

GP-4 BUILDERS & FLYERS NEWSLETTER

April/May 2004
GP4BFN 43

CONGRATULATIONS!

**JIM SIMMONS'S
GP-4 WINS
"BEST ALL WOOD"
AIRCRAFT AT
2004 SUN-N-FUN**

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Jim and 2 beautiful Airplanes !

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

WISE OLD TID-BITS

* Though I Fly Through the Valley of Death ...I Shall Fear No Evil ... For I am at 80,000 Feet and Climbing. (sign over the entrance to the SR-71 operating location Kadena, Japan

* You've never been lost until you've been lost at Mach 3.
(P a u l
F.Crickmore -test pilot)

* From an old carrier sailor - Blue water Navy truism; There are more planes in the ocean than submarines in the sky.

* If the wings are traveling faster than the fuselage, it's probably a helicopter -- and therefore, unsafe.

* Navy carrier pilots to Air Force pilots: Flaring is like squatting to pee.

* When one engine fails on a twin-engine airplane you always have enough power left to get you to the scene of the crash.

* Without ammunition, the USAF would be just another expensive flying club.

* What is the similarity between air traffic controllers and pilots? If a pilot screws up, the pilot dies, If ATC screws up, the pilot dies.

* Never trade luck for skill.

GEORGE'S CORNER

BY GEORGE PEREIRA



you stay with the internal wing tanks as designed.

Wing Tank Installation:

The notch on the bottom longeron area just ahead of station 25, (see drawing 2) is for the hose connection from tank to gas fuel valve. I suggest that you cut this notch after you install the wing tank to the spar. This will give you the exact location for the notch as you fit the spar into the aluminum angle fittings shown on drawing 39. The notch should be generous since you will probably use a socket to screw in the AN 816-GP fitting into the 1/4" pipe opening at the butt end of your tank. (See drawing 23.)

Tank Resin?

Since we are presently using alcohol free 100 low lead in our IO-360s, I suppose any good epoxy or polyester resin will work OK. Our good friend Mike Traud has done some research on a West system resin called Proset.

Mike has made some tests along with his research and he highly recommends this alcohol resistant resin designed for fuel tanks. Apparently, when using auto fuel in fiberglass tanks, there has been leaching or some breakdown of the resin matrix due to alcohol in the fuel mix.

(continued)

Fellow GP-4 builders:

I thought Elton's last newsletter was really well done. Good information with a great sense of humor. If you are going to succeed in building your airplane, a good sense of humor certainly helps.

A quick comment on the article "Winter Weather Safety". If you get into icing conditions, I hope you're flying with United! The GP-4 is not a heavy weather machine. The GP-4's laminar flow airfoil does not work well in any kind of icing that distorts the shape. If you are going to file IFR, be sure to check those freezing levels.

Fuel Tanks:

To get long range in these little hot rods, you have to take advantage of every fuel space available. In the GP-4 this leaves the wing Leading Edge and the Fuselage just ahead of pilot and passenger. The fuel weight moment change

is small, so you don't get a large CG shift as fuel burns off. I have received several inquiries about the two GP-4s that modified the Leading Edge wing tanks into a full fiberglass D section with no foam or ply skin ahead of the spar. This modification increased the fuel quantity considerably, however it could open the door to potential structure and distortion problems.

First, you no longer have the foam seal around the tank as a back up against leaks. The foam encapsulated tank allows the wing to flex and still hold its shape, which is very important with this 63 series airfoil. Torsional strength would be lost because the foam sandwich acts as a diaphragm to provide strength against wing twist. You get a different coefficient of expansion in wood and glass. I have to wonder what happens to structure and shape when the ply skin stops at the spar and only glass is forward to stop the D section. You might guess that I recommend



Here are some specs from Proset which is available from Wicks or Spruce or possibly local.

Resin is #125 , hardener is #129. Manufacturer is West System. Mixture of Proset is as follows: By weight, 100 parts resin to 30 parts hardener. By volume 100 parts resin to 35 parts hardener. The pot life at 65 degrees F. is 83 minutes. At a temperature at 85 degrees F. it is only 27 minutes, so work cool!

After normal air curing, you cure a second cure with heat at 135 degrees F. You can do this by placing black plastic and expose to summer heat.

The second cure can be anytime, even months after your lay up if necessary.

Since all resins shrink some, you probably will want to pressure check your tanks after the second cure. I pressure checked my tanks by glassing in an intertube air valve

where the filler neck would go and pumping about 3 lbs. pressure or until the tank slightly bulges out. I then dunked the tank in my swimming pool and looked for any air bubbles.

Another way is to plumb in an altimeter and look for an altitude change if it leaks. Soap and water brushed on the seams will show up leaks.

Your tanks should be resin rich to fill the weave as opposed to squeezing out excess resin in other lay ups.

Good luck with your project. Let me know if I can help. Your plans serial # helps so please include it with your inquires.

Regards to all,

George

MORE TID-BITS

* The three most common expressions (or famous last words) in aviation are: "Why is it doing that?", "Where are we?" and "Oh S#!+!"

* Weather forecasts are horoscopes with numbers.

* Progress in airline flying; now a flight attendant can get a pilot pregnant.

* Airspeed, altitude, and brains. Two are always needed to successfully complete the flight.

* A smooth landing is mostly luck; two in a row is all luck; three in a row is prevarication.

* I remember when sex was safe and flying was dangerous.

* Mankind has a perfect record in aviation; we never left one up there!

* Flashlights are tubular metal containers kept in a flight bag for the purpose of storing dead batteries.

* Flying the airplane is more important than radioing your plight to a person on the ground incapable of understanding or doing anything about it.

* When a flight is proceeding incredibly well, something was forgotten.

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BUILDER'S UPDATE

GPS ANTENNA INSTALLATION

Jim Simmons, Cheshire, CT

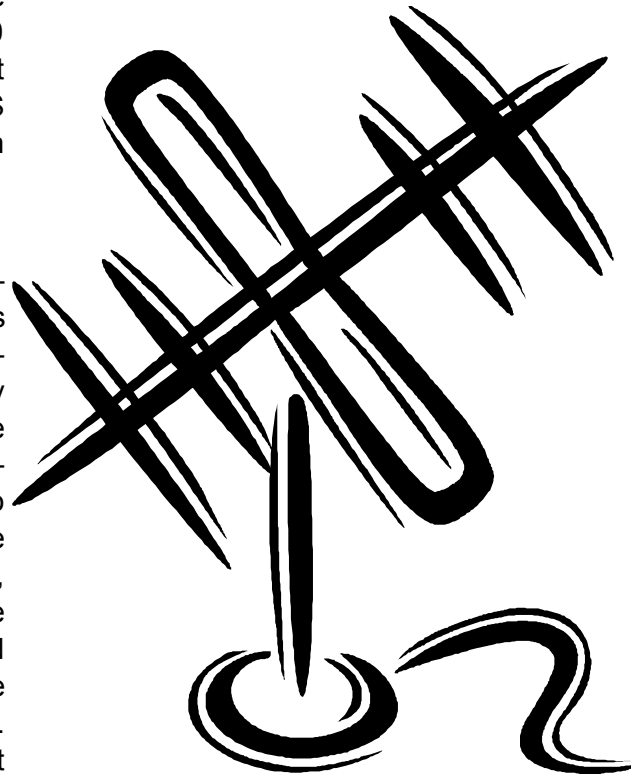
Like many pilots today, I wanted to install a GPS based navigation system in my GP4. I opted to install a Garmin 430. However, whatever system you choose, your next decision is where to install the GPS antenna. The GP4 plans were created 20 years ago when GPS was not available. A location for a GPS antenna is not depicted within the plans.

For optimum GPS signal reception, the GPS antenna requires that it be installed on a top surface of the aircraft. Many builders place the antenna inside the windshield and atop the instrument panel. I didn't wish to install it there. Even though the GPS antenna is relatively small, I still wished to install it inside the airframe. I decided I would install it inside the aft fuselage along with our other antennas. I located the GPS antenna at approximately Station 108. An additional factor in the choice of location was the accessibility to the antenna and its connector, via the battery access panel.

Jim Weir was the designer of the original antennas and their locations within the GP4. Concerned about signal reception under the plywood skin, I contacted Jim (via email) and inquired about installing the GPS antenna under the 1/16" plywood fuselage skin

of the GP4. I described the fuselage location I had chosen and requested his opinion as to its performance. Although non-committal, Jim advised me that "I do not see an issue" and thought it should perform satisfactorily.

I also understand that there is a



potential issue with COM antenna interference. The proximity of the COM antenna, relative to the GPS antenna, can cause loss of reception of the GPS signal when transmitting on the COM unit. For my COMM1 antenna, I chose to install a Bob Archer COM antenna inside the fuselage, aft of the baggage compartment bulkhead (station 78). For my COMM2 antenna, I use the antenna depicted in the GP4 plans on the leading edge of the

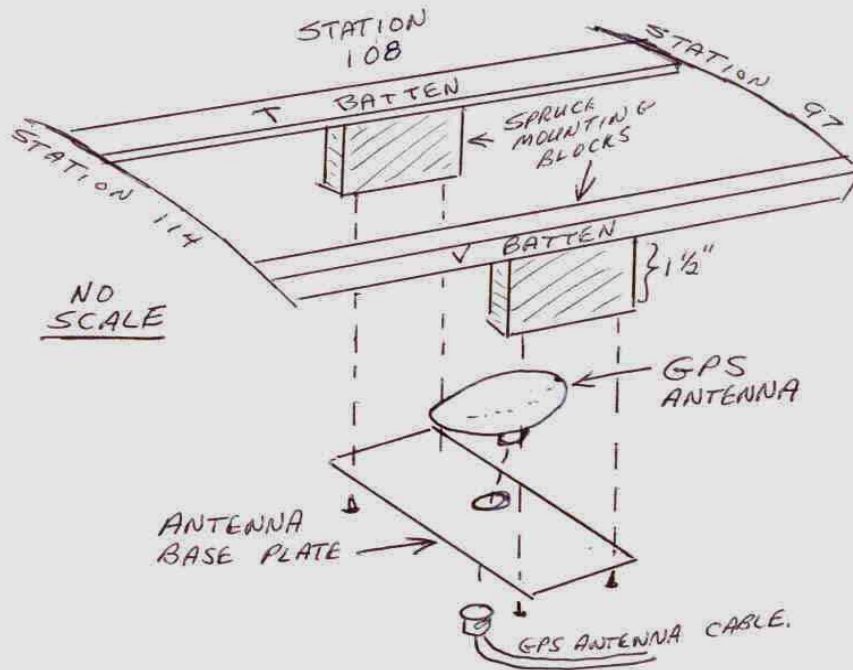
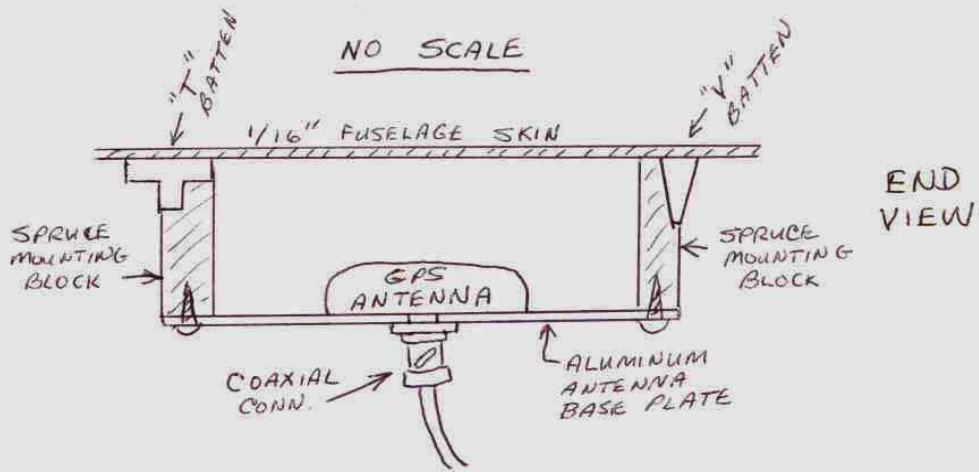
vertical stabilizer.

Due to the very low signal levels involved in GPS, it is strongly recommended that you use RG142 or RG400 coaxial cable for the GPS antenna cable. This cable is quite costly; however it provides the best possible signal level coupling with a minimum of loss.

Upon completion of my GP4, my avionics shop technician guided me through the testing of the GPS signal reception. The Garmin 430 also has specific tests, along with specific COM frequencies for the COMM interference testing. I did not have any issue with either reception and/or signal interference. I'm pleased to report the GPS system works great and I believe that the chosen GPS antenna location is viable for other GPS systems as well.

The illustration attempts to show my GPS antenna installation. I added spruce blocks to the underside of the top fuselage stringers for mounting of the GPS antenna base plate. The base plate is simply screwed into the wood spacers. The wood spacers should be long enough to permit easy removal of the GPS antenna.

(Illustration next page)



GPS ANTENNA INSTALLATION

FLIGHT ACROSS THE CANADIAN / UNITED STATES BORDER

Each year thousands of recreational pilots from the United States of America and Canada routinely cross the border and discover the rules of flight in both countries are so evenly aligned, that the process of dealing with Air Traffic Control and the Aeronautic Rules and Regulations of each country seems practically seamless.

As an example, aircraft flying from the eastern Provinces of Canada to Quebec and Ontario routinely enter American air space crossing over Maine, New Hampshire, and New York States to conduct the flight in the shortest distance. Leaving Canadian airspace going west you are handed off from Moncton Center to Boston Center and then to Montreal Center as just another routine flight. If you do not intend to land in the United States a Flight Plan is not even necessary. Many pilots just ask for "Flight Following" if conducting the flight VFR.

If it is your intention to travel to Canada from the US or to the US from Canada, a Flight Plan is required and Customs and Immigration must be given prior notice (usually 2 hours) of your intended landing time. A word of caution DO NOT RELY ON FLIGHT SERVICES TO ADVISE CUSTOMS. No matter how many times you tick off the ADCUS on the Flight Plan they will not do it. Invest in a telephone call and call the Customs Office at your intended arrival point and advise them personally, obtaining the name of the official you contacted. At the very least all occupants of the aircraft must have a picture ID. Since

September 11th. Most people are carrying a birth certificate and/or a passport for cross border flights. In other words some proof of citizenship is required.

Flight in Canada during daylight hours can be VFR, IFR, or VFR on top (Canadians who are not IFR qualified must have their Licence endorsed for VFR on top) Flight plans are required for night flights beyond 25 miles of your departure airport and for IFR flights and in the case of military airports prior permission is also usually required. For all other flights it is "kick the tires, light the fires" and away we go. If you are entering controlled airspace contact the tower prior to entering the zone.

Transponder rules are the same in both countries. Altitude requirements for VFR and IFR flights are the same ie. VFR odd thousands plus 500 feet going east and even thousands plus 500 feet going west. IFR odd thousands east and even thousands west. The majority of the population of Canada is situated in the lower portion of the country so there are many areas in the north that are sparsely populated. Special equipment requirements apply in these areas.

As in the United States we have some short sighted airport operators who are insisting on charging landing fees. The Canada Flight Supplement which is published by Transport Canada lists all airport in Canada and usually states which airports charge fees. This publication details each airport

and is really helpful for flying in Canada.

Navigation in Canada is usually by GPS, however ADF, VOR and Loran are also used. Many airports have at the least an NDB approach and all the larger Airports have full ILS on the main runways. All marker beacons in Canada were turned off about 10 years ago. Many of the airports now have a published GPS approach.

Canada is a large beautiful country, especially in the summer and fall. It is very green in the summer and the colors of the trees in the fall are breath taking. We have always had N numbers in attendance at flyins in this country and many Canadian registered aircraft at events such as Oshkosh in the United States. I have flown out of Boston's Logan airport at night in my Cherokee 180 after being lined up with the big ones and worked controllers up the Atlantic coast from Boston to Halifax, Nova Scotia and received "Royal treatment" from all of them.

I am building a GP-4 and my wife and I have a dream of flying this great aircraft to our favourite vacation Island of St. Martin in the Caribbean using Florida as the jumping off point. If anyone has a specific question about cross border flight please contact me and I will do my best to supply the answer.

Happy building everyone

Bob Ringer

bobringer@eastlink.ca

Hubley, Nova Scotia, Canada

BUILDER'S UPDATE

REVISED BRAKE PEDAL

LINKAGE

Jim Simmons, Cheshire, CT

During my initial test flights of my GP4, I discovered that I had difficulty holding sufficient brake pressure to execute a run-up at 1700 rpm. Additionally, I was also disappointed with the braking performance in general.

I had installed standard Cleveland Wheels and Brakes. I spoke directly with Cleveland and followed their break-in procedures to the letter. Cleveland technical support stated that the standard brakes should be sufficient for the weight and power of a GP4.

Ernie Holmes (fellow GP4 owner from MA) had the same problem and replaced his wheels and brakes with Cleveland high energy devices (Wicks PN CWB 199-197) and solved his problem. I ordered the high performance units but upon receipt it appeared that I would have to rework my main landing gear doors to accommodate the larger caliper assembly. I returned the new devices and then I redesigned the brake actuating lever at the base of the brake pedals. I made an initial change to the clevis arm and was able to hold the aircraft up to 2000 rpm.

I have now redesigned the linkage a third (and final) time and can now hold the airplane up to 2300 rpm. The attached drawing (Figure 1) shows the revised dimensions of my last version.

During an earlier visit to Massachusetts, Ernie Holmes had suggested that I install a splice and coupling sleeve on the brake pedal torque tubes to facilitate the easier removal of these shafts through the small opening in the top of the fuselage. This has proven to be a blessing and I strongly suggest that builders consider installing the split shafts.

I made the splice cuts 10 1/4" from the end of the torque tube. The two sleeves are 1" diameter 4130; 2 1/2 inch lengths. The sleeve is capable of sliding on the shaft. AN3 bolts are installed through each shaft. The aft tube splice is on the pilot side, the forward tube splice is on the copilot side (Figure 2).

George Pereira suggests filling the spliced tube section near each hole with Flox to strengthen the torque tube so it isn't compressed when tightening the AN3 bolts. I strongly recommend this modification for ease of removal of these assemblies. Thanks to Ernie for the great idea.

I do not pretend to be an engineer. I can only state that these modifications have proven to solve the problem for me.

Jim Simmons
Cheshire, CT

(see drawing next page)

STILL MORE TID-BITS

* Just remember, if you crash because of weather, your funeral will be held on a sunny day.

* Advice given to RAF pilots during W. W. II. When a prang (crash) seems inevitable, endeavor to strike the softest, cheapest object in the vicinity as slowly and gently as possible.

* The Piper Cub is the safest airplane in the world; it can just barely kill you. (Attributed to Max Stanley, Northrop test pilot)

* A pilot who doesn't have any fear probably isn't flying his plane to its maximum. (Jon McBride, astronaut)

* If you're faced with a forced landing, fly the thing as far into the crash as possible. (Bob Hoover - renowned aerobatic and test pilot)

* If an airplane is still in one piece, don't cheat on it; ride the bastard down. (Ernest K. Gann, author & aviator)

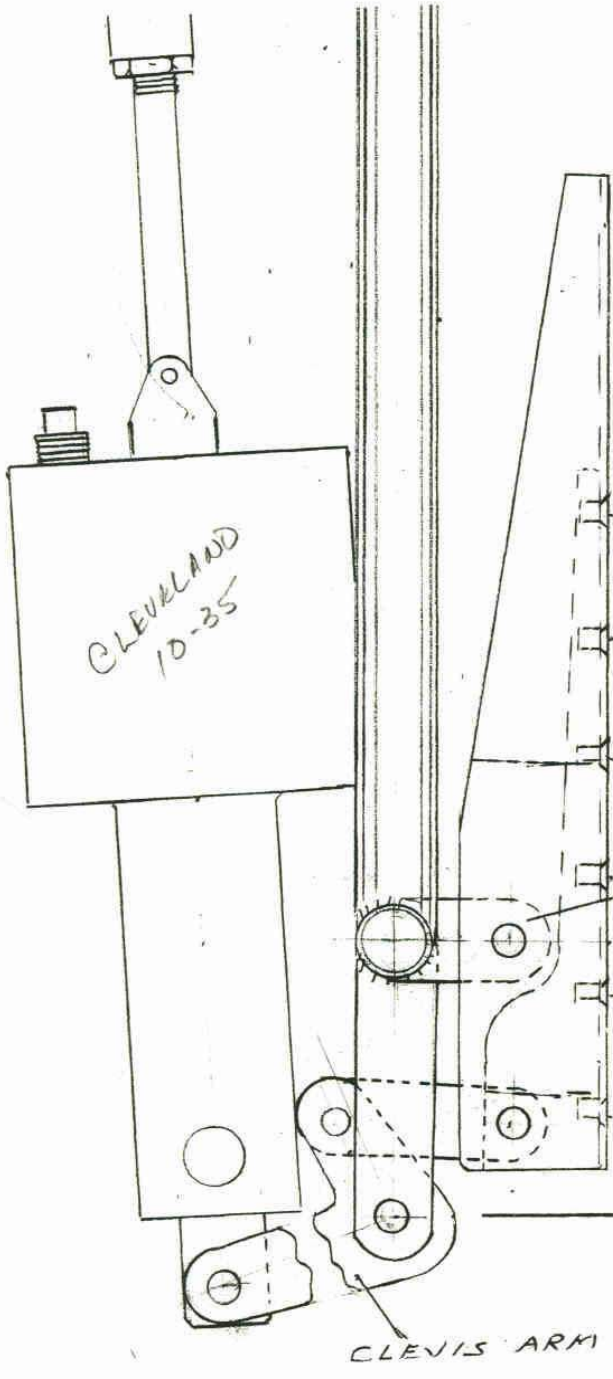
* Never fly in the same cockpit with someone braver than you.

* There is no reason to fly through a thunderstorm in peacetime. (Sign over squadron ops desk at Davis-Monthan AFB, AZ, 1970).

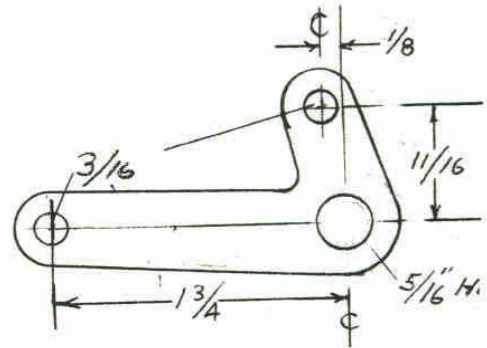
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MODIFIED BRAKE PEDAL CLEVIS ARM

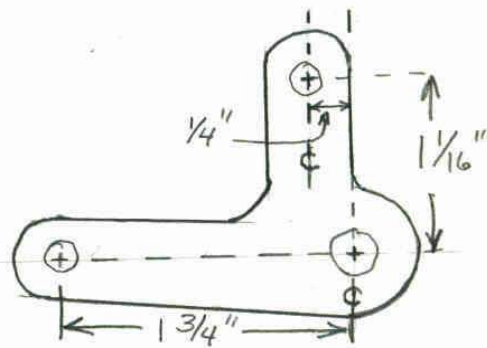
Jim Simmons February, 2004



CLEVIS ARM
.050 4130-CUT OUT



ORIGINAL DESIGN FROM GP4 PLAN DWG #7



MODIFIED CLEVIS ARM DIMENSIONS

FIGURE 1

BUILDER'S UPDATE

Below is Jim Simmons's Weight and Balance information for his beautiful GP-4. Jim says his GP-4 is the heaviest one that he is aware of. It's empty weight being 1325 pounds.

Jim's GP-4 is loaded with goodies which obviously add to the bottom line. Heavier items which added weight to the bottom line (over basic airframe) such as: hydraulic landing gear, autopilot with 2 servo motors, full IFR panel, full interior upholstery and carpet.

N619BS WEIGHT AND BALANCE CHART November, 2003

FULL GROSS COMPUTATION

Datum = Cowl to firewall seam

Weight forward of datum:

	<u>Weight</u>	X	<u>Moment</u>	=	<u>Resultant</u>
Nose wheel	343		15.625	=	5359.375

Weight aft of datum:

	<u>Weight</u>	X	<u>Moment</u>		<u>Resultant</u>
Main wheels	982		33.625		33019.75
Fuselage Fuel (17 gal)	102		12.5		1275
Wing Fuel (37 gal)	222		19.375		4301.25
Baggage	75		66.625		4996.875
Pilot	170		51		8670
CoPilot	<u>170</u>		<u>51</u>		<u>8670</u>
	1721				60932.88

Combine fwd and aft:

	1721		60932.88		
	<u>343</u>		<u>-5359.38</u>		
	2064		55573.5		

Resultant CG Position: 26.92515

GP4 CENTER OF GRAVITY LIMITS

MOST AFT ALLOWABLE LIMIT = 30" aft of datum
MOST FWD ALLOWABLE LIMIT = 22" aft of datum

MOST AFT COMPUTATION

Datum = Cowl to firewall seam

Weight forward of datum:

	<u>Weight</u>	X	<u>Moment</u>	=	<u>Resultant</u>
Nose wheel	343		15.625	=	5359.375

Weight aft of datum:

	<u>Weight</u>	X	<u>Moment</u>		<u>Resultant</u>
Main wheels	982		33.625		33019.75
Fuselage Fuel (17 gal)	30		12.5		375
Wing Fuel (37 gal)	0		19.375		0
Baggage	75		66.625		4996.875
Pilot	170		51		8670
CoPilot	<u>170</u>		<u>51</u>		<u>8670</u>
	1427				55731.63

Combine fwd and aft:

	1427		55731.63		
	<u>343</u>		<u>-5359.38</u>		
	1770		50372.25		

Resultant CG Position: 28.4589

MOST FORWARD COMPUTATION

Datum = Cowl to firewall seam

Weight forward of datum:

	<u>Weight</u>	X	<u>Moment</u>	=	<u>Resultant</u>
Nose wheel	343		15.625	=	5359.375

Weight aft of datum:

	<u>Weight</u>	X	<u>Moment</u>		<u>Resultant</u>
Main wheels	982		33.625		33019.75
Fuselage Fuel (17 gal)	102		12.5		1275
Wing Fuel (37 gal)	222		19.375		4301.25
Baggage	0		66.625		0
Pilot	170		51		8670
CoPilot	<u>0</u>		<u>51</u>		<u>0</u>
	1476				47266

Combine fwd and aft:

	1476		47266		
	<u>343</u>		<u>-5359.38</u>		
	1819		41906.63		

Resultant CG Position: 23.03828

CONGRATULATIONS TO JOHN REINHART ON HIS FIRST FLIGHT !

N233CR made its first flight on Friday, April 23, 2004. The flight lasted 48 minutes. Larry Henney was the test pilot and I was in a Glassair chase plane. Larry is an EAA Tech Counselor, a very experienced test pilot, and races a Lancair (he took 2nd place at Sun in Fun behind his friend in the Poulin Special).

We were right behind him on take-off and the GP-4 puts out a lot of wake turbulence. He retracted the gear after climb out and then flew through his 3 page agenda taking the airplane down to as low as 85 MPH and up as high as 215 MPH. We were on his wing and all around looking for any problems particularly underneath for oil or fuel leaks or fire and none were observed. At the low speeds he performed S turns and found the airplane very stable and controllable. He did this at 85, 95, 105, and on up. He trimmed for level flight and eased it up to 215 where he stopped because he wasn't ready to do the flutter tests and there was a lot of power left to go. He cycled the landing gear 4-5 times and it all worked fine. He eased the handle out of the detent just enough to let the air pressure out of the system but not release the gear. The doors popped open and the gear dropped down about 3/4 of an inch after the uplocks released. That was a ma-

ajor test..the in flight release of the uplocks even though I had tested them in the hangar with 40 pounds of weight attached to each gear leg. At the end, he declared N233CR an excellent airplane with no adverse flight characteristics at all and no other squawks. The final event was the landing and he touched down right on the numbers, the gear held and didn't collapse (these was the first set made by Darry Capps other than his own). We went back to the hangar and removed the cowl and found no leaks except a couple of valve guides which I've know about. The engine used 1/2 quart of the mineral oil, some by the engine and some out of the crankcase
b r e a t h e r h o s e .

He'll fly it a few more times and then I'll take it and fly the rest of the time off. The reason I asked Larry to do this was that he is experienced in testing high-performance airplanes and his skills are far better than mine should anything have gone wrong. I did not fly much while building the airplane other than to keep my license current with BFR's. This year I have done a lot of flying of high-performance airplanes (even have over 8 hours left seat GP-4 time)

(see pictures next page)

FINALLY THE LAST OF THE TID-BITS

* The three best things in life are a good landing, a good orgasm, and, a good bowel movement. The night carrier landing is one of the few opportunities in life where you get to experience all three at the same time. (Author unknown, but someone who's been there)

* "Now I know what a dog feels like watching TV." (A DC-9 captain trainee attempting to check out on the 'glass cockpit' of an A-320).

* If something hasn't broken on your helicopter, it's about to.

* Basic Flying Rules Try to stay in the middle of the air. Do not go near the edges of it. The edges of the air can be recognized by the appearance of ground, buildings, sea, trees and interstellar space. It is much more difficult to fly there.

* You know that your landing gear is up and locked when it takes full power to taxi to the terminal.



GP-4 Fiberglass Parts Price-List (effective 4/1/2004)

All prices are listed in U.S. Dollars

- Tail Cone	\$140.00
- Exhaust Blisters	\$145.00
- Air Ramps	\$145.00
- Cowls	\$1100.00
- Complete Package price	\$1500.00

Shipping cost to be paid by purchaser. Crating costs are included in price and prepaid shipping makes the shipping costs quite reasonable. I try to keep one complete set ready for shipping and will hold the price unless there is a substantial increase in material costs. The construction of these parts are very labour intensive and the West Pro System material is quite expensive so the prices reflect the high cost of production. Prices subject to change without notice, please confirm before ordering.

Available from:

Bob Ringer
114 Woodland Crescent,
Hubley, Nova Scotia, Canada
B3Z 1A9
Tel: 902-876-2871 Cell: 902-483-4611 E-Mail: bobringer@eastlink.ca

Bob is recommended and supported by George Pereira, Osprey Aircraft.

GP-4 METAL PARTS PRICE LIST

<u>Part No.</u>	<u>DWG</u>	<u>Description</u>	<u>Total</u>
GP4-07-01	7,8	Rudder Pedal and Brake Pedal Assembly <i>Does not include brake cylinder or center Mount bracket</i>	530.00
GP4-09-01	9	Sta 78, Control Clevis Idler Arm	44.00
GP4-09-02	9	Sta 132, Control Clevis Idler Arm	44.00
GP4-09-03	9	Engine Mount Brackets (4)	170.00
GP4-12-01	12	Elevator Torque Tube Assembly	165.00
GP4-27-01	27	Left Flap Bell Crank Assembly	167.50
GP4-27-02	27	Right Flap Bell Crank Assembly	167.50
GP4-27-03	27	Left Aileron Mass Balance	48.50
GP4-27-04	27	Right Aileron Mass Balance	48.50
GP4-28-01	28	Landing Gear Retract Bearing Bracket	22.50
GP4-28-02	28	Retract handle Pillow Block (2)	42.50
GP4-28-03	28	Control Stick Pillow Block (2)	42.50
GP4-28-05	28	Pillow Block Plate	27.50
GP4-28-06	28	Spar Plate	17.50
GP4-28-07	28	Walking Beam, Bushing & Brass Plug	167.50
GP4-29-01	29	Pillow Block Plate Frange	13.00
GP4-30-01	30	Control Stick Assembly	175.00
GP4-30-02	30	Control Mount Bar with Welded Brackets <i>Includes pillow block bracket dwg 28</i>	67.50
GP4-30-03	30	Left Aileron Bell Crank Assembly	74.50
GP4-30-04	30	Right Aileron Bell Crank Assembly	74.50
GP4-31-01	31	Landing Gear Retract Handle Assembly	250.00
GP4-32-01	32	Left Landing Gear Truss & Idler Arm Bracket	67.50
GP4-32-02	32	Right Landing Gear Truss & Idler Arm Bracket	67.50
GP4-32-03	32	Aileron Idler Arm (2)	63.00
GP4-32-04	32	Outboard Seat Rail Brackets	10.50
GP4-32-05	32	Left Aft Landing Gear Socket and Plate	95.00
GP4-32-06	32	Right Aft Landing Gear Socket and Plate	95.00
GP4-32-07	32	Rear Lnd Gear Truss Clevis (2)	21.00
GP4-32-08	32	Pulley Clevis (4)	20.50

GP-4 METAL PARTS PRICE LIST

<u>Part No.</u>	<u>DWG</u>	<u>Description</u>	<u>Total</u>
GP4-33-01	33, 34	Left Main Landing Gear <i>Does not include wheel, tires, brakes, or springs</i>	1337.50
GP4-33-02	33, 34	Right Main Landing Gear <i>Does not include wheel, tires, brakes, or springs</i>	1337.50
GP4-35-01	35	Left Retracting Link	147.50
GP4-35-02	35	Right Retracting Link	147.50
GP4-36-01	36	Left Retracting Link Spider	207.50
GP4-36-02	36	Right Retracting Link Spider	207.50
GP4-36-03	36	Left Forward Main Gear Bearing Block	92.00
GP4-36-04	36	Right Forward Main Gear Bearing Block	92.00
GP4-37-01	37	Left Uplock Bar & Clamp	32.50
GP4-37-02	37	Right Uplock Bar & Clamp	32.50
GP4-37-03	37	Left Pivot Link	21.00
GP4-37-04	37	Right Pivot Link	21.00
GP4-50-01	50, 52	Nose Gear Strut & Steering Assembly <i>does not included wheel, tire, brake or nose gear truss (nose gear truss must be made with the engine mount)</i>	1800.00
GP4-54-01	54	Motor Mounts <i>includes pivot truss</i>	1500.00
GP4-56-01	49, 56	Nose Gear Retract Bell Crank & Bracket	155.00
Total:			\$9,930.00

Available From: Raymond Beazley. Tel-902-465-6141 / Cell-902-497-4187

E-Mail: ray1beazley@accesswave.ca

The above parts do not include AN bolts or fittings

All 4130 steel parts will be Heliarc welded and primed with Epoxy paint

A 50% deposit will be required on all orders

Customers to pay all shipping charges, all orders are subject to sales tax

Prices subject to change without notice, please confirm before ordering

Raymond is recommended and supported by George Pereira, Osprey Aircraft.

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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.



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

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

Have an item to sell, or something that you're looking to buy? Send to: gp4@woh.rr.com