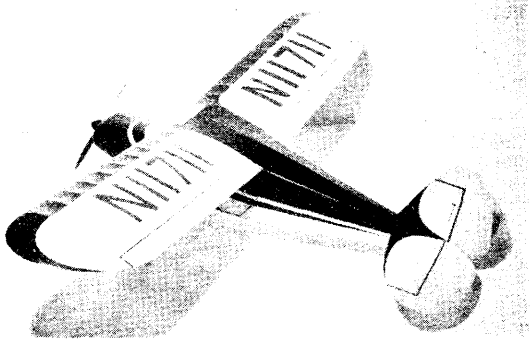
Right: This extra large Piper Pacer model was built of hard balsa and covered with silk. It weighs over 7½ ounces and flies like a bird! Lighter versions are ideal for free-flight flying-scale contests or PAA events. Heavier construction can be incorporated for R/C flying.

Below: License numbers are required on the top of the right wing only but the original was dressed up a little more by adding the numbers to both wings. The engine is fully cowled so that the true full-scale lines remain unbroken. Full-size parts are shown to simplify building.



PIPER PACER

by Earl Cayton

Fast-climbing, over-powered contest models call for nerves of steel and quick timing. Relax, try ½A scale flying for sport, contests or even R/C.

● One of the prettiest sights is a cute little scale gassie taking off, climbing, and gliding back to earth with the grace and realism of a full-scale craft. Our ½A scale Piper Pacer is a model which offers you that thrill. It's just the thing for the die-hard scale fan—or the free-flighter who wants a change of pace.

Many free-flight scale models are built very light for a super fast climb. Others are super-detailed, heavy and slow flyers. Ours is a compromise.

A scale model built under A.M.A. rules to the minimum 150 oz./cu. in. power loading requirement is too light and fast for our taste. So, the Pacer model was built to a 200 ounce loading to produce a slower, more realistic climb. The added weight permits rugged construction and the use of harder grades of balsa—even silk covering.

Our model weighs ten ounces and is almost indestructible. Careful selection of lighter wood and the use of paper covering will permit the contest-minded modeller to build a 7½ ounce version.

PLANS: Although the plans are shown quarter-size, you should have no difficulty scaling them up—all of the difficult parts, such as bulkheads and ribs, are shown full-size. Dimensions are shown, also, to help you lay out the flying surfaces and fuselage.

WING: Start construction by building the wing. Pin the trailing and leading edges down on your plan and cement the ribs in place. Note rib R-1, located at the center of the wing. Cut and fit a piece of ⅛" sheet so that it butt-joins up against this rib and is flush with ribs R on either side. This area is covered with celluloid after the wing is completed.

Add the 3/16" curved tip pieces and then insert ribs TR-1 and TR-2. Note the strip of 1/16" sheet balsa which cements against the third rib out from the dihedral break on both wing halves is an anchor for the wing struts.

After the structure has dried, add the dihedral and the spars, inserting ribs F-R as you do so. Add the ¼" sheet balsa gussets at the dihedral breaks. When the cement has completely dried, sand the entire structure smooth.

FUSELAGE: Basically a box structure, this is built from ⅛" square strips. Follow the heavy black lines, using care to build both sides exactly alike. After the box is finished, add the various stringers and spars which will contour the model. Next, cement all of the formers in place and add the 1/16" sheet covering to the front of the fuselage. Former 1 is the firewall and is made from ⅛" plywood.

Next, attach the landing gear. The main gear is detailed on the plan and is made from 1/20" sheet aluminum and 1/16" wire. It's a compromise between the "wire bird-cage" gear and the team-racer type. Mount a piece of ⅛" plywood across the bottom of the fuselage where the gear mounts. The strut bolts to this with four 2-56 nuts and bolts. Trexler airwheels were used on the original.

The tailskid is wrapped with thread and cemented to the rear of the fuselage. A small piece of ⅛" plywood will reinforce this assembly nicely. Our model used a ⅝" wheel, attached to a 1/16" piano wire skid.

ENGINE INSTALLATION: A radial-mounted Wasp was used in the original but beam mounting may also be installed if preferred. The engine was mounted so that the cylinder head was on the left side and the gas tank on the right side. Use your favorite type of tank. A fuel shut-off was installed on the right side to govern the engine run.

Carve and hollow a cowling from a very soft balsa block. Check the fit over the engine and tank periodically and carve out to a thickness of about ¼" all around. Attach the cowl to the model for final exterior shaping and sanding.

TAIL SURFACES: Simple, flat construction is used on the tail surfaces. ⅛" sheet balsa and ⅛" square strips are used throughout. Be careful to get all joints square and snug to prevent warps after covering.

COVERING: Silkspan covering should be used if you prefer a light contest model. The original was covered with 1½ yards of silk—two silk scarves purchased for 67¢ each. The type of covering used determines the durability of your Pacer. Apply at least eight thin coats of dope to obtain a smooth glossy finish. All of the parts should be covered before they are assembled on the fuselage—including the cowling and wheel pants.

FINAL ASSEMBLY: Cement the tail securely into place. Use thread to simulate the wire bracing, as shown on the plan. The wing can be held down with rubber bands or can be permanently mounted in place, whichever you prefer. If the wing is made detachable, you will have to attach the wing struts with piano wire hooks and rubber bands. We preferred the more rigid, permanent mounting.

FLYING: Wait for a calm day to make your first flights. Check the glide over tall grass. If the model dives, you will have to add a shim of sheet balsa under the leading edge of the wing. If

(Please turn to Page 44)

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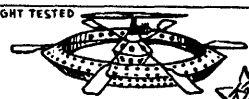

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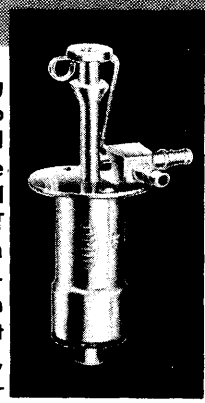

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PIPER PACER

(*Continued from Page* 15)

it stalls, add clay or weight inside of the cowling until the model is trimmed. Our model balanced at the point shown by arrow on the plan.

Adjust the rudder for a left turn under power and in the glide. The scale diameter of the prop would be 7½". This is all right for the OK diesels, but is a little large for glow engines. We used an 8" diameter/3" pitch prop which was cut down to 7½". The width of the prop was narrowed down to permit it to run at the proper r.p.m. Should you do this, make sure you balance the prop, to eliminate vibration.

BILL OF MATERIALS
(Balsa unless otherwise specified)

1—⅜" x 3/16" x 36"	Wing leading edge
1—⅝" x 3/16" x 36"	Wing trailing edge
1—3/16" x 2" x 18"	Wing tips, miscellaneous
15—⅛" x ⅛" x 36"	Wing spars, longerons, elevator, stab, stringers
2—1/16" x 3" x 36"	Wing ribs, planking, bulkheads
1—⅛" x 3" x 18"	Tail outlines
2—¼" x ⅛" x 36" (pine)	Wing struts
4—⅜" x ⅛" x 36"	Fuselage stringers
1—4" x 4" x 6" (plywood)	Firewall, reinforcements
1—1½" x 2½" x 3¾"	Cowl

Sheet of celluloid; 2" airwheels; ⅝" sponge rubber wheel; 1/16" piano wire; sheet of 1/20" aluminum; eight 2-56 nuts and bolts; washers; piece of 1/32" i.d. aluminum tubing; thread; fuel tank; Kading timer; .049 engine; cement; clear dope; colored dope; fuel-proofer; silk or silkspan to suit.

WHAT'S COOKING?

(*Continued from Page* 25)

Handle, recommended for use with the "ABC Trainer" are also now available. They may be used with any conventional Class A, B or C control-line model, either stunt, sport or scale.

● **KADING SPECIALTY CO.** (Compton, Calif.) has made available a new fuel-shut-off flight timer, called the "Timit." One of the highlights of this unit is the fact that the inlet and outlet tubes are mounted at a 90° angle to one another, for easier tank-to-engine hookup. A positive acting needle adjustment is used for split-second adjustments. The die-cast body of the timer is made of aluminum alloy, the shut-off shaft of stainless steel. The timer retails for $2.25—not $2.95 as erroneously listed in our August issue.

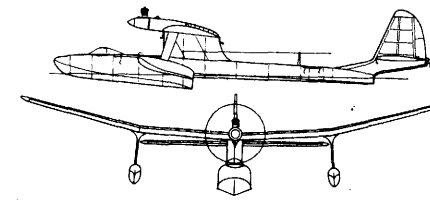
● **MODEL AIRFRAME ACCESSORIES** (Bellflower, Calif.) announces that their "Deslacker" now sells for $1.95. This small, easy-to-assemble device is a small vertical wing which connects to the outboard wing tip of the model and is hooked up with the bellcrank. When the lines go slack, the unit turns like a rudder and steers the model to the outside of the circle. The device can be used on all sizes of controliners, and permits the use of greatly extended flying lines. Full instructions are included.

● **CHEMINOL CORPORATION** (Rivera, Calif.) announces that new detergent ingredients have been added to all O&R fuels, providing detergent cleansing plus permanent bonding of lubricants and nitrates. A new price schedule has also been announced: $1.75 a quart; 90c a pint; and 50c a half-pint, on Ohlsson & Rice AA, No. 2, No. 4, No. 1, No. 3, and Diesel fuels.

Also newly introduced is O&R "Hellz Fyre," the speed fuel which made its debut at the 1954 Nationals, and is claimed to be the fastest and hottest model engine fuel ever developed (based on results of extensive laboratory and field tests). "Hellz Fyre Speed Fuel," a distinctive purple in color, sells for $1.25 a pint.

● **PACTRA CHEMICAL CO.** (Los Angeles 38, Calif.) now offers hobby dealers a special Aero Gloss Spray Can Display Rack, holding 24 cans of Aero Gloss Spray Dopes. The rack is available through local jobbers. Included in a special deal are two dozen 12-ounce cans of Aero Gloss Spray in assorted colors; a dozen Handy Screw-on Trigger Valves; the space-saving Merchandising Rack in bright chrome, which hangs on the wall or fits conveniently on the counter; colorful window sheets; a supply of booklets on "Model Airplane Finishing"; and an Aero Gloss Color Chart.

● **BERKELEY MODEL SUPPLIES** (West Hempstead, N. Y.) has just introduced Henry Struck's "Sea Cat" amphibian plane in prefabricated kit



BERKELEY'S "SEA CAT"

form. The model has a 68" wingspan and features a long-planing hull. The kit sells for $7.95.

Another new model is the "Super Cadet" (latest version of the popular "Interstate Cadet" contest design), for ½A gas or rubber power. It may be flown free-flight or converted for control-line flying. The prefabbed kit sells for $2.95.

Also now available is the "Cessna 180," a 1" to 1' scale model of Cessna's newest light plane. Designed for free-flight, using a ½A gas engine, the model may be adapted for rubber power and also for control-line flying. The prefabbed kit sells for $2.95.

● **TATONE PRODUCTS** (San Francisco, Calif.) is now manufacturing a tripper device for use with dethermalizer timers. The unit, made of aluminum sheet and steel wire, looks and operates like a miniature mouse trap. Through its use, it is possible to locate the dethermalizer timer in the forward part of the model and still secure enough tripping force to operate a pop-up tail section. The unit sells for 75c.

● **MONOGRAM MODELS, INC.** (Chicago, Illinois) has added an all-plastic "Hot-Rod" car kit to their ever-growing list of beautiful plastic display models. It's an authentic scale model of the 1932 Ford V-8 Roadster, stripped of fenders, hood and top, and with channelled body, dropped and filled front axle, and a racing-head engine. The kit sells for 98c, complete with fully-shaped, molded acetate plastic parts.