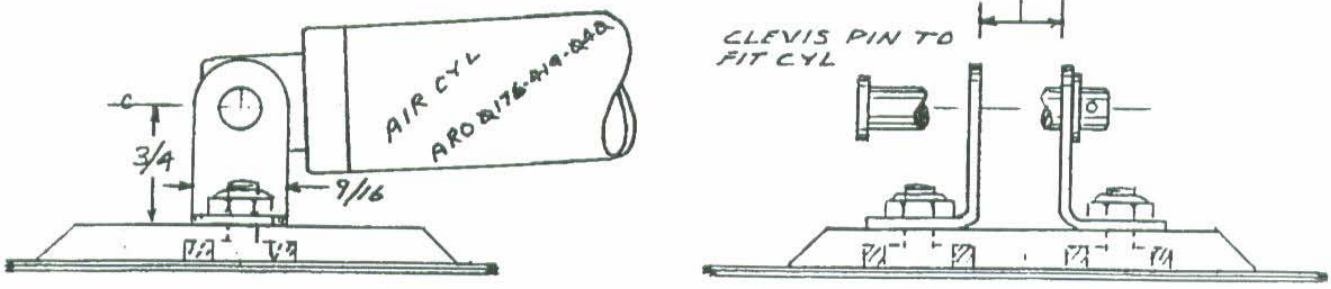
FOLD UP HORN FROM .050 4130. FLOX IN 4, 832 BOLTS IN DOOR FOR HORN ATTACHMENT SUGGEST HORN MOCK UP FOR FITTING.

GP-4

GEAR DOOR CLOSURE REVISION
AIR CYL. ARO Ø176-4Ø19-Ø4Ø, 2 REQ.
DESIGN: OSPREY AIRCRAFT 7-30-97
SCALE 1/10 & NO SCALE, DWG. 1

CYL. IDLER ARM & MOUNT BLK ASSY
SCALE FULL





SCALE FULL

GP-4

GEAR DOOR CLOSURE REVISION
CLEVIS PARTS & ARM 4130 .050
SCALE: FULL - 7-30-97
DESIGN: OSPREY AIRCRAFT. DWG 2

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 shipping charges Jake Jackson - Rio Linda, CA (916) 992-0608

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

For Sale: " N" Numbers!!! **LETTERING BY ROBERT! "N" NUMBERS AND MORE!** High quality self-adhesive aircraft numbers. Numbers and lettering in any shape, size and color. You'll love our work - 100% satisfaction guaranteed. Pricing - 3"-.75, 4"-.95, 5"-$1.15. - Postage and handling $3.50. Ask for Robert after 6:00 p.m. (913) 648-4022 or E-mail "apwrobert@aol.com or mail to: 6501 W. 80th Terrace, Overland Park, KS 66204-3823

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Here's the **"official"** license plate of Texas! When you drive down the street and see an EAA sticker on the back window of a car, the first thing you think of is".....I wonder what he's (or she) building - or has...." Well - I came up with the answer - They can now read MY LICENSE PLATE and if they still wonder what it is - they must just be subscribers to magazines only or too engrossed in aluminum, drilling holes and riveting their RV's - that they've gone BRAIN DEAD!

Respectfully submitted by C.J. Reinhart, Fort Worth, Texas

BUILDERS & FLYERS GP4 NEWSLETTER

1112 EAST LAYTON DRIVE
OLATHE, KANSAS 66061

FIRST CLASS MAIL

NEWS FOR CRAFTSMEN OF FAST WOODEN AIRCRAFT!