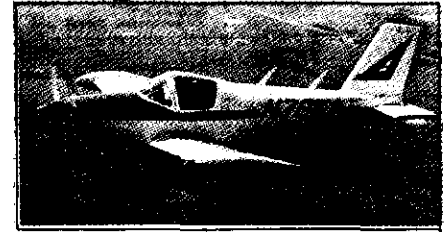




Pat Jansen

PL-1 & 2 Newsletter



NUMBER 53

SPRING 1977

AIRCRAFT DESIGNER

Ladislao Pazmany
P. O. Box 80051
San Diego CA 92138

PL-1 EDITOR

Lee Conlan
7858 Arnette St.
Downey CA 90241

PL-2 EDITOR

Pat Jansen
7712 Telean
Houston TX 77075

NEW SUBSCRIPTION DUE

It is time again to renew your newsletter subscription for the next 8 issues of the newsletter. The new rate will be \$4.00 for the next two years (Outside of the U.S. and Canada please add \$2.00 for extra postage). Send your name and address along with information about your project to:

Pat Jansen
7712 Telean
Houston TX 77075
USA

There has been a good response to the renewal effort already. Your cooperation in sending news in to the editor is what makes the newsletter possible. Thank you for the many newsy letters telling of how your project is coming along.

PAZ SEZ --January 22, 1977

Are you aware that R. Lowell Wood -- Delray Beach is flying his PL-2 #60 since December 22? I quote from his letter:

"it flies beautiful - It is very responsive and also very stable. The propeller you ordered for me seems to be just right. I thank you for your help and I want to add that this is a very fine airplane that you have designed."

Well, one day before Dec. 21 - the RYSON ST-100 "cloudster" - motorglider flew for the first time - Now we have 45 hours of flying - about half of it as a sail plane - It is doing just perfect. No complaints.

Some data on the ST-100: - Gross Weight 1650 - Span 57'8" - folding wings (a la PL-4) - maxfolded: 8 ft - Engine: Cont. 0-200 (100 hp.) L/D max \approx 28. V cruise @ 135 mph.-V stall @ 43 mph. Range 610 miles.

PAZ SEZ

In reference to Mr. J. G. Anthony's comments in the #52 Newsletter, on the use of the Corsair landing gear oleos:

In the first place, the Corsair oleos used by Mr. Anthony and a few other builders are TAIL GEAR units and not main gear. Mr. Anthony

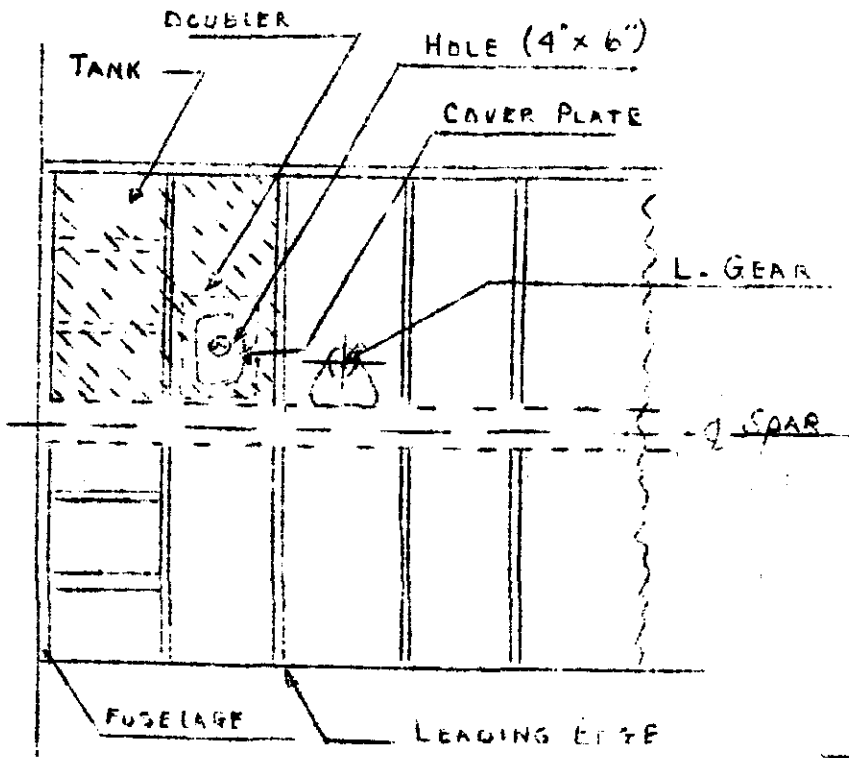


FIG. 1

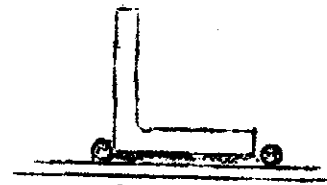


FIG. 4

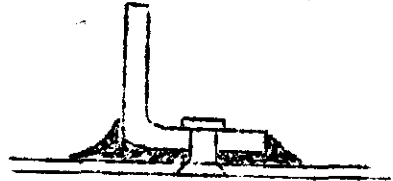


FIG. 5

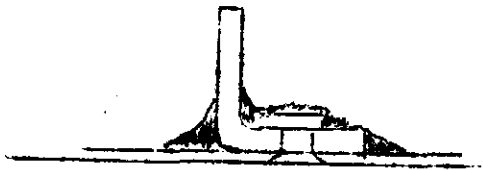


FIG. 6

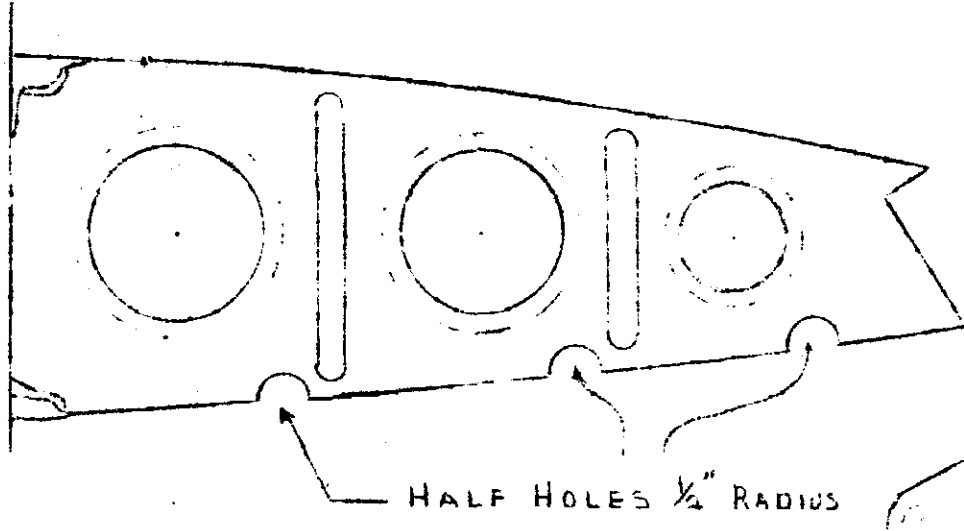


FIG. 2

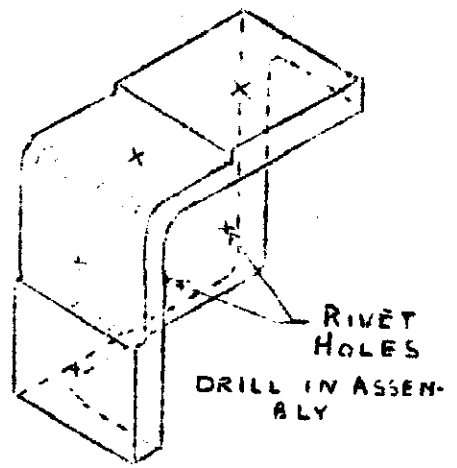


FIG. 3

implies that the Corsair gear which was designed for an airplane 5 times heavier than the PL 1 - PL 2 is stronger. I have to assume he meant: The Corsair tail wheel oleo is stronger than the PL 1 - PL 2 main wheel oleo, which could be a valid statement. Anyway this consideration is meaningless. The Corsair tail wheel oleo should also be stiffer than the PL 1 - PL 2 main gear oleo. Stiffness depends on several factors: Inflation pressure. Ratio of air-to-oil. Orifice diameter. Stroke - etc. A stiffer oleo introduces higher loads in the structure, this combined with 150 hours operation of N4725G from a gravel strip, plus a very hard landing, etc. may cause the elongated bolt holes in the .010 thick aluminum attach. plates.

When I was informed of this "incident" I wrote to the Nationalist Chinese Air Force in Taiwan. They have some 60 PL - 1's operating as primary trainers, the most demanding application for a landing gear. I received a report indicating that they never had any failure or elongated holes in the attach. plates.

Furthermore, there are some 30 PL - 1's and PL - 2's built by amateurs in operation, including the prototype N4180K in service for some 10 years. As far as I know none of these aircraft have any sign of elongated holes in the attach. plates. I certainly would like to know of some one else who has had this problem.

About Al Bartell's request for an integral fuel tank design, which does not leak, I wish I could afford the time to do it. Instead I will enumerate some basic guide lines which I hope are almost as good as a detailed design.

1. Tank should be located between the wing root rib and the rib just inboard of the main gear, An alternate location could be just outboard of the main gear, but I do not favor this one, because it increases the manwise mass moment of inertia and does not help in spin recovery. Tanks should be between main spar and rear spar.
*See Fig. 1

2. Use heavy skins (.040) and heavy ribs (.040) in the tank area. Skin splices should be outside of the tank area. Obviously, no lightening holes at the tank end ribs - Add fuel drainage cut - outs in the bottom flange of intermediate rib. * See Fig. 2

3. Make machined aluminum corner, See Fig. 3 fittings to plug up holes between ribs, skins, spars, plates, etc. Use shims, wedges or any required shape to 100% plug all holes, gaps, crevices, etc. Do not assume that a sealer will do the job of plugging any hole larger than 1/8" in diameter.

4. Use solid aluminum rivets wherever is possible, but if you have to use blind rivets, use the bulbed cherrylocks.

PREPARATION

5. Clean all Zinchromate from every tank component. Use MEK and Scotch Brite pads. This applies to every piece of metal in contact with fuel, and also all faying surfaces of joints.

PAZ SEZ cont.

6. Alodine all parts - Test Alodine effectiveness by adhering masking tape to the Alodined surface. If Alodine adheres to the tape, clean the Alodine with water and scotch brite pad. Wipe out aluminum powder and Alodine powder with clean cheese cloth. Re-apply the Alodine -**ATTENTION**- Alodine coat must be very light (transparent). If Alodine is thick (brown), is no good.

7. Fuel resistant (F.R.) prime all parts in contact with fuel. Use Epoxy Polyamide primer, apply with a spray gun. The Military Spec. is MIL-P-23377C. Class II - One commercial product which meets this spec is Fuller O'Brien - 162-Y-27/375-C-44. This is a two component, yellow, catalyzed epoxy primer.

SEALING

8. Clean all surfaces with Solvent MIL-C-38736-Formulation Aromatic Naphtha: 50% - Ethyl Acetate: 20% - MEK: 20% Isopropohy Alcohol: 10%. (all parts by volume).

9. Use Sealant MIL-S-8802 Class C-40 (40 hours cure) on all faying surfaces. Apply sealant with brush. One Commercial product which meets this spec. 13 PR-1422 A-2 made by Products Research & Chemical Corp., 410 Jersey Ave., New Jersey 08030. This is a two part, poly sulfied, liquid polymer compound. Cures at room temperature.

10. Apply extra bead of PR 1422 A-2 along the edges of joints, such as rib/spar web etc. See Fig. 4.

11. Assemble all parts, not that a fillet will form at each faying surface. Dip all rivets in the sealant before installation. See Fig. 5.

12. With an acid brush (cut down to about 1/4" long bristles) apply filleting sealant PR-1321 Class B (made also by Products Research) which meets MIL-S-8784A (1). Use the B-2 type which has 2 hours pot life. All rivet heads, corners, etc. must be coated. See Fig. 6

13. Top coat all joints with PR 1422 A-2

Each tank should have one access panel on the top skin (see fig. 1) (clear opening size: 4" x 6". The cover plate should be attached to a skin doubler (.050) with screws (MS24694-C13) and sealed nutplates (NAS 147343) Locate the filler neck and gas cap in the center of the cover plate. Use flush type gas cap. You may try these two suppliers:

A. Aviation Products Inc.
114 Bryant
Ojar, California

They have only one type
aluminum 2.6" openings
looks good - \$18.00

B. Shaw Aero Devices Inc.
Industrial Road
East Hampton
Long Island, N. Y.
11937

This firm has many different
Types, Request catalog,
use a light one.

PAZ SEZ cont.

4

For fuel sender and gage you may try the excellent unit developed by PL-2 (N72KA) builder Kenneth Arnold of 1125 Grand Ave, Kansas City, Missouri, 64136 (816) 363-1525

ERROL JANSEN'S PL-2 186 now has the wing skinned, tip tanks finished, flaps and ailerons installed, landing gear installed, vertical fin, rudder, and stabilator installed. In April he will mate fuselage to wing. He is working now on the engine mount for his zero time overhauled O290 D LYC. Errol needs the plexiglas nav light covers for tip tanks. If anyone has two extras to sell please contact him. Address - 77;2 Telean, Houston, Texas 77075.

A. B. WERTZ, 644 W. 7th St., Plainfield, N. J. 07060 writes
Would you list these pieces which I have for sale in the PL-2 newsletter if you have room.

Drawing #2-60-003
39 Adapter 2 pcs
71 scissor 1 pc.
55 upper scissor 2 pcs
53 lower scissor 3 pcs
29 lower bushing 3 pcs
27 upper bushing 3 pcs
21 piston 3 pcs
19 piston sleeve 3 pcs

All per drawing specifications

NEIL CATHCART, c/o Western Precision Industries, P.O. Box 1480, Garden Grove, California 92641

I am in the process of buying plans to build the PL-2 and would appreciate getting on your mailing list for the PL-2 Newsletter.

I own a small fastener distribution company here in southern California, furnishing MS, AN and NAS type hardware.

We are selling bolts, nuts, washers, rivets (cherry type). We feel we may be able to obtain fasteners that other builders are currently using at a considerable savings. We furnish fasteners in large quantities to such prime contractors as Hughes, Rockwell, Northrop etc.

LEE CONLAN, 7858 Arnette St., Downey California 12/3/76
Just received your newsletter...It looks like a few Paz builders are getting rid of their flying projects.

I couldn't make Darrell Radford's fly-in...It seems that you are still going to write the PL-1/2 Newsletter. I'll still help you with the PL-1 Section and will furnish pictures if you send me some. I'm writing this on the back of my last picture sheets I have on hand and if you send me a few new pictures to go on this side I'll have them printed and send you the stack for the next issue.

Comment: If Al Bartell PL-2 #27 is interested in wet wings he should contact John MacDonald PL-2 #104 c/o DESCO MFG. Co., 1530 Flower St. Glendale Ca. 91201. He has both type designed and built into his PL-2. I've seen a lot of Paz projects, but without a doubt this project of John's is the best of them all as for quality and craftsmanship. I've built a lot of PL-1 & PL-2 tip tanks and I've

LEE CONLAN cont.

5

yet to have any of them leak if you do it correctly. We have a set on a Comanche also, and they do two things; one-provide safe fuel storage and more important improve the flying characteristics of the plane. Improves the slow flight control and really cleans up tip vortices. We had the Comanche down to 55 knots without falling out of the sky. Also it flies faster. My tip tanks are over 14 years old and they have never leaked. Sometimes fuel will come out of overflow due to steep position and incorrect vent line termination inside of tank.

P.S. Out Varieze is 80% complete. Total building time 3 mos

HOMEBUILDERS AIRCRAFT ASSOCIATES
7858 Arnette St, Downey Calif. 90241

Effective Prices Jue 1976 F.O.B.

PL-1 -- PL-1
Bulletin FG-1

(PL-1 Fiberglass Parts)

1-20-003-R Stabilator Fairing \$8.00
L " " 8.00

Set---\$11.00

1-20-002-1 Rudder Fairing \$11.00
1-20-001-1 Vert. Fin Fairing W/Strobe Mtg. \$25.00
1-20-003-1 Horz. Stab. Fairing - Pair-- \$25.00
1-40-006 Carb. Air Scoop \$30.00
1-30-007-TC Tail Cone Fairing (Lower 1/2) W/Nav. Lite Mtg. for
two lights \$45.00
1-50-002-MB Mass Bal. Fairing Pair \$10.00

BULLETIN WC-PL-1

(PL-1 Plexiglass Parts) Packaging charge \$5.00 extra

W1-30-004 Windshield--One piece - Tints: EZI, Gray, Clear \$65.00 ea.
C1-30-004 (x) Canopy-Halves, Right or Left Ea. \$75.00
(x) STD. Tint Pair--\$110.00 EZI, Gray & Clear
WCL-30-400 Windshield & Canopy Set Complete in Clear or STD tints:
\$150.00 - Crating charge \$5.00
PL-1 Slide Rail Set (Alum.) \$65.00

BULLETIN FG-2

(PL-2 Fiberglass Parts)

2-20-003-1 Horz. Stab. Fairing - Pair--\$25.00
2-20-001-31 Vert. Fin Fairing \$20.00
2-20-002-23 Rudder Fairing \$6.00
2-10-011-91 Flap Handle Cover \$18.00
2-30-004-9F Canopy Frame \$235.00 (Including crating)
2-30-009-7 Tail Cone Upper \$45.00 Tail Cone Lower \$45.00
2-80-007-49 Air Vent Molding Pair--\$20.00
2-80-001-49 Air Vent Exhaust Pair--\$20.00
2-10-011-47 Console Fairing \$18.00
2-10-013-7 & -8 Wingroot set \$100.00 Packaging \$10.00

BULLETIN WC-PL-2

(PL-2 Plexiglass Parts)

Packaging charge extra \$5.00
W1-30-004-7 Windshield one piece - STD. Tints EZI, Gray, Clear \$65.00
C1-30-004 (x) Canopy Halves - Right or Left Ea. \$75.00 (x) STD. Tint
or Clear Pair \$110.00
W2-30-400 Windshield & Canopy Set Complete in Std. Tints or Clear
\$150.00 Crating \$5.00

PL-2 Plexiglass Parts 6
Homebuilders Aircraft Associates
PL-2 Side Rail Set (Alum.) \$65.00

BULLETIN FG-3

(PL-1/PL-2 Wing Tip Fuel Tank Kit)

KIT "B" 1. Fiberglass parts per Dwgs.
2. Mechanical parts per Dwgs.
3. Starter Kit W/HAA Constr. Guide. Total 302 pcs.
KIT "B" price \$365.00

Optional Accessory Kit:

1. Plexiglass Lens & Nav. Lights
2. Fuel Sensors (2)
3. Door Latches (4)

10 piece Kit price -- \$65.00 (Packing charge for above kits) \$10.00

Complete Assembled PL-1/PL-2 Wing Tip Fuel Tank Set - \$795.00
Crating \$25.00

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All orders Cash/ Check or Money Order with order. Orders will be acknowledged by letter with estimated completion date. Orders will be shipped C.O.D. for freight charges. California purchasers add 6% Sales Tax

WALT LANGENDORF, 10 Elm Lane, Stony Brook, N. Y. 11790 1/14/77

Enclosed is a print of J. G. Anthony's PL-1 taken at Chapter #3's fly-in at Brookhaven Airport on Long Island, N. Y. in 1973.

Mr. Anthony gave me a good look at his landing gear installation during the fly-in and what I saw convinced me that I should do the same. (See print of my landing gear enclosed) I have talked with two Marine and one Navy WWII pilots in my office and they all agree that Mr. Anthony's statement is correct about carrier landings. They have seen the fuselage skins buckle so you could lay your arm in the wrinkle from hard carrier landings but the tail and main gear was in good shape.

I am getting back to work on my PL-1 after a 18 month lay-off and expect to make good progress in the future. All details made, all steel parts completed and some sub assemblies have been completed.

I have made many spare PL-1 parts which I would like to trade if possible, they are as follows:

1. Constant Cord Rudder Ribs: Complete Set
2. Vertical Fin Ribs: Complete Set
3. Cockpit Area Wing Ribs: BL-9.60 right & left, center rib plus doubler
4. Fuselage Frame: Station 205.00

Some parts that I could use for my PL-1 are:

1. Windshield & Canopy
2. Tail Cone Fairing
3. Mass Balance Fairing
4. Carb. Air Fairing

KENNETH AND MILDRED ARNOLD, ARNOLD AIRCRAFT & AVIONICS, INC.,
 9415 Madison, Kansas City, Mo. 64114, AC 816, 363-1525 1/4/77
 We missed you guys at the 1976 meet in Oshkosh. Hope that you can
 make it this coming year.

We are in San Diego at the present time, but will be leaving for
 home later this week. We had the privilege of seeing the initial
 flight of the new plane that Paz has designed for Ryan, and it was a
 beauty. They now have about 20 hours on it.

Kenneth has not started his wet wing as yet. He is still studying
 the methods and ways of making it. In addition to just pattering
 around with our plane, revamping the cowlings such as making a new
 one, he has developed a quantity fuel gauge for the PL-2 and PL-1,
 the complete installation of which consists of a sender for each
 tank and a meter for each tank to show the quantity of gasoline in
 each tank to the gallon. We have had it in our plane for the past
 year and are quite pleased with it. Also, have one installed in
 the Ryson, Paz's design as described above, They tell us it is
 quite accurate.

The sender is contained in an aluminum structure which is approxi-
 mately 12.6 inches long, 0.4 of an inch thick, and 1.5 inches wide.
 It mounts vertically and is secured to the bulkhead and plate of
 the PL-1 and PL-2 tank exactly like the sender shown in the PL
 drawings. In other words, you can remove the sender you may have
 installed already and secure the new sender by the same screws and
 into the same nutplates which you have used on the old sender.

There is a meter for each tank. Each is 1.5 inches in diameter. The
 face is divided into 14 units. Most of the PL tanks hold 14 gallons,
 but in any event the meter may be calibrated in any way you wish.

The unit works by the use of a magnet in the float, reed switches,
 and an electronic delaying circuit. Kenneth is in the process of
 getting a patent on the devise.

The advantages, without any increased weight, are as follows: It is
 accurate within one gallon; it will give an accurate reading even
 when the aircraft is in violent turbulence, and the pointer will
 not move up and down even though the float is moving quickly up and
 down; it should have a life of many times the life of gauges now
 used in aircraft; and its accuracy is not affected by variation in
 the battery voltage. Kenneth made one test unit which ran contin-
 uously over a month, which involved more than two million operations
 without any failure. Right now the present price for the complete
 two units is \$75.00.

Dave Thomas at Oshkosh has installed the system in his plane, and he
 writes that he is quite pleased with it.

Just thought that you might want to know about this and perhaps pass
 it along to other readers of PL-1 and PL-2 newsletters.

PIERRE A. HABERLI, RD #s Selinsgrove, PA 17870
 Most of T-) part of the wing ready for H.T., if I can find somebody
 in PA. to do it.-Tail section 75% finished.-Landing gear 50%.-Will

start fuselage this summer, bought frame & some parts from McFarland, I recommend them for craftsmanship & promptness.

LARRY BEATY, 439 W. 49TH ST., Indianapolis, Ind. 46208

I have been considering a wet PL-2 wing construction & would like to write or call John McDonald to learn of his wet wing. I am curious about :

1) would you mind passing his address along to me?

2) Have you considered a "Builders Directory" with addresses?

I enjoy and profit from each of your letters and hope to meet you and other builders at my first Oshkosh in 1977.

DUANE SEYMOUR is back in the "states" now. In a previous newsletter his canopy slide breaker, seals to prevent moisture leakage, and other ideas were mentioned. Duane's new address is 892 Catalina Dr., Newport News, Va. 23602 EAA 13513 PL-2 25

HELP

Can anyone give us the new address for Gary Perry, Rt. 5 Bristol, Virginia 24201. His last newsletter came back to us marked forwarding address expired.

J. B. NEISWONGER, McFarland Aircraft Co, P. O. Box 1353, Springvalley, Ca. 92077 1/17/77

Sorry I can't claim much progress this last year on my PL-2. I have been so involved getting out parts, I can't work on my own. I have come out with a removable instrument panel, which should improve working behind the instruments. Mr. Campbell, who took over Mr. Poston's project is coming along real good and should be in the air next summer. He is working on it at our McFarland Aircraft Shop here in Spring Valley, Ca.

The catalog from McFarland Aircraft lists almost the complete PL-2 sheetmetal formed parts, compiled from the list of building materials of each of the 48 blueprints. Original tooling is used for most parts and all parts are trimmed or blanked out, hand burred and polished, then the blanks are formed by a brake, hydropress or handformed. For the surface treatment, a hot Alodine bath followed by two coats of zinc chromate primer and the part number is then painted on. Metal kits are available if you have trouble locating material. The OSL kit has the odd sizes and thickness used in construction; the BRL kit has blank wing and tail ribs, ready to burr and form.

FRFD BONFFARD, Box 802 Maple La. Mattituck, N. Y. 11952 1/16/77

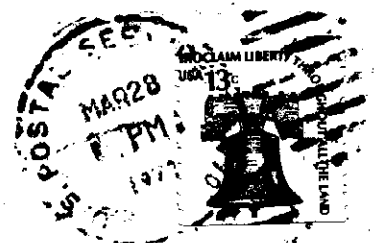
Work on project has progressed as follows:

The vertical fin & rudder & stabilator are complete. Fuselage is 90% complete. I am presently working on the wing. Spar is complete & I've started assembly. All nose ribs are complete. Made up a simple jig for drilling spar & angles to connect ribs & angles to spar so it is a simple matter to assemble & have all edges & distances come out correct & square etc. All angles & ribs are interchangeable.

FROM THE EDITOR

When you send your address for your subscription renewal be sure to send a note, telling how you are progressing on your project or any questions you have, or anything you have for sale or anything other builders might be interested in. Mimeographing of the newsletter is done (for free) by Henry Jansen (Errol's father) who is retired and living in Hunt, Texas.

Pat Jansen
7712 Telean
Houston TX 77075



FIRST CLASS

LADISLAO PAZMANY
P.O. Box 80051
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