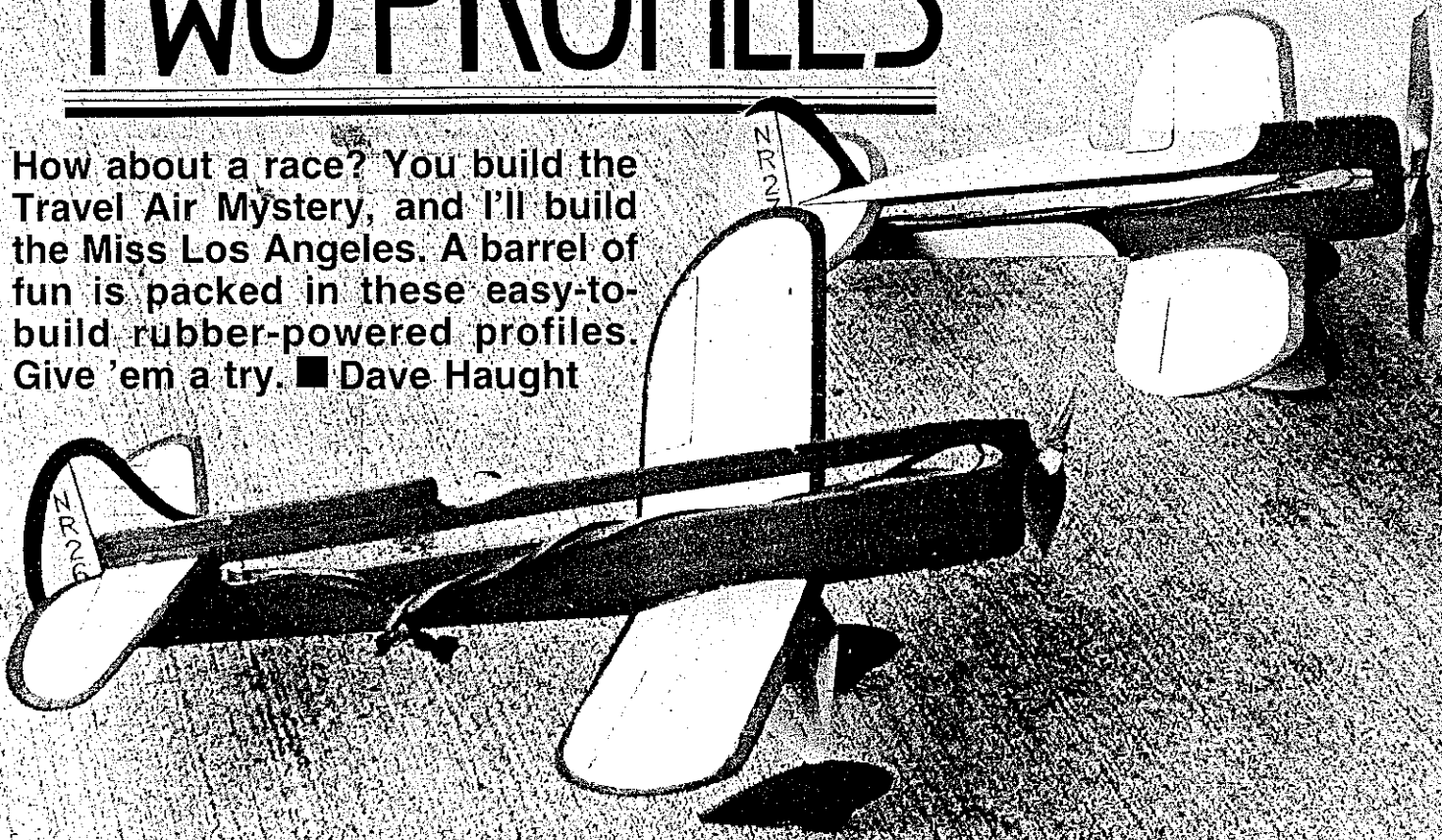


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# TWO PROFILES

How about a race? You build the Travel Air Mystery, and I'll build the Miss Los Angeles. A barrel of fun is packed in these easy-to-build rubber-powered profiles. Give 'em a try. ■ Dave Haught



Looking for a club event or a chance to try your hand at trimming a low-wing model? You can have a lot of fun at the same time with these easy-to-build classic air racers from the Thirties. Quick, attractive color schemes can be applied with colored felt-tip markers and pens.

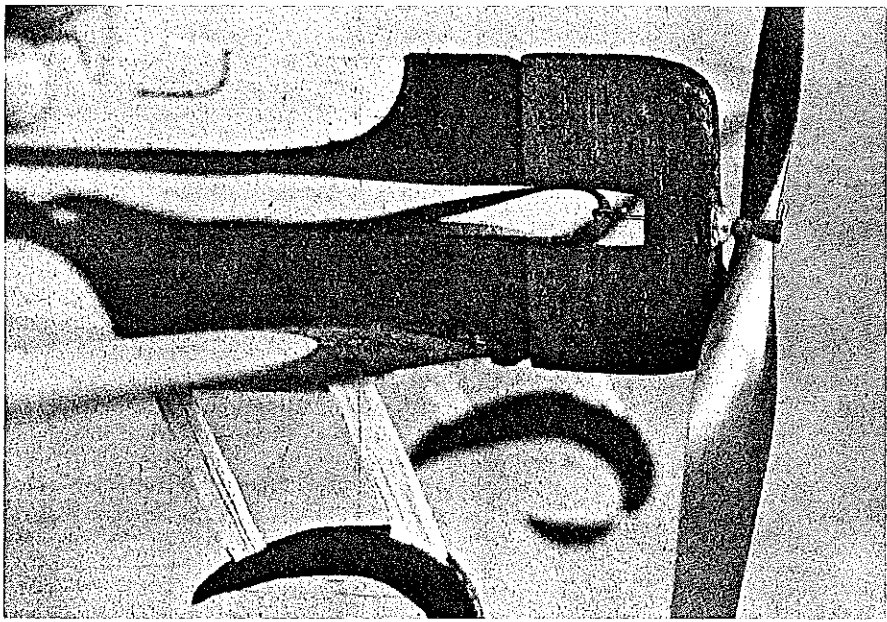
WHEN WAS THE last time you built a fun model? Sure, all models are fun, but how long has it been since you treated yourself to one of those childhood dreams, like racing

your own Travel Air Mystery around the pylons in hot pursuit of that red Miss Los Angeles? I don't know how many times I got caught daydreaming at mid-race by my

teachers in school.

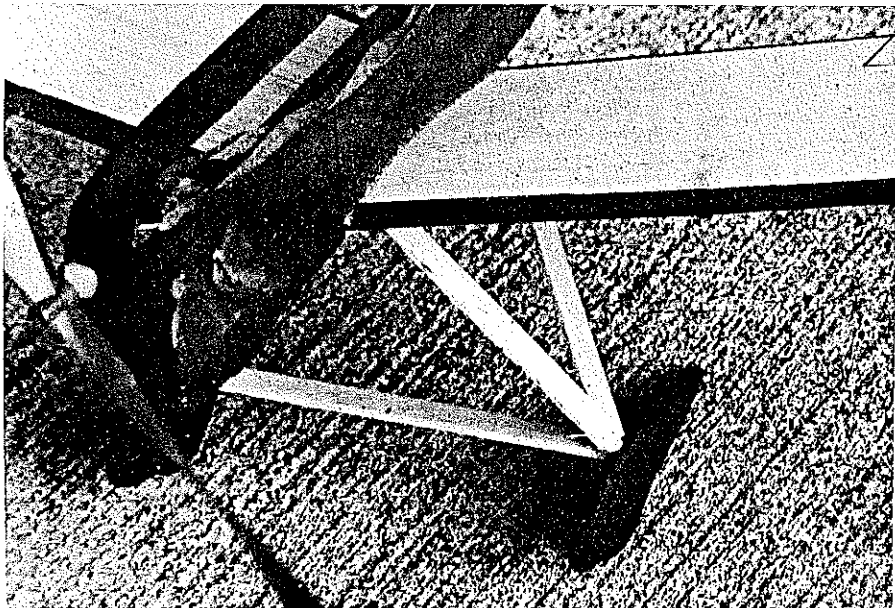
There is just something about those racers that gets in your blood. I think it was this condition that prompted me to build these two racers. The profile design was chosen for speed and simplicity, which were important considerations since they were built in a motel room with a minimum of tools and supplies. It should be no problem to put one of the two together in an evening when using the fast cyanoacrylate glues that are available.

In the theme of fun, the two models are just eyeball scale, but they do look good on the shelf and in the air. They both perform very well indoors and out. Keep them light, and they will not disappoint you. Just envision them climbing off into the sunset together!

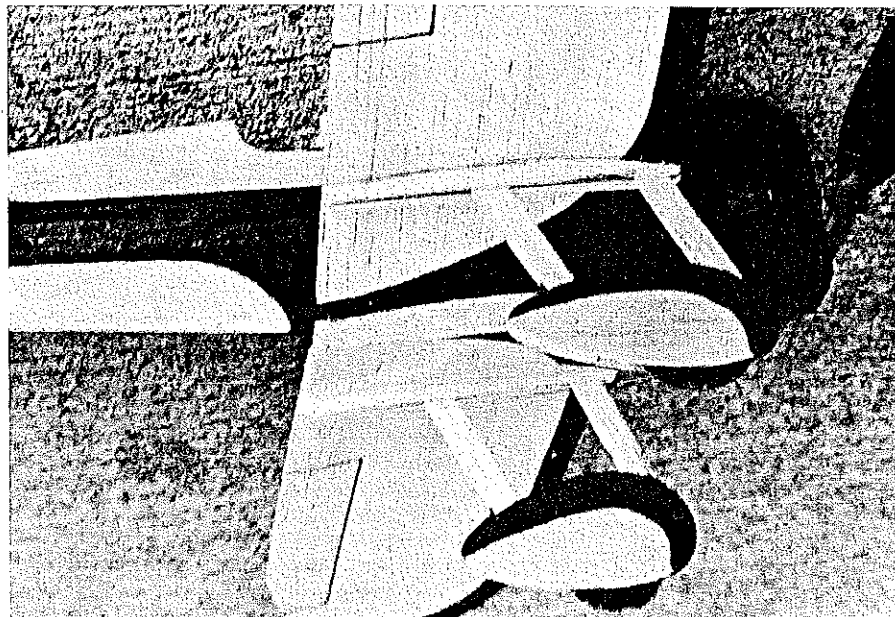


The motivating end of the Travel Air. Note the nose doubler, thrust bearing, and prop assembly. The two planes are simple to build and rugged enough for a lot of backyard flying. A single loop of 1/8-in. rubber keeps the plane up and the price down.

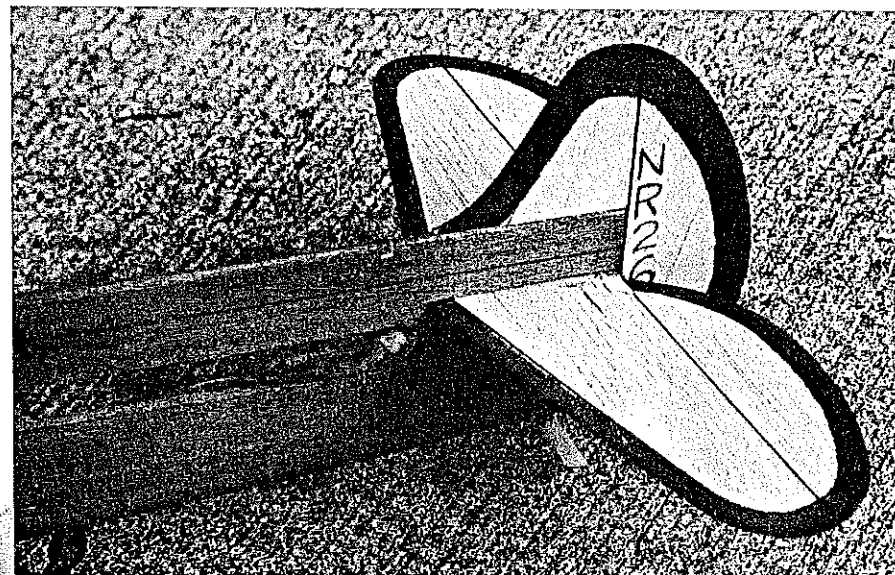
Start by cutting out all the parts from medium-light balsa, except where noted. Use the harder balsa for the landing gear parts. Once all the parts are cut out, sand the edges and decorate the units before assembling. I used a set of felt-tip marking pens and a ruler to decorate the originals. This takes very little time, and the trim adds so much to the finished appearance. It is also a lot easier to decorate the different parts before they are assembled.



Miss Los Angeles sports a rigid landing gear. Use of hard balsa for the struts helps to prolong the model's life. Note modeling clay on the nose, used to get the correct balance point (CG). After final trimming, the clay will be replaced with lead solder to improve the model's appearance.



On the Travel Air landing gear, the struts plug into the gap between the wing ribs. On hard landings, the gear pops out, saving the gear and the wings from damage. Thin balsa wheels fitted into the simple wheel pants go a long way in adding charm to this otherwise simple model.



Since both models are quite similar in construction, I'll comment on the differences as they come up.

The wing assembly comes first, as the glue has to dry completely before the wing can be affixed to the fuselage. Glue the ribs to the underside of the wing panels, as shown on the plans. Make sure you build one right and one left wing panel. Use the dihedral guide to set the proper angle for the root ribs (and also the landing gear mounting ribs on the Travel Air). Let the panels dry completely before sanding the root ribs in preparation for joining the panels. Fit the two panels so there is no gap when they are joined with 1 in. of dihedral under each tip. Then glue them together and set aside to dry.

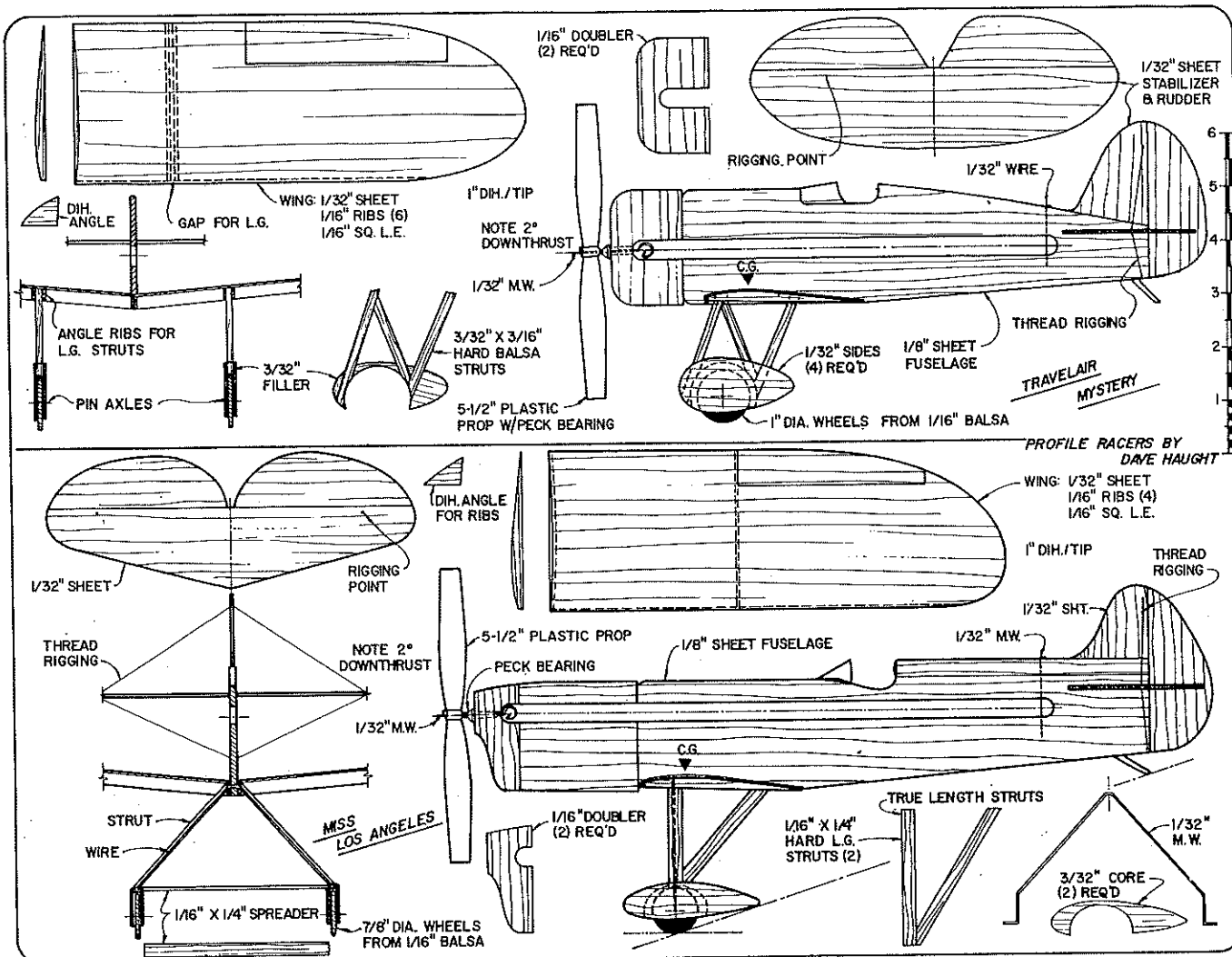
In the meantime, glue one of the two nose doublers to the fuselage. After it has set, fit the Peck-Polymers nose bearing in place. Make sure it has the proper downthrust shown on the drawing. Bend the propeller shaft from 1/32-in. music wire, and slide on the bearing, a set of small washers, and then the propeller. Bend over the end of the wire as closely as possible to allow for free propeller and hook clearances. Then fit the assembly into the fuselage, and glue the bearing in place. Also glue on the second nose doubler. While this is drying, cut out and add the tail skid and the rear rubber retaining wire.

Slide the stabilizer into the slot in the fuselage, check the alignment, and glue it in place. Add the rudder, making sure it is mounted straight and square. When this assembly is dry, add the thread rigging for extra strength and realism.

When the wing assembly is dry, fit it to the fuselage. Trim the joint carefully to assure a good fit. Glue the wing in place, and set it aside to dry. Make up the landing gear parts, and assemble them as shown. On the Travel Air the gear can be just a friction fit into the slot formed by the wing ribs; this saves the wing and landing gear from damage on hard landings. The Miss Los Angeles has a wire base gear for strength; glue all the gear parts well, as they take the brunt of the landing stress. Use light balsa for the wheel pant parts, and hard balsa for the struts and wheels. A short piece of aluminum tube could be added to the hub of the wheels for a bearing, if desired.

Flying. Now, you can either sit back and admire your creation or get it ready for that first race. If you plan to hand-wind the motor, cut a loop of 1/4-in. rubber 1 in. longer than the distance between the front hook and the rear rubber retaining wire. If you plan on using a winder for longer flights, make the loop 2 in. longer. The final rubber length will be determined after you've flown the model a few times. For now, make up the motor as described, and install it.

Detailing makes the airborne model look very real. For ease of application, put on the color before assembling the parts. The rear rubber retaining wire is removable for changing motors and winding. With these models, you can learn a lot about adjusting techniques.



Hand-wind the motor about 50 turns to take up the slack, and pin the propeller so it doesn't unwind. Balance the model with modeling clay or lead solder until it is at the location shown on the plan. This is an important step, especially for low-wing models. Improper balancing will probably result in spluttering your new racer on the first full-power run.

With the balance point properly located and the propeller still pinned, give the model a few test glides over grass. Repeat the gliding tests until you have a consistently flat glide without any turns. If the model has a definite desire to turn one way or the other, check it for warps. Remove any you find with a steaming tea kettle or pan of boiling water; twist the section to remove the warp. Retest the glide.

Begin the powered flight tests with around 50 turns of the rubber motor, then 75, and on up in increments of 25. If the model shows tendencies to roll off to the left, compensate with slight amounts of right rudder. It may be necessary to wash in the right wing panel 1/8 in. to prevent the model from spinning-in under power.

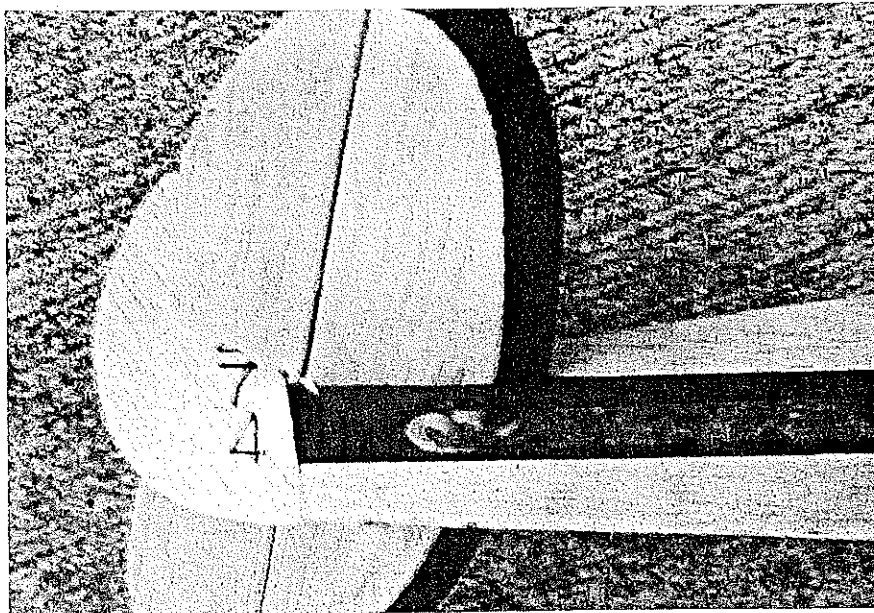
Both of the original models fly with 1/16 in. of right rudder and 1/8 in. of wash in on the right wing. The power pattern is a gentle right-turning climb, which goes into a left-hand circle in the glide.

If the model tends to zoom to the right or

left and stall or roll under power, add more nose weight, and go back to the first trimming steps. I've found that nose weight has a tremendous stabilizing effect on low-wing models. After the trim is worked out well and the model is consistent in its flight path,

you may want to try reducing the nose weight a small bit at a time. However, if the zooming tendency returns, replace the weight. In a severe instance of zooming, it may be necessary to add more downthrust;

*Continued on page 162*



These planes provide a high return in fun for a low investment in time and materials. Keep them lightweight and unwarped for best flight results. Large stab and rudder helps with stability.

# Tornado PROPELLERS

Made of polyester, do not boil or color.

Go to GRISH... the No. 1 propeller.

True helical pitch and airfoil for more "win-power"

5-3	2 Blade Tractor	each
5-4	5 1/2 3	50c
	6 3	6 4
7 4	7 6	7 8
8 4	8 6	8 8
9 4	9 6	9 7
9 8	10 4	10 6
11 4	11 6	11 8
12 4	12 5	12 6

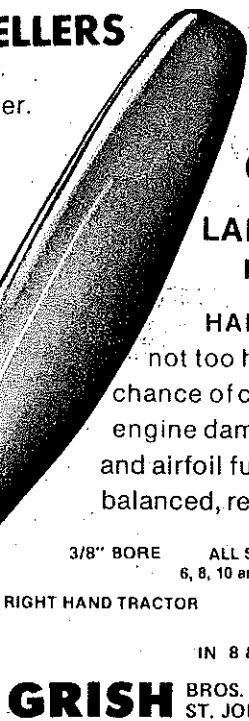
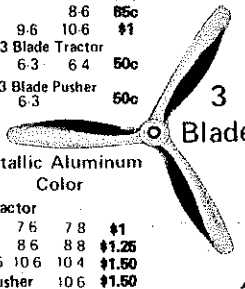
Sizes, pitches, styles, for most needs.

AT YOUR DEALER

5 1/2 3	2 Blade Pusher	
5 1/2 4	6 3	6 4
	8 6	8 8
	9 6	10 6
3 Blade Tractor	5 3	6 3
3 Blade Pusher	6 3	

Metallic Aluminum Color

Tractor	7 6	7 8	8 8	8 10	8 11	8 12
	9 6	10 6	10 4	11 50	11 50	11 50
Pusher	10 6	11 50				



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HARDWOOD... but not too hard, minimizes chance of costly plane and engine damage. True pitch and airfoil fully finished and balanced, ready for coating.

3/8" BORE	ALL SIZES IN	18"	\$7
	6, 8, 10 and 12 PITCH	20"	8
RIGHT HAND TRACTOR		22"	10
		24"	13
	IN 8 & 10 PITCH	26"	\$16

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## Two Profiles/Haught

Continued from page 69

this is a rather extreme measure which should be used only as a last resort.

The effort it takes to build just one of the models is almost the same as that required to build them both. Why not try them both? Whoever heard of a race without a challenger?

The Miss Los Angeles has a longer fuselage and a longer motor run; I use this to balance out the race. Wind both models, and pin the propellers. Launch the Miss Los Angeles first, then—quickly—the Travel Air. The flight times and patterns should be about the same.

Have your own Bendix Trophy Race in your own backyard. How's that for fun? Better yet, get your whole club in on the fun.

## CL Speed/Hempel

Continued from page 73

products mentioned in this month's Speed column: *Master 2.5cc Cipilla .15 diesel* available from Bayou Products, P.O. Box 8628, New Orleans, LA 70182 (Phone: 1-800-535-2568); *Graphite Ultra-Ply* available from Twinn-K Inc., P.O. Box 31228, Indianapolis, IN 46231; *K&B Cox .15* available from K&B Manufacturing, 12152 Woodruff Ave., Downey, CA 90241; *Piston Reset Tool* available from Davis Diesel Development, P.O. Box 141, Milford, CT 06460; *OPS .15* available from P&G Metal Products, 301 N. Yale Dr., Garland, TX 75042.

Gene Hempel, 301 N. Yale Dr., Garland, TX 75042.

## Shopping/Young

Continued from page 80

from you to pay for this?" With grin disappearing, I forked over the \$20 bill, knowing how we all borrow from our spouses and never repay. As we left the store I noticed my wife now had a wide grin on her face. I asked, "What's so funny, dear?" She replied, "Sometimes I don't realize we need so many things. I'm glad you came along tonight."

Next time, I think I'll stay home and watch a ball game on the boob tube.

## CL Scale/Boss

Continued from page 71

models. One is a Convair XF-92A delta-wing research aircraft, and the other is a Grumman F9F-2 Panther Jet—not the original *Mechanix Illustrated* design, but one of his own. Both models are powered by Dyna Jet engines, weigh about 6 lb., and are built to a scale of one in. equals one ft., which provides models of 31- and 40-in. wingspans, respectively. Both models fly extremely well and attain speeds of 75-90 mph.

Continued on page 164

of substituting sheet for built-up structures. "Beef-up the built-ups" is the policy.

The universal use of dethermalizers has led to the necessity of strengthening the wing structures of most models. It seems the landing shock is more negative load than anyone planned for in the pre-DT days.

One of the most popular solutions to this problem is adding spars to the upper surface of the wing: usually three evenly-spaced strips of 1/8-in. (by as deep as needed) equally-spaced in the first 30% of the chord. Hmm! Those things look an awful lot like *turbulators* (devices to disturb airflow ever so slightly and effect an increase in lift). These multi-spars, as they are called by designers, also help maintain airfoil shape by reducing covering sag between ribs.

The question is (and it comes up fairly often in skull sessions): does this modification violate the modification rule?

There is no question that turbulators do improve lift. Some time ago (I've lost the issue), the National Free Flight Society published a paper in their Symposium report on effective placement of turbulator cords on the upper surface of Nordic glider wings. The author advocated trimming the glider for a perfectly straight hand-glide in dead-calm conditions, preferably in a gymnasium. Once this was achieved, a turbulator cord was taped in place on one wing, the other remaining unturbulated. The model was then hand glided and observed for turning tendency. The turbulated wing would rise from its additional lift, causing the model to turn toward the unturbulated wing. The cord position was then relocated and the test repeated. The final and proper location of the turbulator was determined to be the position generating the most turn.

As further evidence of the affects of multi-spars, I once had a Starduster 900 with a mediocre glide. No amount of trimming seemed to increase the glide performance.

Out of desperation, I removed the covering and installed three 1/8 x 1/4 (on edge) auxiliary spars spaced between the leading edge and the main spar. Result: instant glide improvement!

Let me make it perfectly clear (where have you heard that before?) that I am not condemning the practice, as I do it myself. I'm only relating a concern. A Contest Director *could* disqualify such a modified model. I welcome your comments on this subject.

**New kits.** Many Old-Timer modelers would never consider building from a kit. To some, it's a matter of pride; to others, it's the selection of wood that deters them; but, all of us are finding our free time getting a little scarcer each year, and kits substantially reduce building time.

For years, P&W Models has been producing partial kits of selected Old-Timers. In case you are wondering what a "partial kit" is, it is simply all the curved parts: ribs, formers, wing tips, rudder outline, etc. The modeler supplies all the strip wood and sheet from his stock or the local hobby shop.

Hobby Horn (15173 Moran St., P.O. Box 2212, Westminster, CA 92683) has carried the P&W line for some time. *The Chit Sheet*, edited by Bob Sliff, has just announced four new P&W partial-kits (and will also be offering them as full kits) of some of the most popular models on the circuit. They are the Lanzo Record Breaker, 96-in. span (1,256 sq. in.); Megow Super Quaker, 76-in. span (746 sq. in.); the Kloud King, 66-in. span; and the Berkeley Brigadeer, 58-in. span (473 sq. in.).

Most of us have more building projects on our list than we could ever hope to build in a lifetime, but partial kits can get us a little further down the list!

Clarence Haught, 3226 Honeysuckle Dr., Coeur d'Alene, ID 83814.