

HAROLD E. SPONAUGLE

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PHONE: (305) 567-6173

PL-1 & PL-2 Mutual Aid Letter #34

Dear Fellow Builders:

Our bird is flying very well indeed. We have logged approximately 12 hours, to date, and have made no major adjustment. We did however note that the Carburetor Drain Plug, which is located very close to the Nose Gear Cylinder, will eventually touch the Cylinder and cause a very disturbing knock. This could also be very dangerous if bumping and knocking were to continue. It could eventually cause breakage of the Carburetor. We are replacing this plug with a very short or stubby plug to provide maximum clearance.

We did note an error in our Weight & Balance Sheet published in "Letter" #33. Our friend, Mr. Anthony, also called this to our attention. We are publishing a correction and we suggest that if you keep this data, please glue the attached revision over the data in "Letter" #33 so you will have accurate data. OK?

Those of you interested in a good heat-treat company may wish to contact Industrial Heat Treating, Indianapolis, Indiana. Phone (317) 924-4321. They are F.A.A. certified and will furnish a document of proper treatment after they do your parts. Our good friend Dr. Bruce Carmean, PL-2 #75, 226 Bayshore Drive, Decatur, Ill., 62522, was kind enough to provide this information.

I had a recent discussion with Mr. Pazmany relative to Spinning of the PL-1 or PL-2. Paz has recommended that no one attempt to spin your ship. This applies to all Pazmany PL-1 or PL-2's, even if you plan to have a professional Test-Pilot run such tests. This warning stems from spins attempted by the Chinese Nationalist where some difficulty was experienced. Paz will have further information at a later date relative to this matter. Again, do not attempt spin tests until full information is made available.

Ron Sands, Box 15, Temple, Pa., 19560, recently dropped us a letter relative to fuel gages, he has available. Although they are not suitable for PL-1 or PL-2, they are very satisfactory for other homebuilt aircraft. If interested, please contact Ron direct. We might add that Ron is still not able to return to work. ( Refer to Newsletter #26)

Harley D. Reynard, 5249 39th St. So., St. Petersburg, Fla., 33711, PL-1 #145, has some PL-1 parts for sale or trade, as follows: one set Spar Plates, (.080, 2024-T3) and a complete set of fuselage longerons in splice length. He needs a set of leading and trailing spars for the PL-1 Wing. Contact Harley direct, if interested in buying or swapping.

\*\*\*\*\* Helpful Hints \*\*\*\*\*

Jack Lough, PL-2 #15, 172 Boniface Ave., Kitchener, Ontario, Canada, and his friend Tony Haeger, has a good suggestion for a "One-sided, One-handed Dimpler" you may be interested in checking out. See photo page for further data. Thanks fellas for passing this information along to all of us. True builder-spirit!!!

One of our newer members, Mr. Charles Walker, 2914 Quinton, Shreveport, La., 71109, (We don't have his PL model nor #), wrote to us with this information. Silva Hardware Company, 107 Walnut Street Philadelphia, Pa., 19106, can furnish various aircraft tools at a very good price. Thanks for the tip Charles. We understand that a catalog of such tools is available and can be obtained by sending 50¢, with your request to the company.

Charles is also interested in hearing from any builders in or around his area who might be interested in ordering from companies together. He feels that in a quantity order there is the advantage of a better price. Interested? Contact Charles direct at above address. By-the-way Charles, welcome to our fine group!!

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We had a letter from Leif Rasmussen, General Delivery, Lethbridge, Alberta, Can., which required an answer. We did answer this man, but the mail was returned to us. Any of you builders in Canada know Leif please explain the situation and tell him to send a more complete address. Sure would appreciate it very much.

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Congratulations

Did you notice the cover page of the October issue of "Sports Aviation" magazine? Sam Pawlowski, PL-1 #108, you sure have a bird to be very proud of. Is it any wonder that Sam took the "Grand Champion Homebuilt Award", "Mechanix Illustrated Award", and the "Pazmany Award" for the best PL-1 or PL-2. Again Sam, we add our congratulations to you for a job of excellence!

ONE-SIDED, ONE-HAND DIMPLING

In dimpling our "Zemany U-2" outer skins one thing became apparent. The common methods of aircraft dimpling, seemed very tedious and even inferior to the ideal.

- The common methods referred to are:
- (1) Using male and female dimpling dies, either inserted in the "throat-limited" squeezer or struck with some form of hitting hammer.
  - (2) Using the female die a skin, but using the actual die (1000, etc.) rivet as the male die and hitting with a pneumatic flush rivet gun.

Some disadvantages with these two methods are:

Method 1: Throat or excess limitations, and most important, a hole filling deficiency. Since the hole in the sheet must be made large enough to insert the nominal aircraft rivet (eg. 1/8" plus manufacturing tolerances, the final dimpled hole ends up about 1/64" larger than the nominal 1/8" dia. Using standard male and female dies, it is said to avoid this because the male "pilot" is said to be smaller than the nominal. However, all our "standard" aircraft dimple die sets had a pilot size identical to that of the rivet. With all these disadvantages in mind, we got our heads together and designed what we call "one-sided", one-hand dimpling; see illustration enclosed.

Method 2: Throat or excess limitations, and most important, a hole filling deficiency. Since the hole in the sheet must be made large enough to insert the nominal aircraft rivet (eg. 1/8" plus manufacturing tolerances, the final dimpled hole ends up about 1/64" larger than the nominal 1/8" dia. Using standard male and female dies, it is said to avoid this because the male "pilot" is said to be smaller than the nominal. However, all our "standard" aircraft dimple die sets had a pilot size identical to that of the rivet. With all these disadvantages in mind, we got our heads together and designed what we call "one-sided", one-hand dimpling; see illustration enclosed.

Using a standard U.S.V. Corp. #33102 hand "Pop" rivet tool (used for normal aircraft "pop" rivets), home-made male and female dimple dies which take about 1 hour per set including hardening to make, and a plain finishing nail; we have a handy tool to make 3/32" and 1/8" dia. dimples beautifully, and easy too.

One pulls up on the dies by squeezing the tool in the normal fashion until they meet the sheet and back, producing a perfect dimple. In our first 1000 3/32" dia. dimples these dies showed absolutely no wear and we went through about 20 miles (see chart) which break after countless dimplings of the tool grips. We considered a special "pilot/mandrel" to avoid this, but dropped this idea when we found the local hardware store sells 1 lb. of 1 3/4" long finishing nails (1000 approximately) for about 33¢ a 10¢ fine supply! The proper dia. common or box nail may also be used, but the finishing nail has more head along the "shear plane" and break in the shank (later) while the flat head type break sooner by the head shearing off. This "break-off" feature is no problem in the common .015", .025" or .032" aircraft skin thickness, and actually is a safety feature which protects the pulling tool. For those proficient in thread cutting, making the male die part of the nose piece eliminates one loose piece. For the penny-watcher, even the "department store variety" of "pop" tool will work but only for the 3/32" size.

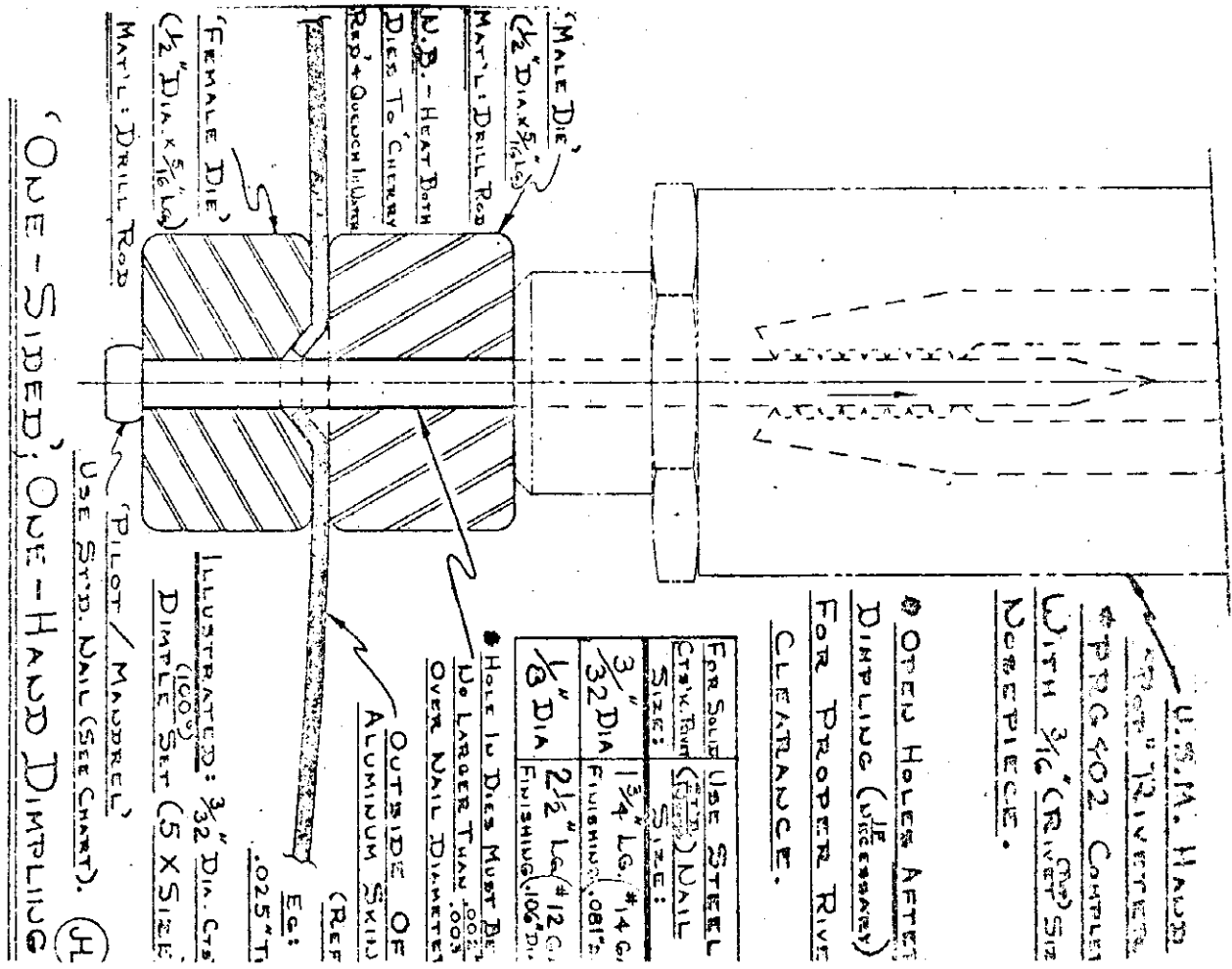
Submitted by: Tony Hoeger  
and  
Jack Lough (E6A14677)

C.G. SOLD FLIGHT

ITEM	WEIGHT	ARM	MOMENT
EMPTY AIRPLANE	1016	65.83	66883.2
PILOT	170	82.00	13940.0
FUEL	150	74.15	11122.5
OIL	11	27.60	303.0
TOTAL	1347	68.42	92242.3

C.G. MAX GROSS WEIGHT

ITEM	WEIGHT	ARM	MOMENT
EMPTY AIRPLANE	1016	65.83	66883.2
PILOT/PASSENGER	340	82.00	27880.0
FUEL	150	74.15	11122.5
OIL	11	27.60	303.0
BAGGAGE	40	100.00	4000.0
TOTAL	1557	70.77	110185.3



U.S.M. HAND  
"POP" RIVET SET  
#33102 COMPLETE  
WITH 3/16" RIVETS  
NORPELCE.

OPEN HOLES AFTER  
DIMPLING (IF NECESSARY)  
FOR PROPER RIVET  
CLEARANCE.

FOR SALE	USE STEEL
CRK. BAND	(FINISH) NAIL
SIZE:	SIZE:
3/32 DIA	1 3/4 LG. #14 G.
1/8 DIA	FINISHING .0812
	2 1/2 LG. #12 G.
	FINISHING .1002 DIA.

MALE DIE  
1/8" DIA. x 5/16" LG.  
FEMALE DIE  
1/2" DIA. x 5/16" LG.  
MATERIAL: DRILL ROD  
PILOT / MANDREL  
USE STD. NAIL (SEE CHART).  
ONE-SIDED; ONE-HAND DIMPLING

Hole in Dies Must Be  
No Larger Than .002"  
OVER NAIL DIAMETER

OUTSIDE OF  
ALUMINUM SKIN  
(REF)

ILLUSTRATED: 3/32" DIA. CRK.  
(100%)  
DIMPLE SET (5 X SIZE)

EG: .025" T

\*\*\*\*\*Interesting People\*\*\*\*\*

Al Bartell, PL-2 #27, 1153 E. 168th Street, Cleveland, Ohio, 44110, is a married man with two lovely children. He has one of each, a boy and a girl. I am sure he must have a wonderful wife, as she is putting up with him building his PL-2 in their basement! Not too easy for a gal to forbare.

At the age of thirty four, Al has his Student Pilot Rating. He has about 30 hours in a Cub and 10 hours in a 150. The EAA Chapter he belongs to is #325. They seem to be a real working group. There are all sorts of planes being built by the members, such as: Baby Great Lakes, Cavalier, Jungster, Fly Baby, and two PL-2's.

As is a Cement Mason, by trade, and likes photography and woodworking as hobbies. You sound like a swell guy Al, and I'd like to meet you personally some day soon.

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Special Note To All Builders

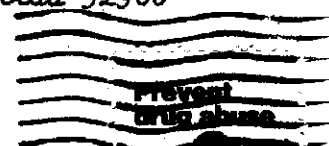
We are badly in need of photographs, color or black and white, of your project. It doesn't have to be a finished airplane, matter-of-fact the photos of your project in progress is what the other fellows are interested in. Let's all get down to some serious photo taking and start sending in some to your editor so we may all see what you are doing. This is most important if we are to keep up interest in our Mutual Aid Letters. Remember fellows, regular photo size is all we can use. No large, full page blow-ups, please.

That's about it for this time fellas but we do hope you all have a very nice Tom Turkey dinner for Thanksgiving.

Sincerely,

Harold E. Sponaule PL-1 #302  
455 19th Street

Vero Beach, Florida 32960



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Box 10051  
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