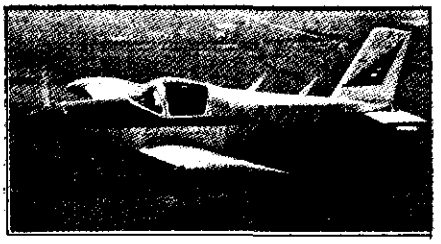
Pat Jansen

PL-1 & 2 Newsletter



NUMBER 41 SPRING 197

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PAZ SEZ 12-15-78
I sold the last set of spar cap extrusions which I had in stock and re-ordered more from Alcoa. I will maintain the price at $500.00 per set. Better put orders now because next batch will be more expensive. Also delivery is getting longer. The mills are overloaded with orders from all the large aircraft companies.

W. L. GRAMATSKY called 4-20-79 He is progressing on his project at a slow but steady pace. He has most of his subassemblies finished and is presently working on the stabilator.

DELMAR LUST, ST.R. 5 Box 436 Dunnellon Fla
Fellow P.L. Builders;
Here is a method which I used to form the nose wheel fork out of 2024T3 or T4. First layout the holes accurately. It is easier to shape and lay it on some fireproof blocks (steel brick etc.) so as to be able to play the flame of a torch both top and bottom. Heat the piece uniformly to 700 to get the proper heat use a 700 Thermocrayon. They are available from most welding supply shops. The crayon has an accuracy of + or - 1 %. Heat the part until the crayon melts when rubbed on it or you may make a mark on the piece and heat it until the mark melts. I prefer the former way. Either way it is better to be a little above 700 than below. So make sure the crayon melts. Have a large pan of water handy and quench the entire piece immediately. When quenching it is best to quench vertically. You must now form the piece right away, as it begins to regain its original hardness after 10 minutes. After 1 hour it has regained 90% of its original strength. If more than 10 minutes have passed before the bends are all formed you will have to heat and quench the piece again. I assume this procedure could also be used to form the ribs from 2024 T3. It is something I will try when I get to form them I formed the part using only ½ a form, bolted the piece to this and formed one leg. Then reversed the part and formed the other leg. Of course the holes in both part and form must be accurate or the legs of the fork

DELMAR LUST cont.
won't line up. I used a hydraulic press although other ways probably work just as good. If any have trouble laying out the holes, I could write a few words on how I did it.

BOB BRADLEY, 44 Beach St., Marylehead MASS 01945 12-10-78
After 15 years of PL-1 manufacturingm his aircraft is ready to be put together. Lumber for a 20 x 30 hanger is in the back yard so his hanger can go up in the spring.

LEE CONLAN, 7858 Arnette st. Downey CA 90241
Been quite busy these days in the solar manufacturing business.

We finaly completed my boss's PL-1 and sold it (S/N358) just prior to it making it's first flight which is still pending

Henk Van Den Heuvel PL-2 builder writes from Bass Hill, Australia that he now has spent 2730 hours since Jan. 1975 on his project. Wing is finished except fitting of tanks, landing gear fitted, fuselage completed w/fin and rudder. Just started to fit the fiberglass canopy frame and plexiglass to fuselage. Next job will be the mating of wing to fuselage. Prior to starting on engine compartment requirements.Will use a O-320 D2B (160 HP) w/dynafocal engine mount. Panel will consist of 26 total instruments and of course will have a VH-xxx registration for the country of Australia.

John Altizer PL-1 (S/N 315) of Sun Valley California has flown off his required time with his equipped O-200 LYC ground power conversion and flew it to his new base of operation at Santa Paula, California

P.S. There are a total of seven active builders down in Australia - Heuvel, Greville, Medlam, Johnston, Hoddinott, Walsh.

Lee Conlan through HOMEBUILDERS AIRCRAFT ASSOCIATES sells fiberglass parts and plexiglass parts for the PL-1 and PL-s, also PL-4 starter kits. For a price list you may write to Homebuilders, Aircraft Associates. 7858 Arnette St., Downey, Calif. 90241.

Lee Conlan sent copies of the articles in JANE'S AIRCRAFT describing circraft associated with Mr. Ladislao Pazmany. I thought you readers be interested in the details about the development of the designs.

PAZMANY AIRCRAFT CORPORATION
This company was formed by Mr Ladislao Pazmany, designer of a two-seat aircraft known as the PL-1 Laminar, A prototype, constructed by Mr. John Green and Mr. Keith Fowler, was flown for the first time on 23 March 1962 the test pilots being Cdr Paul Hayck, USN, and Kueut Richard Gordon, who is best known as one of the Gemini/Apollo astronauts.

Some 5,00 design hours and 4,000 hours of construction went into the prototype PL-1; which had logged more than 2,200 flying hours by

January 1975.

Pazmany Aircraft Corporation is no longer marketing plans of the PL-; instead, plans and instructions for building the improved PL-s are available to amateur constructors and many aircraft of this type are being built. A total of 276 sets of plans had been sold by early 1975.

Mr. Pazmany also designed and built the prototype of another lightweight, low-cost monoplane, designated PL-4A.

PAZ,AMY PL-1 LAMINAR

A total of 375 sets of plans and instructions for building the PL-1 have been sold, and PL-1s are being built in the USA, Canada, Australia. Norway and other countries.

In early 1968 the Aeronautical Research Laboratory of the Chinese Nationalist Air Force at Taichung, Taiwan, acquired a set of PL-1 drawings. Under the supervision of General K. F. Ky and Colonel C. Y. Lee, personnel of the ARL built a PL-1 in a record time of 100 days. It was flown for the first time on 26 October 1968 and on 30 October was presented to Generalissimo Chiang Kai-Shek. Extensive flight testing resulted in the decision to utilize the PL-1 as a basic trainer for DAF cadets and 35 additional aircraft, designated PL-1B, were constructed during 1970, powered by the 150 Lycoming O-320 engine. The PL-1B continues in production, as described under the AIDC/CAF heading in the Taiwan aircraft section of this edition,

The details below apply to the prototype PL-1, which was stressed to 9g (ultimate) for aerobatics and to permit the fitting of more powerful engines.

TYPE: Two-seat light aircraft

WINGS: Cantilever low-wing monoplane. Wing section NACA 63 615. Dihedral 3 degrees. Incidence -1 degree 20 minutes. All metal single-spar structure in one piece, with leading-edge torsion box. Plain piano-hinged ailerons and flaps of all-metal construction. No trim tabs.

FUSELAGE: Conventional all-metal semi-monocoque structure with flat or single-curvature skins.

TAIL UNIT: Cantilever all-metal structure. One piece horizontal surface, with anti-servo tab which serves as a trim tab.

LANDING GEAR: Non-retractable tricycle type, with all three oleo-pneumatic shock-absorbers interchgeable. Goodyear wheels and tyres size 500-5. Tyre pressure 31 lb/sq in (2·18 kg/cm^2). Goodyear brakes. Steerable nosewheel

POWER PLANT: One 95 hp Continental C90-12F four-cylinder horizontally opposed aircooled engine driving a McCauley 1A100/MCM 6663 two-blade metal fixed-pitch propeller. Fuel in two glass-fibre wingtip tanks each of 12·5 US gallons (47 litres) capacity. Total fuel capacity 25 gallons (94 litres). Oil capacity 5 US

quarts (4-5 litres).
ACCOMMODATIONS; Two seats side by side under rearward-sliding canopy. Dual controls. Space for 40 lb (18 kg) baggage aft of seats. Heater and airscoops for ventilation. VHF radio.
DIMENSIONS, EXTERNAL:
Wing span 28 ft 0 in
Wing chord (constant* 4 ft 2 in
Wing aspect ratio 6-7
Tailplane span 8 ft 0 in
Wheel track 8 ft 2⅓ in
Wheel base 4 ft 3 in
DIMENSIONS, INTERNAL:
Cabin: Length 4 ft 2 in
Width 3 ft 4 in
Height 3 ft 4 in
AREAS
Wings, gross 116 sq ft
Ailerons (total) 10.54 sq ft
Flaps (total) 17.36 sq ft
Fin 7.30 sq ft
Tudder 3.10 sq ft
Tailplane 18.00 sq ft
WEIGHTS AND LOADINGS:
Weight empty equipped 800 lb
Max T-O weight 1,306 lb.
Max wing loading 11.4 lb/sq ft
Max power loading 14 lb/hp
PERFORMANCE (at max T*O weight);
Max never-exceed speed 178 knots (205 mph: 330 km/h)
Max level speed at S/L 104 knots (120 mph; 193 km/h)
Max cruising speed at S/L 100 knots (115 mph: 185 km/h)
Econ ctuising speed at S/L 91 knots (105 mph; 169 kn/h)
Stalling speed. flaps down 44 knots (51 mph: 80 km/h)
Max rate of climb at S/L 1,000 ft. (305 m)/ min
Service ceiling 18.000 ft
T-O run 550 ft
T-O to 40 ft. 784 ft/
Landing from 50 ft 1.100 ft.
Landing run 175 ft.
Range with max fuel 521 nm (600 miles: 965 km*

PAZMANY PL-1B
This is the version of the PL-1 built in Taiwan. It differs from the basuc PL-1 mainly in having a 140 hp Lycoming O-320 engine.

PAZMANY PL-2
Shortly after flight trials of the PL-1 began, Mr. Pazmany initiated a complete redesign of the aircraft. The developed design known as the PL-2, is almost identical with the PL-1 in external configuration. Cockpit width is increased by 2 in and wing dihedral if increased from 3 degrees to 5 degrees. The internal structure is extensively

changed, to simplify construction and reduce weight. Suitable Lycoming power plants are the 108 hp O-235-C1, 125 hp O-290-G (ground power unit).135 hp O-290--D2B or 150 hp O-320-A.

Static tests of every major assembly up to ultimate loads had been made by early 1967. The first PL-2 to be completed was built by Mr. H. Pio of Ramona, California, and this aircraft made its first flight on 4 April 1969. piloted by Mr. Pio. It has an O-290-G engine.

A single example of the OL-2 was built by the Vietnam Air Force, each VNAF base contributing towards its construction. This flew for the first time on 1 July 1971, and it was reported that production of at least ten more PL-2s for use at the VNAF Air Training Center was being considered. The Royal Air Force was also known to have two PL-2s under construction; but no further news on this project had been received by early 1975. The Republic of Korea Air Force built one PL-2 prototype for flight testing, and later completed three more for evaluation as trainers. In Japan, the Miyauchi Manufacturing Co Ltd. Tokyo, completed a prototype of thePL-2 in the Autumn of 1971, this being exhibited at the Nagoya International Air Show during October-November 1971.

The Indonesian Air Force began constructionof an example of the PL-2 at the Lipnur factory in late 1973, for evaluation as a military trainer. This was completed during October 1974, and its first flight was made on 9 November. The designation LT-200 has now been allocated to this version, of which two pre-production examples were under construction in early 1975. There are plans to build at least 30 LT-200s although it is possible that as many as 60 might be built.

DIMENSIONS, EXTERNAL:
As for PL-1, except;
Length overall 19 ft 3 ½ in
Height overall 8 ft 0 in
Wheel track 8 ft 5 ½ in
WEIGHTS
Weight empty
108 hp 875 lb
125, 135 hp 900 lb
150 hp 902 lb
MAX T-O WEIGHT:
108 hp 1,416 lb
125, 135 hp 1,445 lb
150 hp 1,447 lb
PERFORMANCE (at max T-O weight):
Max level speed at S/L
108 hp 120 knots (138 mph)
125 hp 125 knots (144 mph)
135 hp 113 knots (130 mph)
150 hp 118 knots (136 mph)

STALLING SPEED (FLAPS DOWN)
108 hp 45.2 knots (52 mph)
125,135,150 47 knots (54 mph)
MAZ RATE OF CLIMB AT S/L
108 hp 1,280 ft
125 hp 1,400 ft
135 hp 1,600 ft
150 hp 1,700 ft
RANGE AT ECON CRUISING SPEED;
108 hp 427 nm (492 miles)
125 hp 422 nm (486 miles)
135 hp 428 nm (493 miles)
150 hp 330 nm (381 miles)

PAZMANY PL-4A

Mr Pazmany flew for the first time on 1? July, 1972 the prototype of a lightwerght single-seat low-wing monoplane designated PL-4A. It was designed specifically for easy low-cost vonstruction by amateur builders, to provide a safe aircraft that would be economical in operation. The prototype had completed approximately 300 hours of flight by January 1975. Sets of plans, kits of prefabricated components, glassfibre wingtips and fuel tank and transparent cockpit canopy are available to amateur constructors.

By Fevruary 1975, approximately 460 sets of plans had been sold, and the PL-4A had received approval in Australia for construction by amateurs.

In November, 1973, Lt Col Roy Windover, Director of the Aur Cadets Programme, Canadian Ministry of Defence, made a flight evaluation of the PL-4A prototype. As result of this, it is planned to provide 200 pf these aircraft for the Air Cadets.

AIDC (PAZMANY) PL-1B CHIENSHOU

A description of the PL-1A prototype appeared in the 1970-71 JANE'S. The PL-1B is the version modified for production of which 35 were built in 1970 and a further 10 in the Spring of 1972. Significant improvements compared with the PL-1A include a wider cockpit larger rudder and more powerful engine. A third batch, also of the PL-1Vs was built and delivered in 1974. Additional modifications to the engine cowling, nose landing gear tail unit, flap control and pilot seats were made in these 10 aircraft.

TYPE: Two-seat light aircraft
WINGS: Cantilever low-wing monoplane. Wing section NACA 63?715. Dihedral 3 degrees from roots. Incidence -1 degree ?0 minutes. All-metal single-spar structure in one piece, with leading-edge torsion box. Plain piano-hinged ailerons and flaps of all-metal construction. No trim tabs.
FUSELAGE: Conventional all-metal semi-monocoque structure, with flat or single-curvature skins.
TAIL UNIT: Cantilever all-metal structure. One piece horizontal surface, with anti-servo tabwhich serves as a trim tab.
LANDING GEAR: Non-retractable tricycle type, with all three oleo-pneumatic shock-absorbers interchangeable. Goodyear wheels and tyres size 5.00.5: tyre pressure 31 lb/sq in. Goodyear brakes. Steerable nosewheel.
POWER PLANT: One 140 hp Lycoming)-?10-E?! four-cylinder horizontally opposed aircooled engine driving a McCauley 1A100/MCM 6668 two-blade fixed pitch metal propeller. Fuel in two glassfibre wingtip tanks, each of 10-4 Imp gallons (12.5 US gallons) capacity. Total fuel capacity 20.8 Imp gallons (25 US gallons), Oil capacity 1.7 Imp gallons (2 US gallons)
ACCOMMODATION; Two seats side by side under rearward-sliding transparent canopy. Dual controls. Space for 40 lb baggage aft of

seats. Heater and airscoops for ventilation.
ELECTRONICS AND EQUIPMENT: VHF radio standard.

DIMENSIONS, EXTERNAL:
Wing span 28 ft 0 in
Wing chord 4 ft 2 in
Wing aspect ratio 6-72
Length overall 1[illegible] ft 8 1/8 in
Height overall 7 ft 4 in
Tailplane span 8 ft 0 in
Wheel track 8 ft 2¼ in
Wheelbase 4 ft 3 in

DIMENSIONS, INTERNAL
Cabin: Length 4 ft 2 in
Max width 3 ft 6½ in
Max height 3 ft 4 in

AREAS:
Wings, gross 116 sq ft
Ailerons (total) 10.54 sq ft
Flaps (total) 17.36 sq ft
Fin 7.30 sq ft
Rudder 4.20 sq ft
Tailplane, incl. tab 18.00 sq ft

WEIGHTS AND LOADINGS:
Weight, empty, equipped 950 lb
Max T-O weight 1,440 lb
Max wing loading 12.4 lb/sq ft
Max power loading 9.6 lb/hp

PERFORMANCE (at max. T-O weight):
Max never-exceed speed 178 knots (205 mph)
Max level speed at S/L 120 knots (150 mph)
Max cruising speed at S/L 113 knots (113 knots)
Econ cruising speed at S/L 100 knots (115mph)
Stalling speed, flaps down 47 knots (54 mph)
Max rate of climb at S/L 1,600 ft/min
T-O run 560 ft
T-O to 50 ft 950 ft
Landing from 50 ft 1,100 ft
Landing run 550 ft
Range with max fuel 350 nm (405 mi)

LIPNUR LT-200

The Lipnur LT-200 is a two-seat light aircraft based on the design of the Pazmany PL-2. It is intended for use as a military and civil trainer, and for club and private flying. Construction of the first of two prototypes began in September 1973, and this aircraft (IN-200) flew for the first time on 9 November 1974. In the following month construction began of two modified and improved pre-production aircraft, and in early 1975 the Lipnur factory was setting up the necessary facilities for certification and eventual production. It is expected that about 30 LT-200s will be ordered initially for the Indonesian Air Force, Civil Flying School and flying clubs, and that these could be completed within two years from the start of production. Additional production will be subject to market.

The following description applies to the prototype LT-200:
TYPE: Two-seat light aircraft.

WINGS: Cantilever low-wing monoplane. Wing section NACA 63$_2$615. Dihedral 5 degrees. Incidence 0 degrees. Single-spar structure of 2024S aluminum alloy. Plain ailerons and trailing-edge slotted flaps of similar construction. No tabs.

FUSELAGE: Semi-monocoque structure of 2024S aluminum alloy.

TAIL UNIT: Cantilever structure of 2024S aluminum alloy. Single-spar fin and rudder, with slight sweepback. Single-spar all-moving tailplane with servo tab.

LANDING GEAR: Non-retractable tricycle type, with oleo-pneumatic shock-absorber on all three units. Single Goodyear 5.00-5 wheel and size 15 x 4.00-5 tyre on each unit. Tyre pressure 30 lb/sq in on main wheels, 28 lb/sq in on nosewheel. Goodyear hydraulic disc brakes.

POWER PLANT: One 150 hp Lycoming O-320-E2A four-cylinder horizontally-opposed aircooled engine, driving a McCauley AGM 7250 two-blade fixed-pitch metal propeller with spinner. All fuel contained in two permanently-attached wingtip tanks, total capacity 25 US gallons. Refueling point on top of each tank. Oil capacity 2 US gallons.

ACCOMMODATION: Side-by-side seats for pilot/instructor and one passenger/pupil under one-piece rearward-sliding canopy. Cabin ventilated. Space for 40 lb of baggage aft of seats.

SYSTEMS AND EQUIPMENT: 14V 50A electrical system for communications, instruments and lighting. Portable oxygen system. ARC 300 or Narco Com 111 radio and blind-flying instrumentation, standard.

DIMENSTIONS, EXTERNAL:
Wing span over tip-tanks 28 ft 6 in
Wing chord 4 ft 2 in
Wing aspect ratio 6-7
Length overall 19 ft 4 in
Height overall 7 ft 7 in
Tailplane span 8 ft 0 in
Wheel track 7 ft 9 in
Wheelbase 4 ft 1 in
Propeller diameter 7 ft 0 in
Propeller ground clearance

DIMENSION, INTERNAL:
Cabin: Max width 3 ft 4 in

AREAS:
Wings, gross 116-0 sq ft
Ailerons (total)
Trailing-edge flaps (total)
Fin 5.7 sq ft
Rudder 4.7 sq ft
Tailplane, incl. tab

WEIGHTS AND LOADINGS:
Basic weight empty 902 lb
Max payload 380 lb
Max T-O and landing weight
Max wing loading 11.6 lb/sq ft
Max power loading 9.65 lb/hp

PERFORMANCE (at max T-O weight)
Max never-exceed speeed
(structural) 161 knots
Max level speed at S/L 133 knots
153 mgh
Econ cruising speed at S/L 118
knots, 136 mph
Stalling speed, flaps down
47 knots, 54 mph
Max rate of climb at S/L
1400 ft min
Service ceiling 15,00 ft
Min ground turning radius 18 ft
6 in
T-O run 545 ft
T-O to 50 ft 1,150 ft
Landing from 50 ft 920 ft
Landing run 620 ft
Range with max fuel 330 nm
381 miles

DAVE PANTON, 3565 Askin, Winsor, Ontario, Canada N9E3NI 4/8/79
Its been a very cold winter but we've had little snow. I got the first flight off in December after weeks (11) of waiting for a DOT inspection and flight permit. Then I only got about 12 hours in before winter set in good and it was just too much hassle to fight with jammed hanger doors and freezing winds. Anyway I got out again in March and now have 38 hoyrs in the a'r with only minor problems to date.

Just like the say, the aircraft is a delight to fly as it is stable yet responsive to control in all axes - evenly. The 7057 Prop is too fine and I had to put aileron tabs on to correct a left wing heavy condition - noticeable mostly under power, Also a titch of right rudder in cruise was needed - cured by a small spring pulling on the left rudder pedal a bit.

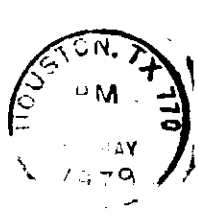
Since the weather has been so cold I hesitate to write much about speed, performance and so on until things warm up a bit and more or less standard conditions prevail. I have flown it at 0 degrees f. OAT and the heater muff and DJP heater system works fine and one can stay quite comfortable. The flap handle and trim tab wheel slot are sources of frafts which would be well worth sealing but for the life of me I couldn't find a way in the box. Perhaps a seal on the inner flap to close up on the belly would be the answer - at least in cruising flight.

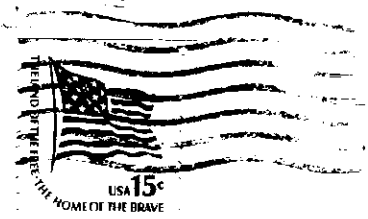
I had rented a hanger space which is no longer available and I have a real problem in doing these sort of jobs out-doors in the cold abd weather without even a handy tool-box or electrical outlet nearby. So I face the problem of finding hanger space - a very costly deal in Windsor.

Do you think we are all just a bit crazy for spending so much time and effort on such a difficult project? I thought so until I began flying the bird and I can't tell anyone how much one enjoys flying ones own Pazmany - so maybe that justifys all in the end.

FROM THE EDITOR - SUBSCRIPTION RENEWAL
Errol and I have enjoyed participating in the PL-1/PL-2 Newsletter during the past several years; however, we will be passing on that responsibility to DAVE PANTON who will mail out the next issue. The fee for the next years subscription will be $4.00. Please send your renewal fee to Dave Panton, 3565 Askin, Winsor, Ontatio, Canada N9ENI along with the questionnaire which appears on the following page. We appreciate the effort you readers have exerted in sending us letters about your progress with your projects, it would have been impossible for us to print the Newsletter without your assistance. Thank you for your diligence in keeping us informed about the status of your airplanes and sharing building tips with us.

PAT JANSEN
2514 Munger
Houston, Texas 77023





First Class

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