

Pazmany PL-1

The homebuilt produced by the Chinese Air Force (Taiwan) as their standard trainer makes a great little RC Scale job for competition or sport flying. / by Nick Zioli



The following is a familiar piece of dialogue that has been repeated as many times as I have brought the PL-1 out to fly: "Gee, that's a nice looking plane. What is it?" "It's a Pazmany." "A what?" "A Pazmany PL-1." "Oh, is it Chinese?" "No it's a California homebuilt design." This last answer either leads to a whole line of new questions or a nod of the head and incoherent muttering.

Actually, the Pazmany PL-1 is a Chinese plane of American design. It could be confusing if you don't know the story behind this version of the PL-1.

The original was built by Keith Fowler and John Green in California. (A complete test report on their plane ap-

Pazmany



peared in the August-September 1963 issue of *Air Progress*.) The design was conceived by a group of the San Diego chapter of the Experimental Aircraft Association, headed and finally taken over by Ladisalo Pazmany. Plans were made available.

How the Republic of China got involved in home building airplanes is another story. The Chinese Air Force was in need of a training plane for their Air Cadets. They had skilled manpower, but little funds for the program. It was decided that building their own planes, possibly 35 in all, would be the best approach. A thorough study of home-built aircraft was made with the Pazmany PL-1 chosen as the best trainer airplane.

The first aircraft, the one after which ours is modeled, was built and flown in 100 days so it could be presented to President Chiang Kai-shek on the occasion of his 82nd birthday in 1968. Whether the 35 production planes were ever built I don't know. It would seem to be a practical approach.

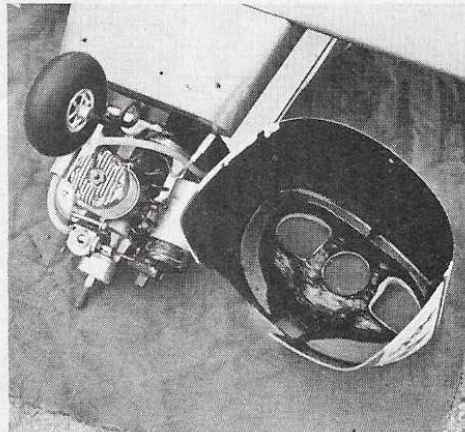
Our model is built to a 2"=1" scale which produces a nice compact scale model with good performance. Any maneuver in the AMA scale regulations can be easily performed and the flaps are worth ten points for scale operation. The wingspan is 56 in. with 490 sq. in. of wing area.

The PL-1 weighs about 6½ lb., including nose weight required to properly locate the center of gravity. Rather than stick in a piece of lead, it was decided to put the weight to good use. A "D" size nickel cadmium battery was strapped to the side of the Tatone motor mount. A switch was soldered to the front of the battery that can be

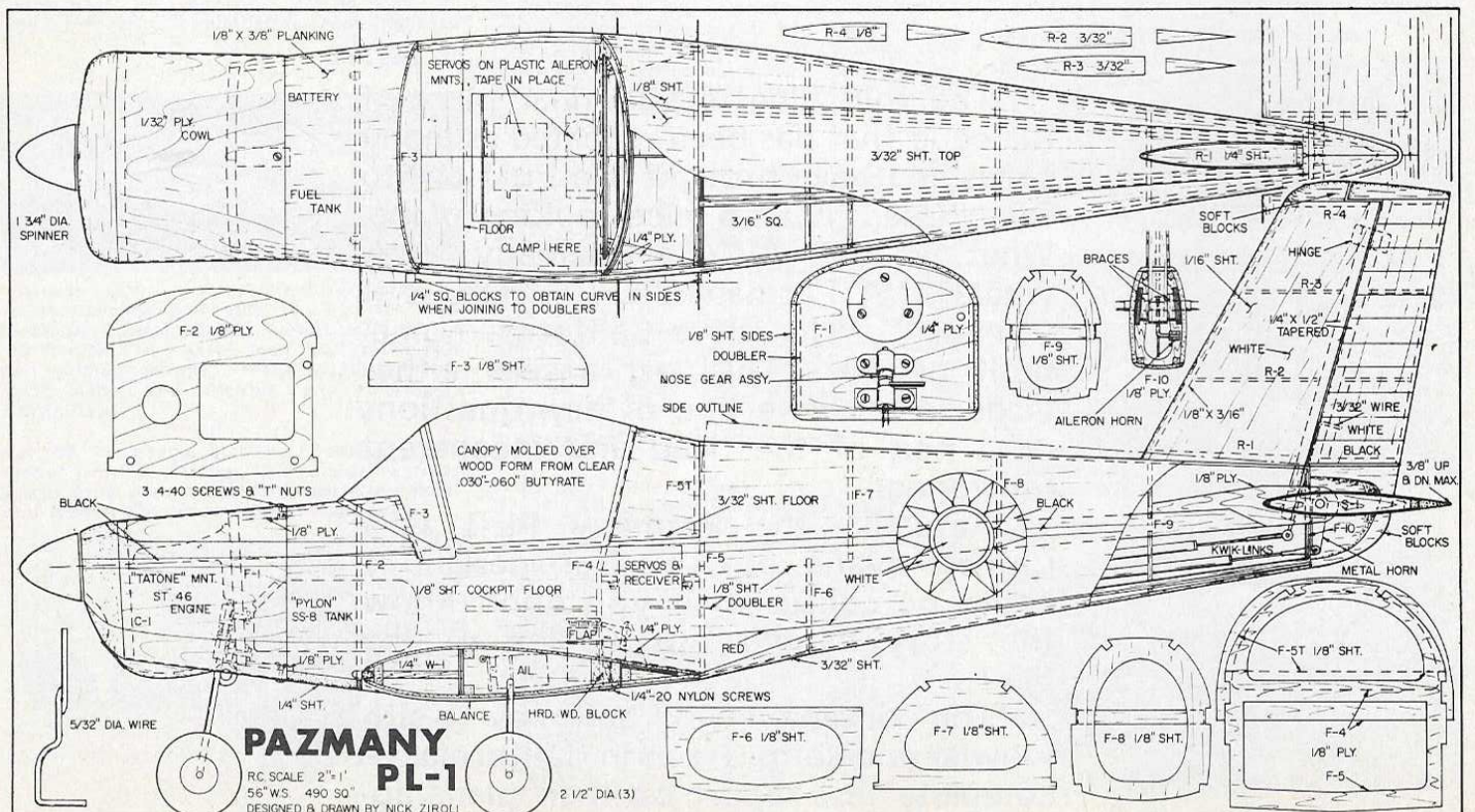
Sam Pawlowsky's PL-1 won the prize for BEST HOME BUILT at the 1971 EAA Oshkosh Fly-in. Try silver Super MonoKote on your model to duplicate this plane.



Author removes the cowl to prepare for the first flight. The original is also a fixed gear plane.



Nice and clean before the first run-up. The interior of the wood cowl has been shaped and finished. It entails much less work than fiberglass construction because of the simple curves.



reached through the cowl opening. It is turned on before the engine is started and then left on. This helps make a low reliable idle possible.

Additional weight was obtained by using a Tatone exhaust manifold which is not heavy. The weight came from additional pipes and fittings that were used to make a scale exhaust system. Two openings on the manifold were used with a separate pipe running from each one out through the bottom of the cowl.

The tail-heavy condition was partly due to the location of the receiver and servos which were placed to the rear of the cockpit area to obtain as much room as possible for pilots (a cheap, lightweight version of the "G.I. Joe" type of doll available in most discount department stores). Pilots add a lot to the realism, especially in the air. Although they do not gain any scale points on the ground, in the air the added realism could easily sway a judge for an extra point or two. I've seen so many flight photographs of beautiful scale models in which the absence of a pilot makes them stand out as a model.

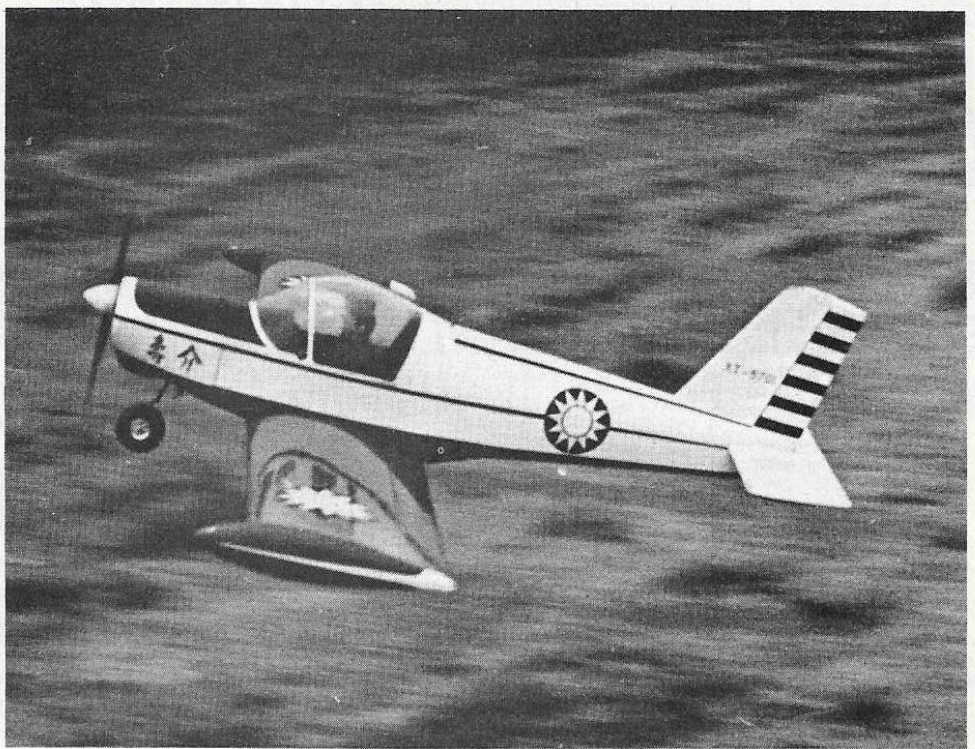
A Supertigre 46 powers our model and has proven to be reliable and a good match for the PL-1. Any 40 to 50 would handle it without any trouble.

The small size of the Micro Avionics servos and receiver make them easy to conceal behind the pilot's seat. The battery is positioned up forward next to the fuel tank.

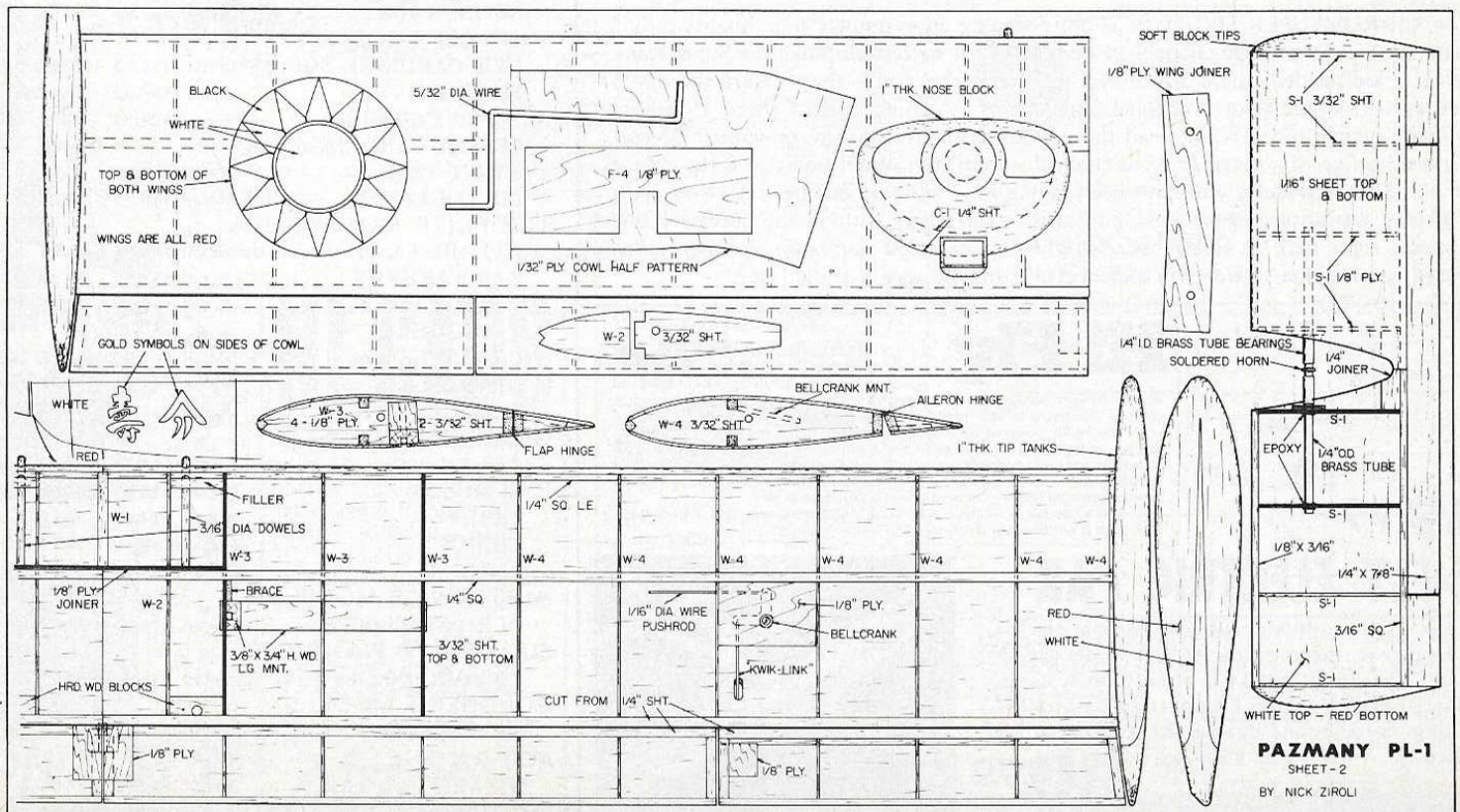
Construction

Although this is not one of the fastest building airplanes around, there is nothing that is overly difficult—just more time consuming. It is not a beginner's project, but a modeler with any amount of construction experience should be able to build it.

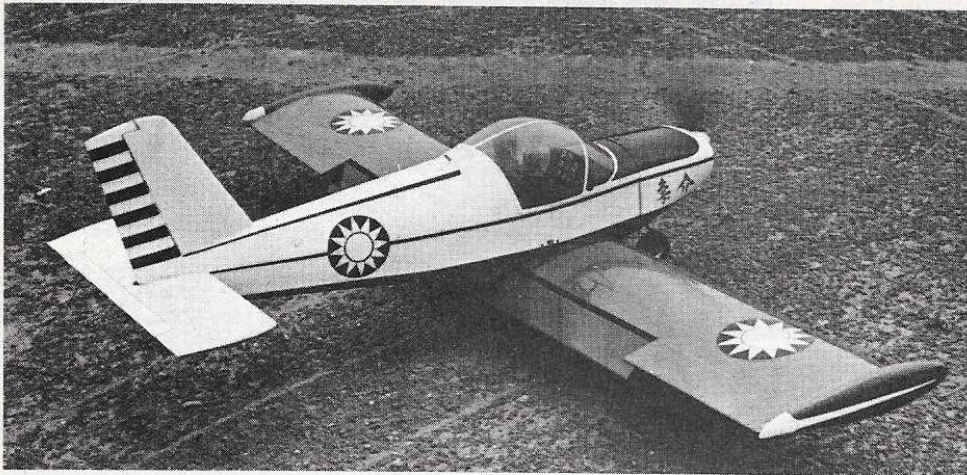
(Continued on page 48)



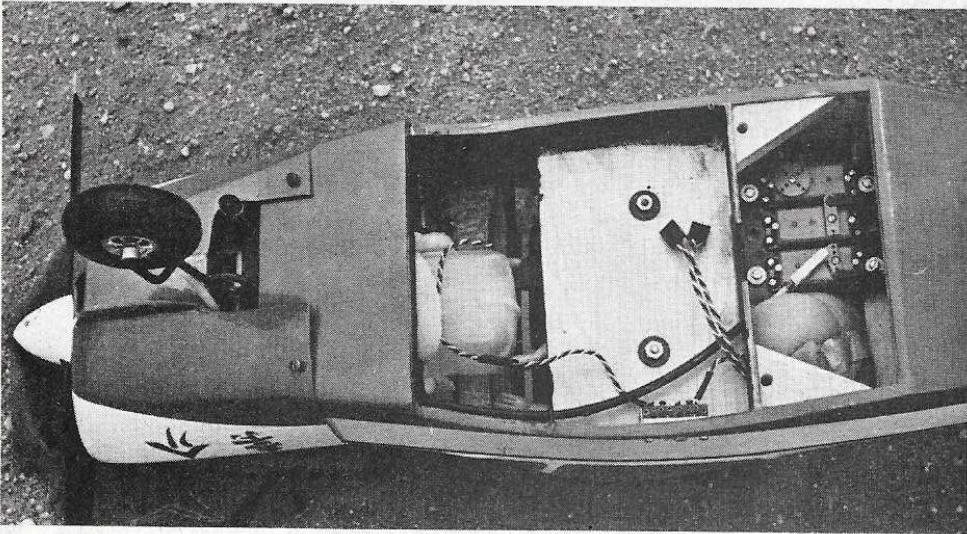
ABOVE: It is a fast and reasonably aerobatic flyer. Here, one can imagine a CAF cadet with instructor turning in on final approach for landing. **LEFT:** It is rather busy under the cowl. For nose weight a "D" cell nickel-cadmium battery for the glow plug is added. ST 46 provides the power even though the model weighs 6½ lb.



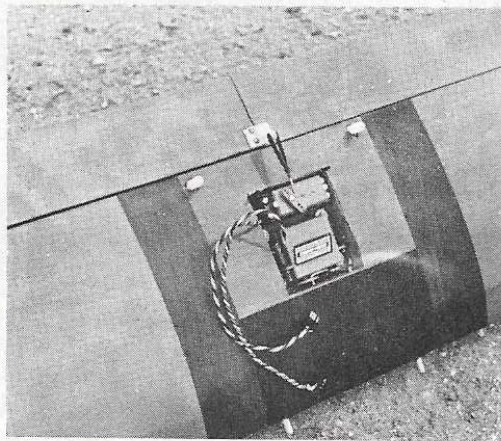
Pazmany



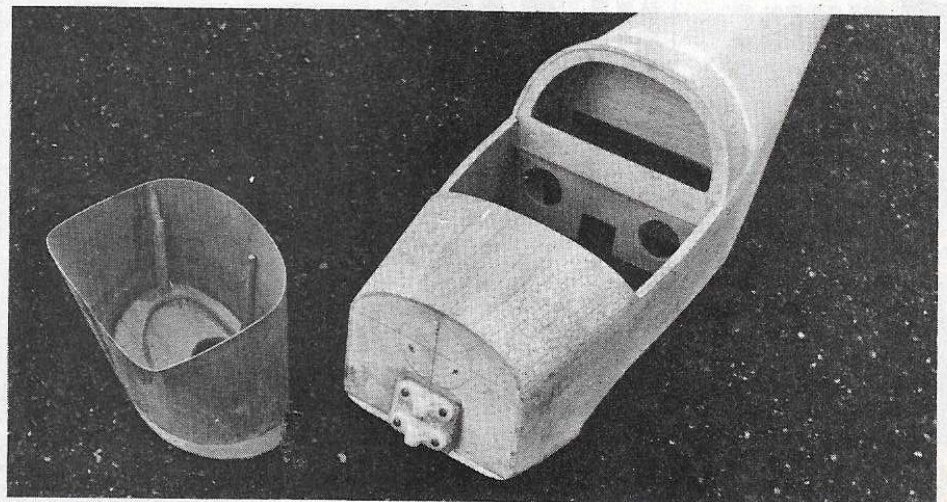
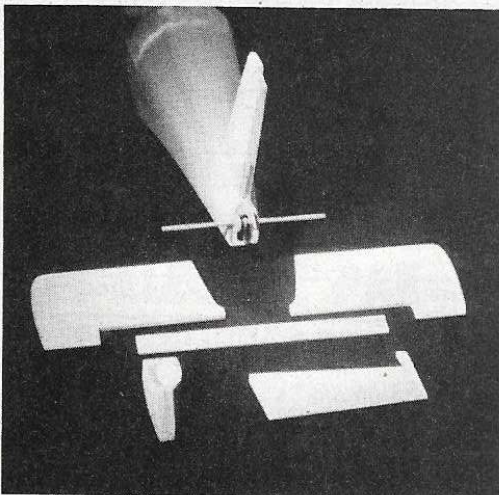
Taxiing back after the first flight. Author reports that the flaps slow the model easily; this makes up for the rather high wing loading and low power loading. Full flap movement for landing, but only small movement for takeoff.



ABOVE: Lots of room in here, but the tank is well back from the engine. Exhaust pressure might be advisable. Cockpit is open for detailing. RIGHT: Two horns joined by the clevis operate the two-segment flaps.



BELOW: All-flying tail unit of real plane was faithfully duplicated. Loads are carried on the spar. BELOW RIGHT: Plywood and balsa cowl is sturdy. Here, it is not shaped inside. Firewall shows the angled nose gear bearings.



Select two sheets of light, flexible 1/8 x 6" sheet for the fuselage sides. They may also be glued up from one 1/8 x 4" and 1/8 x 3" sheet. The latter is used for the top rear sides and half a sheet (18") can be used. Cut both sides and the front and rear doublers to shape. Study the plans carefully and cut all the former notches in the doublers. Join the doublers to the sides in a pre-bent manner, by clamping the center and blocking up the ends as shown in the top view. Use white glue or epoxy.

While the doublers are drying, cut out the formers. Glue the rear doublers in place using formers to position them. Join the sides with F-1, F-2 and F-5. Pull the tail together and make ends even—do not cement. This should result in a true fuselage. When dry, add the remaining formers except F-10. Do not try to curve the sides above doublers. Cement the 3/16" square top and bottom stringers in place. Now run cement along the formers and top stringers; pull down in place and hold with tape and rubber bands. Epoxy the 1/8" plywood stabilizer pivot supports and F-10 in at the same time. Run a tube through the holes in the pivot support and align it so it is parallel to a stick laid across the wing saddle.

To obtain a more scale-like nose-wheel strut, one was bent to shape with a single spring coil to get an offset at the wheel. This offers ample spring action. When forming, bend the coil first and work out from there. The steerable bearing is mounted to F-1 at an angle as shown in the side view. A two-piece bearing was used on the original model. A single-piece bearing such as a Carl Goldberg unit would be easier to use as there would be no alignment problems. Mount it on a hardwood wedge-shaped block. Run the mounting screws through the block and F-1. Epoxy the block in place.

Cover the bottom of the nose with 1/4" sheet (run grain across the fuselage). Plank the top of the nose with 1/8 x 3/8" strips. Sand the sides and stringers to the contour of the formers.

Text continued on page 85

No. 0132, Viper—Toledo Design and Finish winner, big State-of-the-Art Pattern ship by Dario Brisighella, Sr. for good 60s and retracts. \$2.00

No. 0131, 720 Turn—Clarence Haught design Class B FF. Conventional design, high pylon wing, big plan. \$4.00

No. 1224, Snoopy—Sport flyer and trainer for 09 thru 35. Can use Top Filite Headmaster wing. \$2.25

No. 1223, Quieky 300—Glen Spickler's club pylon racer goes fast but is very quick-building, long-lasting, easy to fly and land. For TR type 40s. Great for grass-field sites. \$2.75

No. 1222, David—An Al Nordic for competition with A2s is stronger, smaller, easier to make, and has lower wing loading. \$1.75

No. 1221, Spitfire—Highly detailed, two sheet plans for 60-powered retract-gear CL scale model. A Nats winner and seventh in CL Scale World Champs. \$7.00

No. 1122, Sweet Pea—"V" tailed CL stunter by Dennis Adamisin is consistent winner with semi-scale Good-year-racer appearance. Takes smooth 35 or muffed 40. \$3.50

No. 1121, Warlock—Mid-wing, tandem bicycle retractable, all-flying stab, and swept wing are features of this 60-powered Pattern ship by Jim Wilmot. Large plan. \$6.50

No. 1023, Quasimodo—An odd-looking four-channel RC Sport job for 35s. Shoulder wing, tail dragger. A fun flyer. \$4.00

No. 1022, Lockheed S1—Unique highly-detailed scale biplane of Lockheed's first airplanes. Original dates to 1921. Design by M. Groves, uses a 40. Two sheets. \$7.00

No. 1021, Bronco—A Class I or II Navy Carrier plane for two 19s or two 29s of the OV-1A C.O.I.N. fighter. The large plan sheets. \$6.00

No. 1122, Sweet Pea—"V" tailed CL stunter by Dennis Adamisin is consistent winner with semi-scale Good-year-racer appearance. Takes smooth 35 or muffed 40. \$3.50

No. 1121, Warlock—Mid-wing, tandem bicycle retractable, all-flying stab, and swept wing are features of this 60-powered Pattern ship by Jim Wilmot. Large plan. \$6.50

No. 1023, Quasimodo—An odd-looking four-channel RC Sport job for 35s. Shoulder wing, tail dragger. A fun flyer. \$4.00

No. 1022, Lockheed S1—Unique highly-detailed scale biplane of Lockheed's first airplanes. Original dates to 1921. Design by M. Groves, uses a 40. Two sheets. \$7.00

No. 1021, Bronco—A Class I or II Navy Carrier plane for two 19s or two 29s of the OV-1A C.O.I.N. fighter. The large plan sheets. \$6.00

No. 0923, Vertigo—A CL vertical take-off-and-landing biplane. Uses throttled 19 for power. Really flies, lots of fun. \$2.75

No. 0922, Aqua-Vent Floats—Simple curves make these easy to build. Sized for 15 to 30 powered planes. Designed for quick lift-off with low power. \$2.50

No. 0921, Hot Pants—Jerry Nelson's large-bodied, realistic-looking, home-built type RC Pattern design. Smooth flyer uses all-moving stab. \$4.00

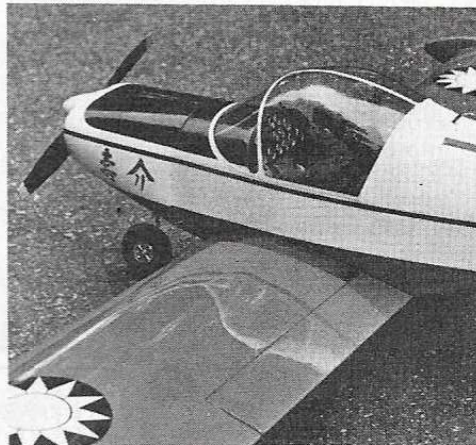
No. 0825, S.S.P. RC Helicopter—Gene Rock's very successful large trainer helicopter needs only 40 to 45 size engine. Designed for home builder with minimum machined parts, gyro-stabilized tail rotor, all belt drive, 4 channel radios. \$6.00. Also recommended is Plan No. 0826 with full-size drawings for all special machined parts. \$2.00

AAM will present up-dates on the design during 1973 as experience of readers and designer shows need.

No. 0824, Ryan SC—Unusual 049 free flight scale model is low winger with excellent flight stability. Flies fast and handles wind easily. \$2.75

PAZMANY PL-1

(Continued from page 48)



A pair of differently decorated GI Joes pilot the craft from a full panel of Tatone instruments. Pilots won't add points in Scale, but give realism in action.

Sheet top and bottom with 3/32" sheet.

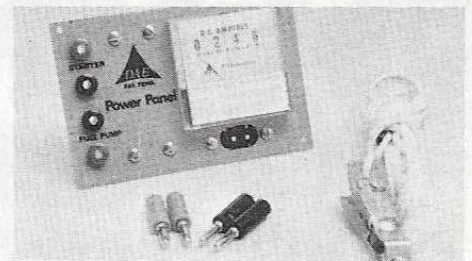
Sand the basic fuselage to shape. Build up the fin in place of the fuselage. Glue the tapered rear spar in place blocking it between the plywood pivots. Make sure it is square to the elevator. Add R-1, R-4 and the leading edge. When dry, add R-2 and R-3, sand to shape and cover with soft 1/16" sheet. Build the rudder in a similar manner.

The elevators are built separately and not installed until they and the fuselage are finished. Cement the leading and trailing edges to the ribs, pinning in place. When dry, sand to match the ribs and cover with soft 1/16" sheet. Add the trailing edge pieces and tips, then sand to shape. The antiservo tab is installed when the elevators are joined.

Make up the elevator bushings, pivots tube and horn. The horn is soldered to the pivot tube with both in place on the fuselage. Then the bushings are installed and epoxied to the plywood supports.

Before the tail cone blocks are cemented in place, the pushrods should be fitted. A three side-by-side servo tray was used for the Micro Avionics servo and is available for most others. Epoxy the mounts in place. Make up and install the rudders and aileron pushrods. The

ONE BATTERY IS ALL YOU NEED!



DAE Power Panel

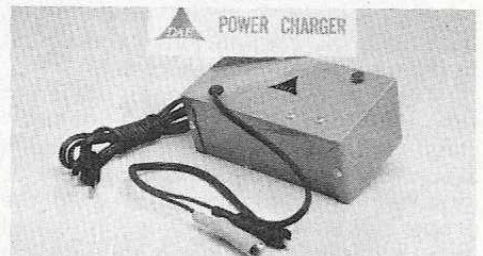
POWER for your starter pump-plug
AMMETER indication of plug condition

ALL from your 12V battery

- Outputs: 12V, 4V, 1½V
- Glow Plug Cord
- Battery Cord
- Mating Plugs
- 3"x5" for Easy Mounting

ALL FOR ONLY \$18.95.

CHARGE YOUR 12 VOLT BATTERY SAFELY!



DAE Power Charger

- Transformer Isolated
- Charge Indicator
- Low 200 ma rate

An Ideal Companion for Power Panel
Only \$13.95

SEE DEALER FIRST. If unavailable order direct including \$1.00 for handling. Indiana residents add 4% sales tax.

SEND FOR FREE 1974 CATALOG



DA Enterprises

BOX 335 • HAUBSTADT, INDIANA 47638
MANUFACTURERS FOR THE AERO MODELER

WORLD WAR II R/C SCALE

	PLAN	KIT
61¼" P-47 D	\$5.95	\$74.95
60" Stuka JU 87 D	5.95	79.95
60" Hurricane	5.95	79.95 ✓
63" Zero A6 M5	5.95	79.95 ✓
56" Spitfire	4.50	59.95
63" Mosquito	5.95	84.95
62½" Skyraider	5.95	94.95 ✓
56" Gladiator "Bipe"	5.95	79.95 ✓
60" Swordfish "Bipe"	5.95	79.95 ✓
57" Tiger Moth "Bipe"	5.95	59.95

✓ Kit includes fiberglass cowl. All kits include canopy, hardware, handcut parts, nylon cloth, etc.

Illustrated Catalog — 25 cents

BUD NOSEN

Box 105 A

Two Harbors, Minnesota 55616

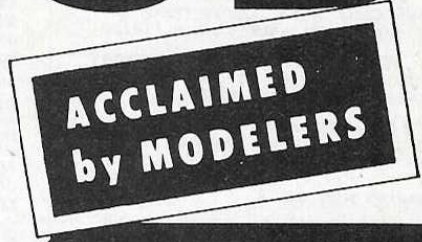
SU-PR-ROD T.M.

THE ALL WEATHER PUSH ROD

BEATS THE OTHERS *HOT* OR *COLD*

COMPLETE WITH ALL HARDWARE

44" LONG AND FLEXIBLE



PLAINFIELD, ILLINOIS 60544

MAKERS OF ADVANCED PUSH RODS SYSTEMS: PROROD-NYROD-MASTEROD & MASTEROD-XF

rudder horn is similar to a strip aileron horn. The horn is installed but the rudder is not until after it is finished. After the pushrods are installed and operating, the soft balsa tail blocks can be cemented in place and carved to shape. Hollow out to clear elevator parts beforehand. If any control problems do develop later, a small hatch can be cut in the bottom sheet for access.

The cowl construction is different than the more common blocks or fiberglass. It is 1/32" plywood wrapped around the fuselage and C-1. C-1 is mounted on four legs off F-1 in the proper position. The plywood is soaked in water and wrapped around with the joint overlapped on the bottom. Hold

with tape and rubber bands. When it has dried, remove it, epoxy around C-1, and the bottom joint, place a piece of paper between the cowl and the bottom of the fuselage so they won't get stuck together, and tape it back into place. When it has cured, remove it and you have the basic cowl. It may lose its shape when it is not in place, but this returns when placed over the fuselage.

Probably the biggest problem encountered in duplicating the PL-1 was the canopy. Much has been written on methods of molding cockpit canopies. It does take some time and work. Basically, one must carve a form to the shape desired, finish it (I used Hobby-poxy Two) and then pull the heated

plastic over the form. This canopy lends itself to two-piece construction. The windshield section can be made from flat sheet and the canopy section can be pulled quite easily by hand because it is not as deep as it is with the windshield on it. Very little stretching is required. The large canopy shows off the Tatone instruments on the panel to good advantage.

A Tatone mount was used to mount the Supertigre 46. Pick a mount to suit the engine used. The engine was mounted inverted with a Tatone exhaust manifold to pipe the exhaust through the bottom of the cowl.

Build the wing over the plan. Pin down the 1/4" square bottom spar.

<p>LYNAR FIELD BOX COMPLETELY ASSEMBLED \$35.95 INDY SPECIAL \$27.49 Dark Wood Finish Folding Legs</p>	<p>DAE Power Panel MK II - 6V Pump, Starter, Glo Plug MK III - 12V Pump, Starter, Glo Plug RETAILS \$18.95 INTRODUCTORY OFFER Limited Quantity (500 units) ONLY \$13.96!!</p>	<p>12 VOLT DRY CHARGED BATTERY RETAILS \$14.95 For a Limited Time ONLY \$11.95 PROVIDES ALL POWER VOLTAGES NECESSARY FOR MODELING WHEN USED WITH DAE POWER PANEL.</p>	<p>Just What The Modelers Ordered! NOW AVAILABLE FOR 1st TIME A Charger Designed especially for 12V Battery RETAILS \$13.95 SPECIAL \$11.95</p>
<p>Super Tigre* U/C - 15 GOODYEAR RETAILS \$27.98 Special \$22.00 *ONLY A FEW - ORDER NOW*</p>	<p>Go First Class! 2 Year Guarantee MARK II ELECTRIC FUEL PUMP RETAILS \$11.95 SPECIAL \$9.49</p>	<p>Brand New WINGMASTER JR. Engine .15 - .40 R/C \$27.95 SPECIAL \$22.95 NEED SOMETHING LARGER TRY FULL SIZE WINGMASTER Engine .45 - .60 \$29.95 SPECIAL \$23.95</p>	
<p>SERIES 73 OS 50 R/C ENGINES LIST \$52.50 INDY SPECIAL \$42.00</p>	<p>CARL GOLDBERG'S POWER RETRACT SYSTEM ONLY \$29.95</p>	<p>Super Tigre 15 Diesel RETAILS \$29.98 NOW ONLY \$20.99</p>	<p>Do You Dread The Clean Up Routine? TRY KLEEN SHIELD CLEANS & WAXES in ONE Application SAFE FOR ALL FINISHES & DECALS ONLY \$2.95 Quart Sprayer Nozzle 90¢ YOU'LL BE GLAD YOU DID</p>
<p>PIPER VAGABOND By AERO PRECISION RETAILS \$32.50 SPECIAL \$26.00</p>		<p>OXFORD NYLON BLUE & WHITE FLYING JACKETS Sizes S-M-L-XL \$12.98 FREE INDY FUEL PATCH!</p>	

Indy R/C

10538 Jessup Blvd., Indianapolis, Indiana 46280

SALES (317) 846-0766

HOW TO ORDER: CHECK, MONEY ORDER OR C.O.D.
CALL FOR FAST C.O.D. SERVICE
INDIANA RESIDENTS ADD 4% SALES TAX

We Pay The Postage On All Prepaid Orders*

*Fuel & Paint Shipped by Most Suitable Carrier, Collect

IF YOU ARE OUT OF UPS ZONE, PLEASE ADD \$1.00 TO COVER COST OF INSURANCE.

Cement all W-3 and W-4 ribs in place. Block up the 1/4" sheet trailing edge spar and cement to the ribs. Add the 1/4" square top spar and leading edge. While still on the building board, sheet the top side of each panel. Remove from the board when dry and join the panels with 1" dihedral under each tip. Fit the sheeting, spars, and leading and trailing edges carefully at the dihedral break. Add the remaining ribs, landing gear blocks, aileron bellcranks and push-rods.

Since the top of the wing is sheeted, it can be fitted to the fuselage. Positioning the mounting dowels and blocks will be easier at this time. When completed, sheet the bottom surface. Build the flaps and ailerons. They could be assembled as part of the wing and cut away after sheeting instead of separately. Cut hinge slots and trial-fit control surfaces to wing. Do not epoxy until finished and ready for final coat of paint.

Carve the wing tip tanks from soft 1" thick blocks. Leave the area that butts against the tip rib flat. Epoxy in place or, if MonoKote is used as it was on the original, wait until they are covered.

I had been wanting to try MonoKote on a plane with a more intricate than usual color scheme. The fact that the real plane has a shiny finish was an additional factor that made me try it on this one. I am more than pleased with the results. The only parts of the model that were painted are the flat black inside of

If you've got a radio, we've got the cars.



Winner 1973 Nationals

Jerobee ready-to-roll R/C cars less radio

Only 29.95

If you already have proportional radio gear, here's your chance to ease into R/C car racing at minimum cost! Precision engineered Jerobee 1/12 scale cars, complete with engine and pull starter, will take any receiver servo set that fits a 2" x 6 3/4" area. Just add your radio and linkages, find the nearest paved surface . . . and you're in the R/C racing game . . . at over 240 scale mph! See your hobby dealer or write JoMac 12702A N. E. 124th Street Kirkland, Washington 98033. (Area 206) 827-8606



Jerobee Radio Control Racing Cars

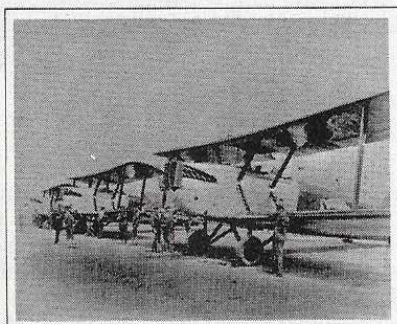
Smithsonian Institution Offers Aviation Relic

The famous Douglas World Cruiser #2, "Chicago," which made the first round-the-world flight in 1924, has been restored and will soon be put on display at the National Air and Space Museum. In restoring this fine old aircraft it was necessary to replace the torn and deteriorated original fabric which covered the wings, fuselage and tail sections. Rather than destroy this historic fabric, it is being offered to the public on a first come, first served basis.

A square of fabric approximately 2" X 2" has been cut from the best portions of the "Chicago's" discarded skin and mounted on a handsome 15" X 20" poster under a colored print of the "Chicago" and her sister ships, the "New Orleans," the "Seattle" and the "Boston."

The National Air and Space Museum makes this valuable piece of history available to the public in time for the 50th anniversary of the "Chicago's" history making flight.

This will be the first of a series, and will be issued in a limited quantity. Worthy of framing, a highlight of any aviation collection, the ideal gift for the aviation enthusiast, this historic poster is not to be missed.



DOUGLAS WORLD CRUISER #2
"CHICAGO"

Photo by Lowell H. Smith and Frank J. Arnold



original fabric

The "Chicago" was the first plane to fly over the North Pole. It is the only airplane to have made a round-the-world flight. It is the only airplane to have been used in a long-distance race. It is the only airplane to have been used in a long-distance race. It is the only airplane to have been used in a long-distance race.

**DOUGLAS WORLD CRUISER
NATIONAL AIR AND SPACE MUSEUM
SMITHSONIAN INSTITUTION, WASHINGTON, D.C. 20560**

Please send me _____ Douglas World Cruiser poster(s) at \$10.00 each.

Enclosed is my _____ check; _____ money order in the amount of \$_____.

Name _____

Street _____

City _____ State _____ Zip _____

Super tigre



Blue Head Sixty R/C

1st • 2nd • 3rd • 4th

1973 NATS EXPERT PATTERN

IT'S THE VIBES MAN!

One of the features about the Blue Head 60 that we have not touted in our advertisements up to now has been its lack of vibration. It is not hard to figure out which engines vibrate. You can tell it with some of them when they are on the test stand as the test stand wants to walk across the room. A vibration can shake things off in an important competition flight with disastrous results. Vibrations actually shake radios to pieces and cause all sorts of problems. Supertigre Blue Head 60 is a balanced engine with lightweight reciprocating parts. It is also one of the few 60s with a chrome sleeve for longer life. The '74 Blue Head will sport a new squish-band head for more power. Also, we are opening up the venturi now that everybody is flying with muffler pressure. This Tigre is like good bourbon—it's powerful and it's smooth.



\$69.95

WORLD engines

A CONSOLIDATED FOODS COMPANY • RESPONSIVE TO CONSUMER NEEDS

8960 ROSSASH AVE

CINCINNATI, OHIO 45236

the cockpit, and the black dope inside of the cowl. After over two years of on-and-off flying, the model looks as good as new. The only place that any wrinkles have shown up are on the flat sides of the fuselage below the cockpit. I have found that if the MonoKote is bonded to the wood, and not just shrunk over it, wrinkles will be avoided.

The bottom of the tip tanks have been patched due to scraping the ground but are hardly noticeable. It is far easier to repair a MonoKote-covered model than a conventional silk and dope finish. The only thing it doesn't have going for it is the advantage of the hard finish of paints. It is only as hard as the material under it. This requires gentle handling and an occasional ironing out of dents and bruises. I even used the MonoKote for hinging the flaps and ailerons. All the trim and insignias are done in Super MonoKote, not the sticky trim sheets—I find it much easier to position and apply, though not as easy to work with. Also, no sealing of the edges is required.

Each star is made up of fourteen separate pieces. There are six stars—84 pieces in all. The white center is applied first, a little oversize. Then the black ring is applied over that and finally twelve points are put on over the black. Lay out four points first, the front, back and two ends 90 degrees apart. The remaining two points between each of these can be easily located.

The flaps on this model are the most effective I have ever flown. Landings with flaps full down—about 45 degrees—are a real pleasure. When the flaps are lowered on the final approach, the nose gets a little light and it starts to sink. Apply a little down elevator and power if required. It can be brought in at quite a steep nose-down attitude without an excessive build-up of speed.

The all-flying stabilizer works very well, being smooth and not at all touchy as you might expect.

Radio installation and flying is treated as with any conventional multi. Elevator travel should be a maximum of 3/8" either side of neutral at the trailing edge.

In the air the PL-1 looks and flies like a real airplane. It is at home at a sport flying session or a contest lineup.