

Pazmany Newsletter  
Number 64

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PAZMANY PL-2

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EDITORIAL COMMENT: Time certainly flies and I see that we are way behind in getting another newsletter out. It has been a long, cold winter with very little snow and PL-2 #110 C-GQUK was grounded while the tanks were removed, stripped and a great deal learned about the propensity of gasoline to find its way through even the slightest porosity. They were carefully each checked at 3.5 P.S.I. and even then soap and water were found inadequate to spot the places where fuel had caused paint blistering over rivets at the joint lines. Probably helium leak testing is the way to go. Anyway they have been repaired, resealed, repainted and have a further 35 hours' flight time and two months on the ground. Only one small new leak has appeared in an area free of seams. The aircraft now has about 235 hours' flight time and has given very little trouble beyond the normal routine maintenance items.

Paz has issued engineering change # 5 which details a number of small changes to drawings which will facilitate construction. Much more importantly he has designed a new set of spar caps which can be built up from 2" x 0.080 sheared aluminum strips. The extrusion price and delivery were becoming major handicaps to prospective builders. The new design will allow a builder to construct his entire wing with little delay for materials at much lower cost than the extruded design. He has had to produce an additional set of drawings for all the parts and assemblies mated to the new spars but their cost is a very reasonable \$50.00 (U.S. and Canada). The spar cap materials may be obtained pre-cut from Aircraft Spruce and Specialty directly for approx. \$400.00: P.O.B. 424, Fullerton, Cal. 92632. Congratulations to Paz! The extrusions were becoming an achilles heel and I was genuinely concerned about the future of this fine little aircraft.

FRANK KREUZER, 71 Lister, Hamilton, Ontario, L9B IEI, completed his PL-2 late last year and passed his final inspection as winter set in. Then he found he had some small snags electrical, radio, etc., which prevented flight testing at his busy home airport ( Mt. Hope). The unheated hangar was far too cold to accomplish any winter work so he waited for better weather. Finally, on April 22/80, he made his first flight in C-GQUS. Over the week he made several more flights and by the weekend he had over 5 hours in the logs including a forced landing at a small grass strip. Frank was switching tanks at an altitude of about 2500 feet and just as the selector was in the mid-position the handle broke off clean! No grip, no fuel, no power, no place to go but down! Fortunately no harm was done except to a dog who obtained a bruise on attacking Frank as he went for assistance near the vacant airstrip. No one was around so he finally used a small rock to move the valve to the full tank position so he could fly back to his home field.

The following weekend we had Canada's largest gathering of Pazmanys at the EAA Hangar at Hamilton (see photos) when we flew in from Windsor and Ross Whitney from London. We wish Paz could have been present as we lined up for photos: C-GQNW (Ross), C-GQUK (Dave), C-GQUS (Frank):

If Frank flies off his time quickly enough he will do his very best to fly to Oshkosh '80. Perhaps all three of us could line up our little formation at Oshkosh this summer. I have never been to Oshkosh and really should make the flight as we are only 500 odd miles away. Accomodation is always the big problem at large gatherings. Sleeping bags under the wings may be very romantic but not terribly practical!

ROSS WHITNEY, R.R.2, Lambeth, Ontario, had more than one reason to fly to Hamilton for our Pazmany Photo Taking Exhibition. He had installed a transponder VOR and new transceiver to better find his way on his travels. Just as I had done last year, Ross had Dennis Grantam of Lectron Avionics complete all the final installation details and finish the electronic work. Over the winter, Ross also removed his converted Lycoming O290 GPU engine and installed a zero time Lyc 0-290-D2. The GPU had been 100% reliable but had always been prone to mysteriously high oil consumption unless the crankcase was kept low on oil. The GPU Engine had solid lifters and tended to be noisier than the hydraulic lifter equipped 0-290-D2 engine. He found, as I had, the McCauley AGM-7057 prop was OK on the old unit but too fine on his new engine, and had it repitched to AGM-7063 (70" did 63" pitch). Frank Kreuzer has an AGM-7058 prop on his Lyc -0-320 I50 hp engine and it also is much too fine. He does have a I700 FT./MIN. climb rate but his cruise at 2350 RPM is only at about I6" manifold presssure at 3000 feet.

J.P.VAILLANCOURT, 73 Weldon Street, Moncton, New Brunswick, EIC 5V9, would like advice on the best prop for his engine/PL2 combination. He has a zero time Lyc 0-320-A2A. Someone out there must have a good answer and it would be appreciated if they'd send word to J.P. in Moncton. With a I50 hp Lyc it might be possible to install a constant speed prop and wheel pants to raise the aircraft's cruising speed and fuel efficiency even further. Centre of Gravity considerations would also become part of the equation's many variables. Ross Whitney and I have considered a joint wheel pant project but have heard they have minimal effect on cruising speed. Does anyone have any good data on this and the prop subject? It would be valuable as part of the next newsletter.

DUANE SEYMOUR, 210 Rue Grande Lake, St. Louis, Mo. 63367, has found himself boxed into a landing gear problem and needs to swap some parts. Duane planned to use landing gear struts built from converted Corsair dampers. He had them converted and found his 500x5 Gerdes wheels cannot be used on the Main Gear conversion. Gerder wheels are 3.70 inches wide at the hub compared to 3.20 inches for Goodyear. The use of the Corsair parts at least for main gear appears to require the use of Goodyear wheels. The nose gear is not a problem as the cups are merely reduced in depth to compensate. In any case, Duane is looking for a set of Goodyear main wheels 500x5 Part Number 9532101 and brake assemblies P/N 9532302. He offers his pair of brand new 500x5 Gerder wheels in trade. He also offers advice to anyone building landing gear: be sure your landing gear/brake combination is compatible with the proposed design. Duane's problem is similar to anyone's where minor changes are contemplated. I found the Pazmany is so compactly and carefully designed there was very little room anywhere for tolerance stackup or even minor changes.

MILDRED ARNOLD, 9415 Madison, Kansas City, Missouri 64114, has written to us regarding the sad passing of her husband, KEN ARNOLD. The Arnolds are familiar to many as the owners of a very fine PL2 N72KA seen in many published

photos in Sport Aviation. Ken and his brother-in-law had just made a check flight in the PL-2 when he was stricken while taxiing back to the hangar. Mildred writes that the aircraft has been sold to Ken's cousin, the Rev. George Parrigin, 8106 Glenerset, P.O. Box 12125, Houston, Texas 77017. George will keep it at Clover Field in Houston in the same row of hangars where Pat and Errol Jansen's PL-2 makes its home.

Ken had been building a wet wing for his PL-2 and had also completed a number of related components for the proposed conversion including landing gear parts. Mildred has been taking an inventory of all the parts, fixtures and jigs from the aircraft project. Builders who may be interested in any of these items should contact her directly. All of us offer her our deepest sympathy.

MICHAEL RUSHINSKY, 6240 Orchard Hill, Lorain, Ohio, 44053, writes of his PL-2 #81 project which will be offered for sale due to a recent financial setback. Michael has an unskinned wing, completed gear and wheels, tanks complete, fin and rudder complete, all parts for flaps and ailerons, complete fuselage frames, stick controls and all machine aluminum parts. All the jigs and fixtures also would be offered. For someone starting a PL-2, the above collection of goodies would be an excellent start towards getting out for that first flight!

SERVICE PRESSURE PL-2 GEAR : Following several trials and tribulations regarding how to properly pressurize the PL-2 landing gear, the following notes and procedures may prove useful to others. If the main gear is too low under load one will be unable to easily see over the nose. If the nose gear is down, one runs the risk of pulling stones up into the prop. With load on the gear it is possible to lose pressure and get fluid sprayed out if the inflation hose connection isn't tight. My local F.B.O.'s strut pump gage was meant for airliners (which he services) and the gage is too inaccurate for a little PL-2.

Here is what I do:

- (1) Raise the aircraft until the gear to be serviced is fully extended and slip a 6 inch hardwood block to hold it extended. Tape it in place!!
- (2) If fluid is needed, remove the valve and pump in fluid from an oil squirt can fitted with a length of plastic tubing.
- (3) Replace the valve, lock wire it in place and loosen the large nut to open the inside poppet valve.
- (4) Attach the pressure line (nitrogen preferred) but air acceptable and pressurize to 215 PSI (main gear) ( I built a 3/4" dia. bicycle type pump from "indigenous materials" ( read junk) for the job).
- (5) Tighten the large nut to close the inside valve, remove the pressure line and cap the valve stem.
- (6) Remove the wooden block and allow the aircraft to settle to its natural position.
- (7) The nose gear pressure should run about 175 PSI using the same technique
- (8) At gross weight of 1575 - 1600 lbs. the correct 4" main gear extension should be noted.
- (9) Replace the cover plates.

The above method is safe, easy to accomplish and most importantly, it works!! For the first time, the aircraft sits up properly and has the correct gear extension and pressures to handle a heavy landing should one occur.

## FLYING THE PAZMANY PL2

Many PL2 builders (I was one) have never even had a ride in one much less flown one before starting construction. Naturally they are keen on finding out a bit about how the aircraft feels and flies. C-GQUK now has about 240 hours of varied flying over a good bit of country yet I still climb in anticipating an enjoyable flight in a very nice handling aircraft. Come with me, let's go fly a PL-2. Do a walk around, pre-flight it and roll the canopy back. Climb up on the wing walk, step in onto the seat and settle down in comfort. Roll the canopy shut and latch it, fasten seat belt and shoulder harness, put on the head phone-boom mike and run over the start check list. Fire up the Lyc. O-290, check pressures and turn on the strobes and radio for taxi clearance.

Stick forward, brakes off and a bit of throttle to get rolling, the aircraft is steered by the rudder pedals using a bit of toe brake here and there as needed. Gusty winds don't have much effect with the low wing and weight of all fuel in the tip tanks helping keep you firmly on the ground. Run up is conventional, pre-takeoff check the same but double check electric boost pump on and cowl flap open. Taxi out, line up and slowly open the throttle to avoid pulling stones up into the prop. Right rudder is needed to stay on centre-line until liftoff at about 60 mph. I normally let it lift off pretty much on its own and then hold it level to allow speed to build up and then begin climbing out at about 90 mph (no flap). Visibility over the nose is acceptable at this speed or higher. A single notch of flap helps lower the nose a bit and does not seem to have much effect on climb rate.

Generally I watch the cylinder head temp pretty closely and begin cutting back a bit on throttle after climbing a few hundred feet as there is no point running up into the yellow. Head out to the practice area, noticing how firm yet responsive the stick is in hand. Most will tend to over control a little until familiar with the response. By now you will have noticed the airplane has a very solid secure feeling about it, very much like a flight in a mini airliner. So many pilots and non pilots have commented on this I have been curious just why it is. Perhaps the tip tanks help stability, or maybe the warm wood finish interior helps one feel secure. The big bubble canopy provides visibility entirely unknown to Piper and Cessna pilots. The open feeling should make one feel exposed and unprotected yet for some reason it does not. Possibly sitting on seats built into the low wing helps promote the solid feeling.

Lets try a few turns. The ailerons are almost stiff yet a bit of pressure will roll the aircraft at a surprisingly rapid rate. Turns require very little rudder unless they are very abrupt. straight and level flight can be handled quite nicely feet on the floor if one so desires. The bird comes round very nicely and roll easily from one turn to another almost effortlessly.

Try slow flight, holding altitude, reducing power until down around 55-60 mph, the usual rumbling and buffeting is felt until a docile stall develops. Be careful though, rudder will not pickup a low wing and recovery must be by relaxing stick pressure, increasing airspeed, and then picking up the low wing. Stalls with one, two, and three notches of flap are increasingly more abrupt. The final full flap stall in level flight is like a balancing act and recovery is again by stick forward and then picking up the low wing. There will be tail buffeting.

Power on stalls are of course more nose up and the drop off is more pronounced. If one has enough power and conditions are just so, an odd phenomenon of prop blast on the fin mounted pitot tube will be noticed. The aircraft will be wallowing, approaching the stall and the airspeed will dramatically rise on the indicator. The condition is easy to spot as the signs of stalling are unmistakable. Various increasing amounts of flap will reduce the stall speed bit by bit until the last notch, which is an awful lot of flap. The full flap configuration should only be used to get into a small spot surrounded by tall trees, and then it should be used with the fact the airplane will just barely climb at full power unless flap is dumped, a difficult feat as the handle is awkwardly in the nearly straight up position. Some owners have installed electric flap conversions but there is the usual weight and reliability penalty.

When playing about in the above manner it is wise to switch tanks every half hour to maintain weight symmetry. In cruise, once an hour is fine. For those doing aerobatics, it is recommended both tanks be kept only half full or less. Accidental spins are apparently unusual in this configuration. Spin recovery in the PL-2 is unconventional, but rapid if initiated immediately. The machine is placarded against deliberate spins as after three turns or more they can turn into flat spins from which there is no recovery save via a tail mounted anti-spin chute. The PL-2 must be forced into a spin and I am the last person who will intentionally do so.

How about cruising, the reason for which I built the aircraft in the first place. Climb to your intended altitude, trim and allow it to stabilize, let the engine cool a bit and close the cowl flap to reduce cooling drag. The airspeed will slowly rise and more nose down trim will be needed to stay in balance, cut the throttle a bit at a time as rpm will also creep up with speed. After a bit of fussing, stability is achieved and all you have to do is maintain headings and all the other house keeping chores of cross country flying. Fuel bookkeeping is very important as there are the two tanks to deal with and there is only 22 gallons or about 4 hours of flight at 65% power. Cruise speed runs about 120 mph depending on all the normal variables. (U.S. readers, these are Imperial gals.)

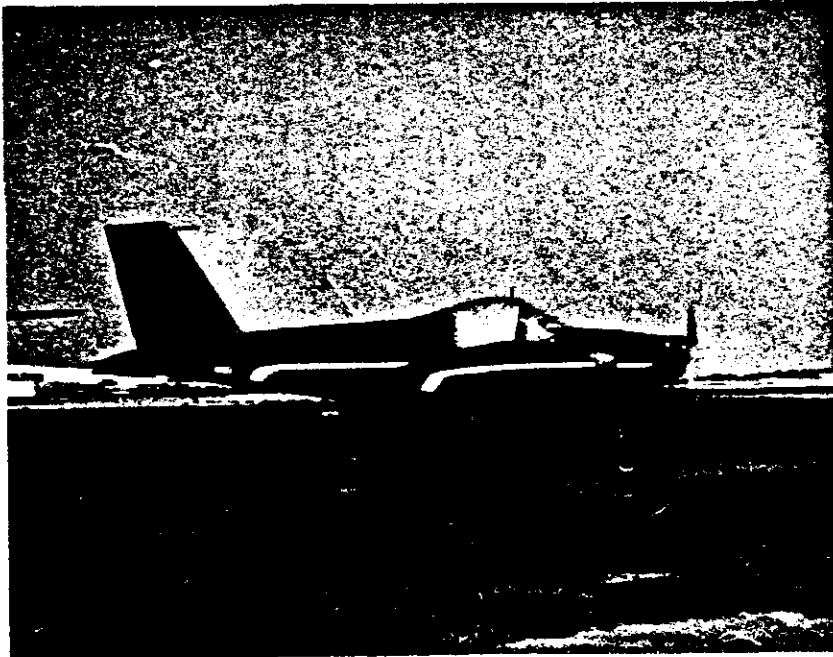
There is lots of radio equipment to help along the way including VOR, ADF, Transponder and two transceivers. They are all tied to a voice actuated intercom which allows both pilot and passenger to easily converse via headphones and boom mikes above the din of the engine. Wife Lib particularly likes the transponder because the little winking green light tells her someone out there is keeping an eye on our progress. I like it especially in busy terminal areas where the controllers announce all nearby traffic and guide you neatly through their zones.

As we arrive at our destination airport, check list again noting especially select fullest tank, boost pump, cowl flap open and all the other normal items. The approach and landing can be made from 130 mph at a big busy airport where large traffic may be right behind down to 70 mph where a short landing is desired. In all cases I hold off touchdown until almost stalled and then land on the main gear only.

If a steep approach at low speed is used with full flap and a touch of power to get a bit better airflow over the tail, a very short landing can be made without too much effort or trouble. Taxiing should be done very carefully as from a Pazmany, taxi lights become suddenly impressively tall. Shut down is routine, 1000 rpm, switches off, mixture to cutoff, mags off, fuel off and button the whole thing up leaving a notch or two of flap down to discourage the curious from climbing on them while peeking inside. The PL-2 may be a bear to build but it more than makes up for all the little trials and tribulations when it comes time to take it into the air.

The above was written for the local EAA chapter's newsletter and edited to fit. It was written considering the stock three notch flap configuration. I modified QUK at Ross Whitney's suggestion by painstakingly filing out an extra notch between #2 and #3. This gives a more useful range of flap settings and the third notch is more like full flap on a Cessna 172. The fourth, last notch can be reserved for those special occasions where dire need demands an approach nearing that of a helicopter in auto-rotation.

A further practical minor change would be to consider routing the fuel tank vent line on dwg. 2-40-002 (part -65) to the front of the -25 filler base, setting it as high as possible but on the tank center line. This mod should prevent the constant loss of fuel out the vent due to sloshing when the aircraft is moved on the ground. The loss is not only a fire hazard in the hangar, it stains the tanks making a reddish area permanently in the paint. The sloshing loss is not totally inefficient as it sure discourages mud dauber wasps from plugging those vents! I'll bet Paz had that figured right from the beginning.



Pat and Errol Jansen's completed PL-2. The colors are burnt orange trimmed in dark brown with light gold metallic flakes and white. Errol still has some chores to do like his spinner, root fairings interior trim and so on. The color photo sure looks good. Errol says it flies left wing heavy just like mine and he is making some adjustments to correct. I put tabs on the ailerons like most factory builds, Frank Kruezer put hidden, under aileron ridges about 3/8 inches high by 6 inches long to get trim, very neat.



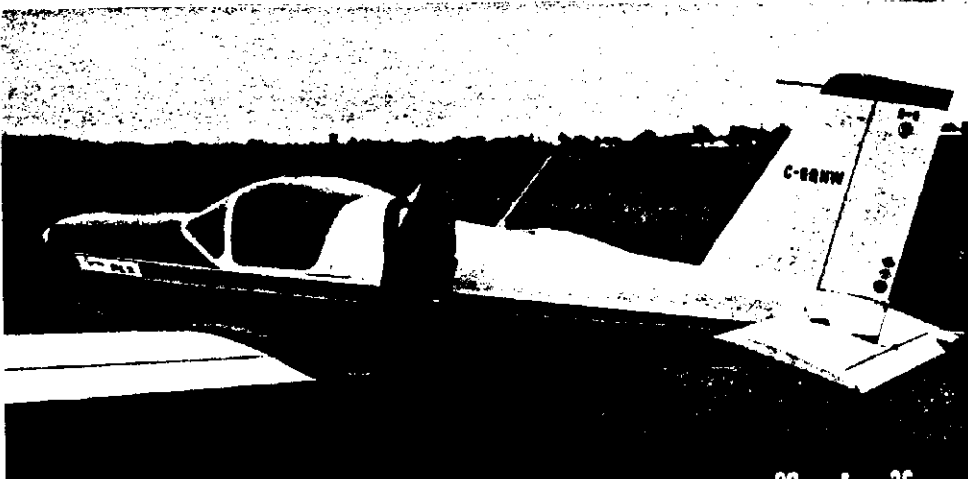
Here they are, three PL-2's at the EAA hangar in Hamilton Ontario April 26 1980. From left, C-GQUK, C-GQUS, and C-GQNW. Dave's, highest time, Frank's newest (only 5 hrs here) and Ross's first of three finished but last started. A lot of joint sefforts, shared jigs and tools really helped get these three in the air a lot faster than working along solo.



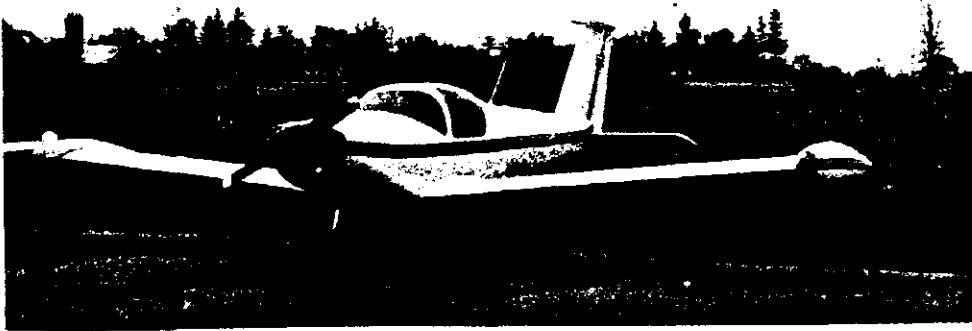
TO the left, Frank Kruezer, a very pleased PL-2 builder and as of last nights phone call all finished a very speedy 50 hours flying time working nights and flying days to get his restricted flight permit hours flown off. Shortly Marion and Frank will be aerial visitors to Windsor.



Right, Dave your slack newsletter editor who has taken so long to get out his third issue. He is looking for news, photos, diagrams, and any material he can get for the next newsletter. The well's about dry.



Ross, fresh from the Radios shopwith a big new investment in nice little goodies to make flying that much easier. Ross owns an operates a high precision tool shop and his machine work shows it. Too bad most is hidden away. Those who have seen QNW at Oshkosh have been impressed I am sure.



C-GQUS all by itself freshly fitted with a custom built super strength fuel valve selector handle. Frank has more nerve than I as he has since experimented with the fuel system by running one tank dry and then switching tanks as the engine starts to begin to completely quit for lack of fuel!

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