

December/January 1981/82

## GLASAIR NEWS

"GOINGS-ONS"

The planes are flying good. We are looking forward, however, to the move from our present location north to Arlington. We're getting "tired" of hitting large rocks (2" or more in diameter) on landing, especially when the rocks knock off the brake bleeders, causing an Unexpected brake failure. The new facilities and landing strip are much needed.

Hopefully we should be completely moved by spring. Much of our time lately has been spent on coordinating the optional kit packages and fine tuning the kit and instruction manual.

## WHAT'S NEW?

It looks like the word is out as to what we're doing in research and development, and to clear up any rumors, we feel it's better at this time that you hear about it first hand. What makes this hard to say is that one either likes what we're doing or doesn't, depending on what kind of purist he is. There is the person who believes that the extra wheel should be on the tail end of the plane and that the "simpler the better" is of the utmost importance. This means that the gear should be fixed, resulting in weight savings, cost, etc. and no attention has to be given towards whether the gear is down for landings. But one has to recognize another kind of purist; the person who isn't content with items that stick out in the wind causing drag, less fuel efficiency, and who wants that special clean cosmetic appeal along with the performance benefits regardless of what it entails. From this you can probably guess what we're working on, namely a retractable tricycle gear that can be fitted to a Glasair Kit. The interesting aspect of it is that we're "purists" in both of these areas, causing us to say, let's try the retractable side to see what we end up with. From the very beginning of the tricycle gear project we wanted the gear retrofitable to all existing kits with the least amount of changes to the existing structure. The tricycle retract configuration lends itself well to this requirement. The major area of concern was to keep the front "D" section of the wing intact for structural rigidity and to keep the natural fuel cell that it offers. Also, we wanted to keep the existing wing controls in their same places so a person could retrofit with the least amount of disturbance if he wanted to change

-2-

over down the road to the retract option from the fixed gear installation. The tricycle gear would offer perfect taxi visibility and ease of landing that is unique to the configuration.

The gear is of the air-oleo design all around. A larger diameter strut was chosen to reduce weight and the pressure needed (around 60 - 100 lbs. on the main gear). Standard 5 x 5:00 wheels and tires will comprise the main gear with the nose wheel also being a 5 x 5:00, using the lower profile Lamb tire. It is felt that the plane will still have good rough field characteristics, especially with a main gear oleo travel of 5-3/4", while still using the 5 x 5:00 wheels. The nice thing about an oleo gear is that it absorbs the energy on landing instead of storing it in a spring system, resulting in a bounce. As a consequence consistently soft, smooth landings should be no problem even over pretty rough terrain. Final testing will tell.

The retraction mechanisms are actuated by hydraulic cylinders which are activated by an electrically driven hydraulic pump. This system was chosen for ease of installation, space limitations, cost, and the least amount of changes in the existing structure. The weight difference is a toss up between the electric-hydraulic and manually operated system, because of the heavy springs that would be needed to give a person the mechanical advantage with a hand operated system.

The nose gear mounts directly to the existing engine mount with only slight modifications and the rudder pedals hang down instead of up to miss the front wheel well. Our thoughts are to offer the oleo gear struts in the completed state, already painted, making the option as easy as possible to install. Block out the landing gear on any picture you have of the Glasair and you'll get the idea of what we're working on. At this time we're still in the developmental stages, waiting until we have one working to give the feasibility, performance numbers, weight, cost, and/or availability. As soon as we know, you'll be notified. If you are serious about this possibility then refrain from putting in the firewall rib and the forward landing gear support rib for the fixed gear. The aft gear support rib is maintained yet with a smaller number of laminates. The wing gets an extra rib in between ribs B and C with other reinforcements. This is accomplished a little easier with the wing open, but we feel it can still be accomplished with the wing closed up by access through the holes cut in the bottom wing panel for the main gear. All other modifications pose no problems. You may not desire to wait for the option, being that the availability is unknown at this time. The retract option might be available by the end of 1982 barring any unforeseen obstacles.

FLUTTER TESTING

With the plane going as fast as it does, and with the possibility of going even faster, a very extensive flutter analysis is being undertaken. This is to further feel out the upper limits of our structure beyond our present knowledge. The flutter testing results will be made known when available.

FURTHER OPTIONS

Another possibility for a builder is the installation of a header tank. We're going to put in about a 6 gallon tank up behind the firewall in the fuselage on the retract. This will give about an hour reserve and the ability to have a visual sight gauge on the instrument panel. We find that we're unwilling to depend on the electric fuel gauge even though it works fine. Another possible way to handle this is the installation of a fuel warning system as offered by Aircraft Spruce. It's an all nylon sensor unit that activates a panel warning light when the fuel supply is low. This results in a back up system in addition to the electric fuel gauge. A header tank appendix will be included in the instruction manual at a later date.

PROPELLERS AND ENGINES

There has been much inquiry in the way of propellers. Our suggestions are to write or call the various wood blade people and get all of their inputs, check their track records, and then make a decision on who to go with. We have worked with the following manufacturers in establishing correct dimensions for the Glasair.

Pacesetter 200, Inc.  
Rt. 1, Box 927  
Hillsboro, OR 97123  
Phone (503) 645-4356

Bernard Warnke P. O.  
Box 50762 Tucson, AZ  
85705 Phone (602)  
887-6116

Ted Hendricson 9917  
Airport Way  
Snohomish, WA 98290  
Phone (206) 568-6792

Great American Props  
555 Westmont Drive  
212 San Luis Obispo, CA 93401  
Phone (805) 481-4450

Also, at the present time, we are working with Hartzell on a constant speed propeller for the retract version because the difference in speed range from the low end to the top end is getting so great. They are making some specially shaped blades for the particular speed range that we hope to obtain, and it also has a built in prop extension. One has to remember that a 0-320 suited for this prop has to have the drilled front port in the case for the oil from the governor pad a place for the governor to mount on the accessory case. All the 0-320's can be set up to use constant speeds except for the following models: 0-320-A2D, E2D, E3D, E2G, E2H, E3H, I0320E2B, AI0320E2B. This means that any of the engines off the Cherokees will work, except for a select few Cherokee 140's that had the E3D in them. The majority of them had the E2A, and the new ones like the Warrior have the D3G which already is 160 hp. The D3G needs a different rear accessory case which has the governor mount machined. These can be found and exchanged when rebuilding the engine.

Another thing to keep in mind if you're looking for an engine and are contemplating the retractable gear option is the placement of the carburetor on the oil sump. The older style sump boxes on the flat or conical mount engines 0320-A, 0320-B, and 0-320-C series place the carburetor too far aft for clearance of the nose gear. The sumps can be changed without too much hassle, but it's better to get the newer style dynafocal mount 0-320-D or E series engines with the correct oil sump box already on. The new style also has the wide cylinder base flanges, which are stronger. Our thoughts are that if you have a choice between engines, pick the one that could be adapted for a retract and possible use of a constant speed propeller, if that option proves to be feasible once we try it. The wood props do work very well though, and the weight and cost certainly speak for themselves. We see every reason to use a wood prop on the fixed gear, and who knows, they may still work at both ends of the flight envelope for the retract. Again, let's wait and see. We'll give you the numbers as soon as they are available.

We have incorporated a listing of the 0-320 engines produced by Lycoming and also the applications they are used on. This listing should clear up any questions as to what type of engine mount is needed, whether the engine can be set up for a constant speed prop, and the type of oil sump.

INSTRUCTION MANUAL STATUS

At the time of this writing, the completed instruction manual is about to go to the printers. Final proof reading, handling, and shipping will need to be done, which could take some time. The completed manual will be made available for \$200.00 sometime in early 1982 for those who desire a manual prior to receiving their kit. Not much can be accomplished on the aircraft with just the receipt of the instruction manual; therefore we suggest obtaining it with the kit. Should you wish to obtain the manual prior to receipt of your kit you will be charged \$25.00, non-deductible from total kit price, to cover handling, processing, and shipping. The remaining \$175.00 will be deducted from the kit cost on the final invoice.

BUSINESS HOURS

Office:	Monday - Friday	8:00 a.m. - 5:00 p.m.
Manufacturing:	Monday - Friday	8:00 a.m. - 3:30 p.m.
Shipping:	Monday - Friday	8:00 a.m. - 3:30 p.m. (Pacific Standard Time)

Although we are closed on Saturdays for normal business, our Maple Valley facility will be open from 11:00 a.m. thru 3:00 p.m. for those who would like to visit the facility and for demo rides (weather permitting, of course).

OPTIONAL PACKAGES

Our list of optional packages has expanded a bit to include a Dual Brake Rudder Pedal kit, extra gas cap, and reservoir for master cylinder, of which two are required. Below is a complete list of the packages which are now available, except where noted. To obtain the items listed, please use the blank order form provided, or make a written request to:

Jim Holman  
c/o Stoddard-Hamilton Aircraft, Inc.  
Production Facility  
19006 72nd Ave. South  
Kent, WA 98031

PH (206) 251-5395 or 251-5288

-6-

All optional packages will be shipped COD unless special arrangements are made. If an advance payment is made to avoid COD charges, please include \$3.50 per item, for shipping and handling. All prices are subject to change.

<u>Optional Packages:</u>	<u>Price</u>
1) 5 x 5:00 Axles and Back up rings (2 Axles S 4 Back up rings)	\$ 70.00 per set
2) 10-19D Cleveland Master Brake Cylinders	\$ 37.00 each
3) 5 x 5:00 Cleveland Wheels \$ Brakes	\$260.00 a pair
4) 4" Propeller Extension with Lugs, S.A.E.-2 Lug diameter of 5/8"	\$145.00 each
5) Wing Tip Lenses -- Colored are standard, but Clear are available at request.	\$ 30.00 per set
6) Exhaust System, Mild Steel (Available in February)	\$255.00 each
7) Sliding. Canopy Hardware Kit (Available in February)	\$115.00 each \$
8) Dual Brake Rudder Pedal Kit (2 Pedals and Hardware)	21.00 each
9) Extra Gas Cap	\$ 37.50 each \$
10) Clear Plastic Reservoir for Master Cylinder (2 Required)	5.00 each

Happy flying and building!!

Stoddard-Hamilton Aircraft, Inc



ORDER FORM

To order optional packages, please fill in all necessary information and send to:

Jim Holman  
c/o Stoddard-Hamilton Aircraft, Inc.  
19006 72nd Ave South  
Kent, WA 98031

SHIP TO:

Name: \_\_\_\_\_

Date: \_\_\_\_\_

Address: \_\_\_\_\_

Serial #: \_\_\_\_\_

\_\_\_\_\_

Phone: ( ) \_\_\_\_\_

<u>Quantity</u>	<u>Optional Packages</u>	<u>Price</u>
_____	#1 5x5:00 Axles & back up rings (2 axles with 4 back up rings)	\$ 70.00 per set
_____	#2 10-19D Cleveland Master Cylinders	\$ 37.00 each
_____	#3 5x5:00 Cleveland Wheels & Brakes	\$260.00 per pair
_____	#4. 4" Propeller Extension with lugs, S.A.E.-2 lug diameter of 5/8"	\$145.00 each
_____	#5 Wing Tip Lenses Colored (standard) Clear (available)	\$ 30.00 per set
_____	#6 Exhaust System, mild steel (available in February'82)	\$255.00 each
_____	#7 Sliding-canopy Hardware Kit (available in February'82)	\$115.00 each
_____	#8 Dual Brake Rudder Pedal Kit (2 pedals and hardware)	\$ 21.00 each
_____	#9 Extra Gas Cap	\$ 37.50 each
_____	#10 Clear Plastic Reservoir for Master Cylinder (2 required)	\$ 5.00 each

\*\*All optional packages will be shipped C.O.D. unless special arrangements are made. If an advance payment is made to avoid C.O.D. charges, please include \$3.50 per item for shipping and handling. All prices are subject to change.