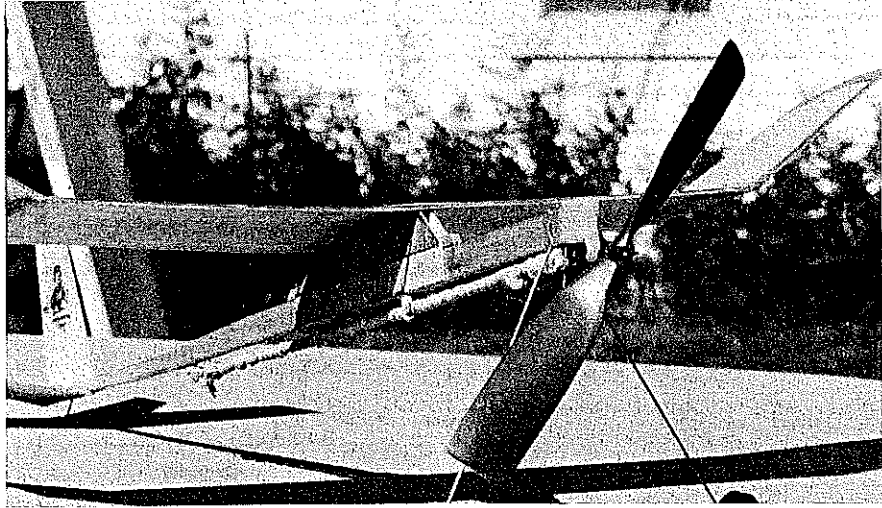


PGM TRAINER



Close-up of the power train and the pylon wing mount. The PGM Trainer flies 40 to 60 seconds on 500 winds of the motor—longer when it rides a thermal.

AS ANY parent of a high school student knows, there's no sense trying to keep up with teenage slang. No sooner do you get the latest buzzwords straight than they've moved on to something new.

Modelspak, while just as esoteric to those outside the hobby, is a lot less fickle. Take ROG, for example. Teens who build models today are probably as familiar with the term as were young modelers in the 1930s. And despite some serious competition from Nintendo and Ninja Turtles, rise-off-ground takeoffs are as much fun as they ever were.

The PGM Trainer makes an ideal introduction to ROG flying. An intermediate step in my model aviation educational program PROJECT GRANDPA: MENTOR, this nimble little fledgling can be built in two evenings for less than two dollars. That works out to a hundred flights for a quarter.

Pack the PGM trainer in a large shoebox

so the cat won't get it, and carry it on the school bus or on your bike. The model normally flies for 40 to 60 seconds on 500 winds of the motor—longer if it catches a thermal. When the clouds are right for thermaling, better bring your long-range glasses and your fastest Reeboks.

Construction

Wood selection is important. A strong, lightweight model flies like a swallow; a heavy, hardwood clunker flies like a clunker (low and slow). Scour your hobby dealer's box for 1/32 medium-weight B-C stock for the flying surfaces. Use slightly harder wood for the fuselage.

Wing. Cover the plan with waxed paper, and begin by building the center section.

Lightly mark the rib positions on the wing bottom. Wet the top of the wing, and curve it to fit the ribs. Glue the ribs in place. Push up against the 1/16-sq. leading

This 16 1/2-in.-wingspan, 15 1/2-gram ROG design is a great way to introduce young people to the fun of building and flying models.

■ Larry Conover

edge (LE), and pin it flat to the building board. Flow a strip of glue along the LE to help tack it down; the waxed paper will prevent scraping once the glue is dry. Be sure that half of each of the two outer ribs is exposed.

Build the left wing tip, then use it as a pattern for building the opposite one. Tape the right tip in place. Glue on the 1/16-sq. leading edge.

When the glue is dry, wet the top of the LE, block up the tips 1 1/2 in., and glue in the dihedral and wing camber simultaneously. Allow the glue to dry, and shape the LE.

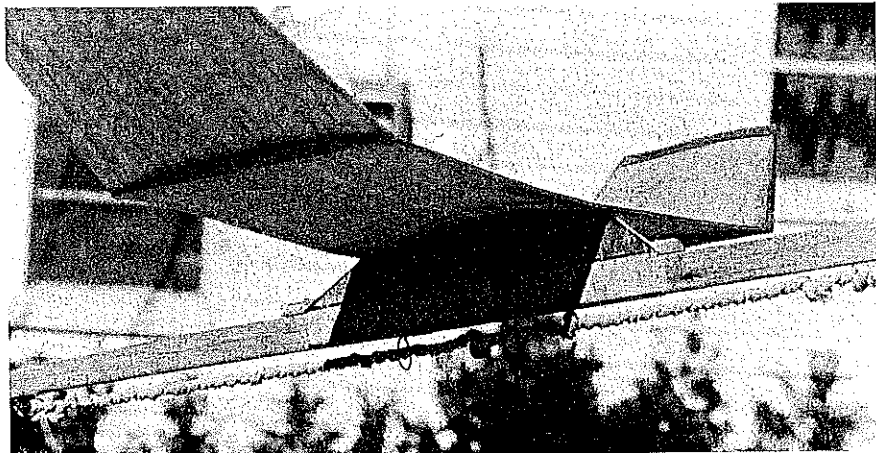
Tail surfaces. Make sure your wood is free of warpage. Cut the stabilizer in one piece. Make the .004-in. aluminum adjuster strips from soda pop cans; glue them to the bottom of the stabilizer only. Score the bottom with a clean ball-point pen, and crack in the dihedral. Apply a thin coat of glue to the stabilizer top and bottom.

Build the fin from 1/32 medium balsa, and glue it to the left side of the fuselage. The adjuster strips reinforce those fine tweaks to the rudder.

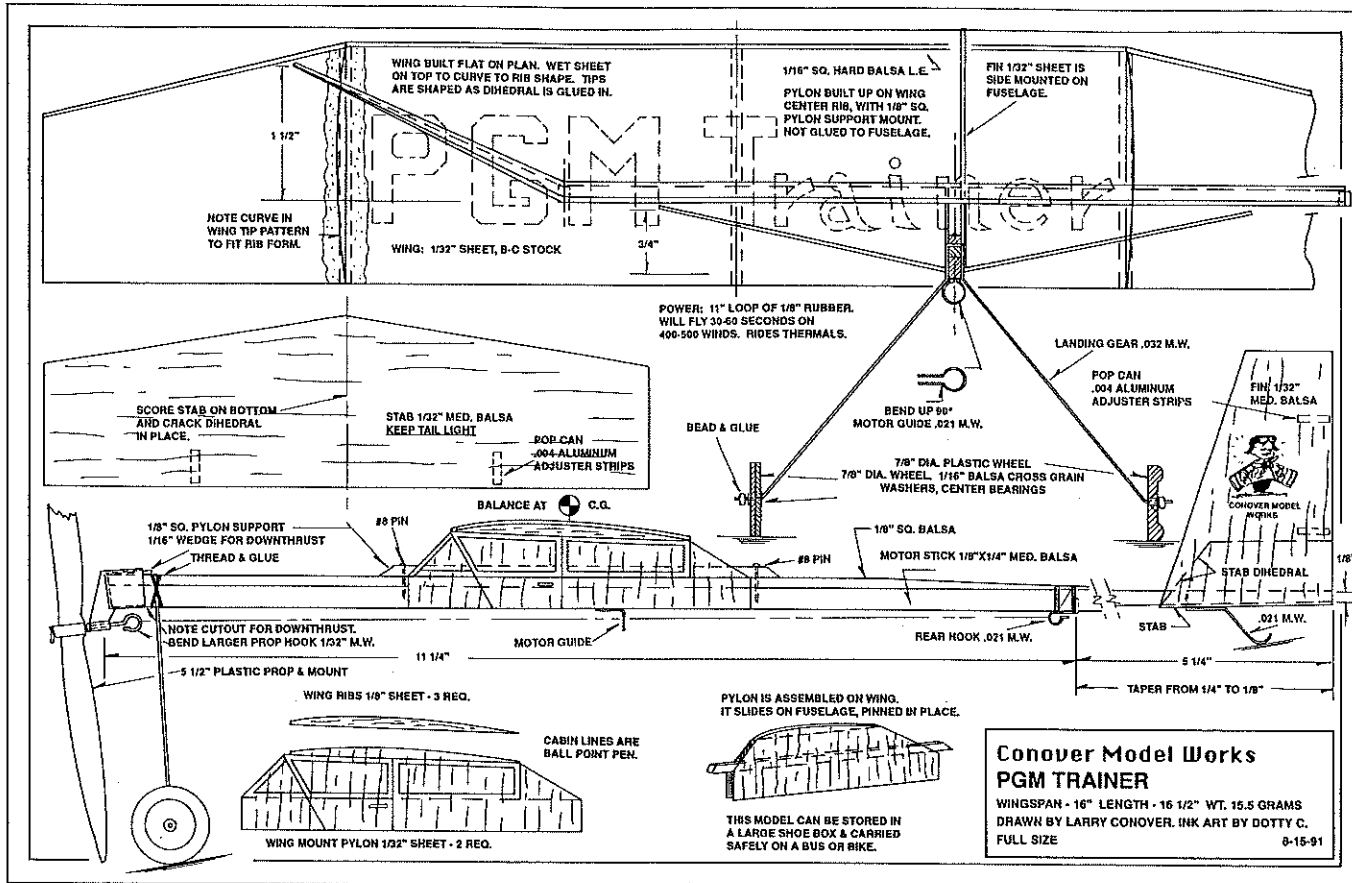
The pylon wing mount allows you to adjust the wing position for different flight patterns and weather conditions. Also, you can remove the wing and pack it in a box.

Draw the windows and doors with a ball-point pen. Mark the reference line for the 1/8-in.-sq. pylon support. Glue the support stick to one side of the pylon and then to the completed wing. Glue the other side of the pylon to the center wing rib. The right and left sides of the cabin should already have been marked. If desired, color the cabin glass with light blue marker.

Fuselage. Make certain the 1/8 x 1/4-in. main motor stick is sturdy and straight.



Another view of the wing and its pylon mount. The center bow in the wing is part optical illusion, part warp. Note the motor guide and rear hook.



Glue the 1/8-in.-sq. piece to the top. Taper the rear 5 1/4 in. of the stick as shown on the plan; it's important to keep the tail end light.

Bend the motor guide loop from .021 music wire. Wrap the loop with thread, and glue it in place. You don't want to make a big lump here, since the pylon has to slide over it.

Bend the landing gear from .032 music wire using the pattern on the plan. Bind the gear with thread, and glue it in place.

It's easiest to use a pair of Sleek Streak wheels. If you make your own, use 1/16 hard balsa with the grain running crosswise when the pieces are glued together. A bead of glue on the axles will keep the wheels in place. Add the tail skid after gluing on the stabilizer.

Now the fun begins. Make a loop of 1/8-in. FAI tan rubber 11 1/2 in. long. Lubricate the motor with Sig or Dolby rubber lube, or use 50:50 glycerin and green soap from the drugstore.

Balance the fully assembled model at the 50% center-of-gravity shown on the plan. Determine the correct position by balancing the plane on scissor tips at the bottom of the wing.

Mark the pylon position on the fuselage. Slide the pylon on the fuselage, and pin it in place without gluing.

Hand glide the trainer in calm air over a grassy field. Adjust the wing if necessary for a smooth glide. Wind 100 turns in the motor, and launch the plane straight forward. You'll probably need to bend the

Materials List

- One 1/8 x 1/4 x 16 1/2-in. medium-hard balsa
- One 1/32 x 3 x 30-in. medium B-C balsa
- One 1/8 x 1/8 x 18-in. medium-hard balsa
- One 1/8 x 1 x 3-in. medium balsa
- One .032 x 12-in. music wire
- One .021 x 6-in. music wire
- One 24-in. length of 1/8-in. flat rubber strip
- Two 7/8-in.-dia. plastic wheels
- One 5 1/2-in.-dia. plastic prop and nose piece
- No. 8 pins, thread, balsa cement

rudder about 1/16 in. to the right to offset torque and induce a right climb and glide.

The extra downthrust shown on the plan prevents power stalls in higher winds. As you progress to 300, then 400 turns, make sure the right climb doesn't give way to a

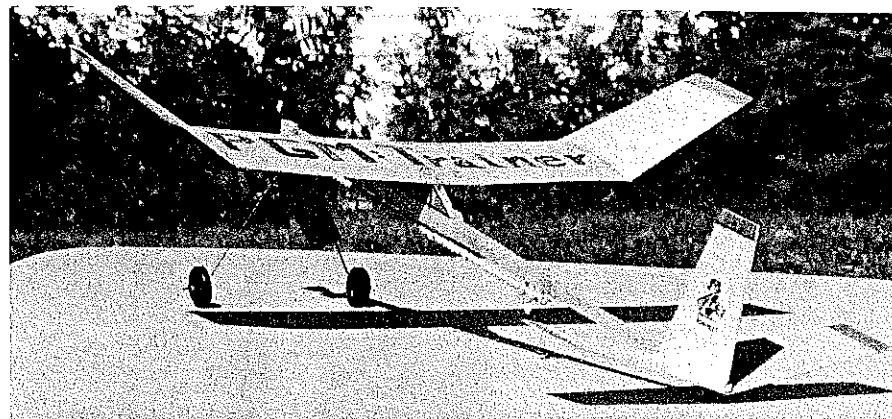
right spiral dive. At 500 turns, your motor will feel as tight as a cinch on a mule, and your model will climb like a homesick angel.

Flight tips. For longer flights on windier days, use a winder. A hand drill with a 1/16 wire hook clamped securely in the chuck is a real time-saver. At a four-to-one ratio, you can wind in a jiffy. Order a standard winder from Sig, or look for one at your local hobby shop.

Make up extra motors, lubing them and keeping them clean in a small box. Motors need to rest for about a half-hour after full winds or repeated windings; you can use a spare motor while resting another.

Bend up and down elevator in the

Continued on page 160



Summertime, soft breezes, and your own ROG model. What more could a flier ask for? The steep dihedral of the stabilizer keeps it well clear of the ground on ROG takeoffs.

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also will counteract too much right rudder turn. But watch out: This control input also can cause left spiral dives.

Want to amaze your friends? Secretly move the wing about a half-inch forward, then ROG with the motor fully wound. After a short takeoff run, the model zooms into a loop, then dives down to strafe the crowd. Boy, do they scatter! Just tell them das Boonetown Ace (Phineas Pinkham) was at the controls. *Hawww!*

Fly the PGM Trainer in your schoolyard, at city parks, even--after hours--at shopping center parking lots. A lightweight Indoor version would be perfect for banging about the girders in a field house. Either way, this simple little airplane is a great way to introduce others to the joys of model flying.

Additional plans for the PGM Trainer are available for \$1.00 plus 29 cents postage from Conover Model Works, P.O. Box 628, Longmont, CO 80502-0628.

For \$2.00 more I'll send details about PROJECT GRANDPA: MENTOR. This is

a step-by-step model aviation curriculum designed for school enrichment classes, Boy Scout and Girl Scout activities, church youth groups, and model clubs interested in organizing a tenderfoot class. I'll even include a couple of free plans.

FF Indoor/Tenny

Continued from page 63

New Jersey--Lakehurst. New dates for Lakehurst No.1: September 29, October 6, October 20, 1991. Attendance at these sessions requires strict adherence to rules.

1. You must furnish your name, driver's license number, make and model of vehicle, license plate number, and state of registration to Gary Underwood not later than the Wednesday before the meet you plan to attend. (See note below.)

2. Obey all military regulations, especially speed limits, no smoking areas, and restricted parking, all are clearly posted.

3. Certain base personnel give access to lavatories and other facilities. Please route requests for assistance through the CD.

4. Absolutely you must leave your flying area at least as clean as you find it; check with the CD about where you locate your equipment.

5. No photos allowed except in the hangar.

Note: Out of town participants who fly in and rent a car must make special arrangements regarding auto identification. Contact Gary Underwood, 9 Treelawn Terrace, Mercerville, New Jersey 08619; Tel. 609/586-3202 for more information.

New York--Columbia University. Sessions on September 22, October 27, and December 15, 1991. Due to continuing concern about campus security, it has become necessary to charge \$10 per entrant to pay a security officer. Contact Dan Marek, 210 West 101st St., No. 10F, New York, New York 10025; Tel. 212/222-1546 for details about the flying schedule. In addition, you must furnish your social security number and AMA number to Gary Underwood, 9 Treelawn Terrace, Mercerville, New Jersey 08619; Tel. 609/586-4441 at least two weeks in advance of any scheduled event. Absolutely no one will be admitted unless they are on the approved list.

Oklahoma--Tulsa. Tulsa Glue Dobbers Indoor contest at Tulsa National Guard Armory, November 16, December 21, 1991; Roy O'Mara, 9120 E. 7th St., Tulsa, OK 74112; Tel. 918/815-1424.

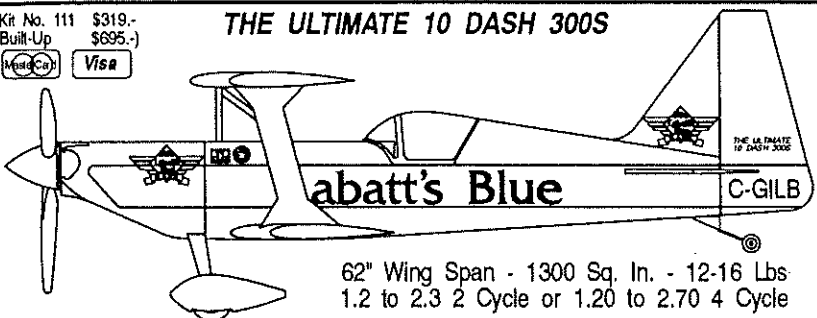
Texas--Ft. Worth-Dallas area. Contact Jesse Shepherd, 2713 Summit View, Bedford, Texas 76021; Tel. 817-282-3770. Sessions expected to start in November.

Washington State--Seattle Area. Category II Indoor meet at Naval Reserve Armory, October 26, November 26, 1991, 9 a.m. to 4 p.m. Ed Lamb, 15911 September 42nd Pl., Bellevue, Washington 98006; Tel. 206/747-7806.

Continued on page 164

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