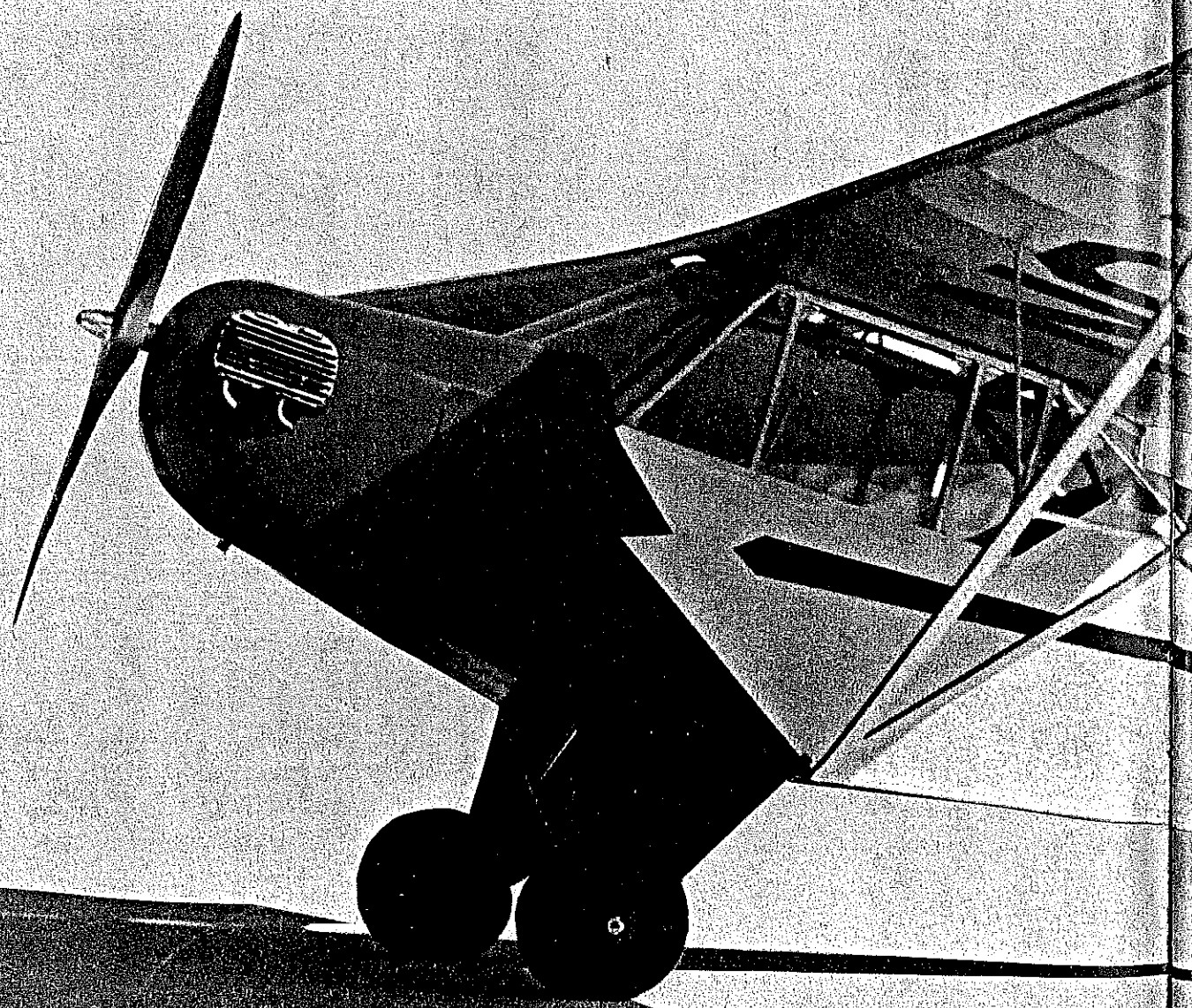


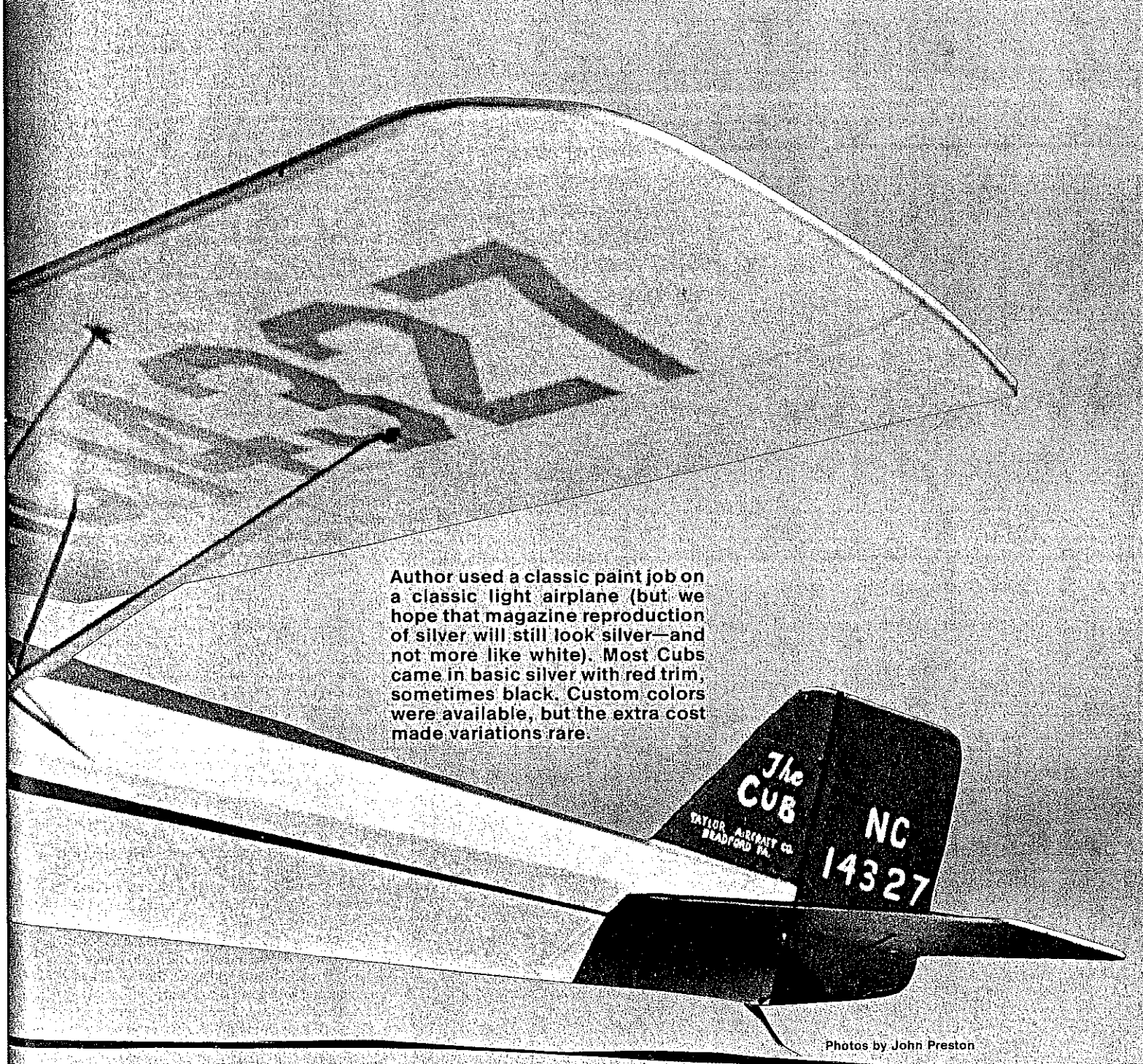
Don Srull

Taylor

A Schoolyard RC Scale model of the famous 1935 Cub for $\frac{1}{2}$ A power and two- or three-channel mini systems. It's just the right size and speed for operation from small flying sites.



CUB E-2

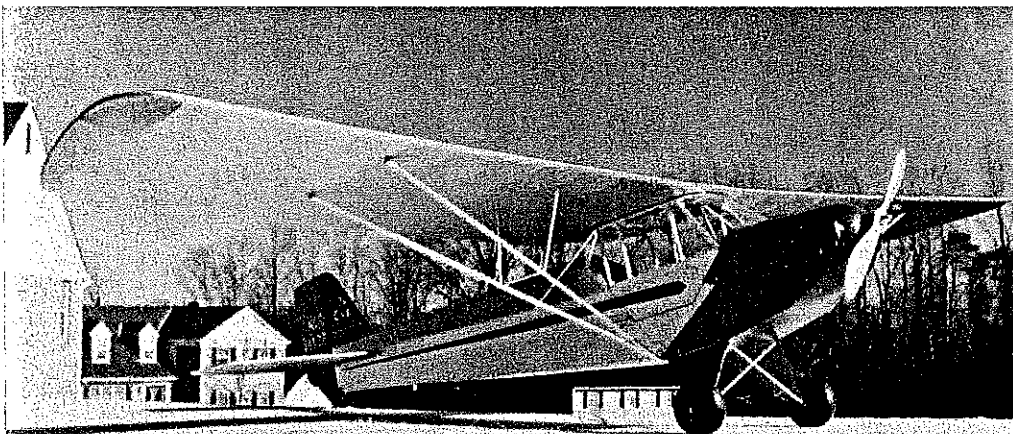


Author used a classic paint job on a classic light airplane (but we hope that magazine reproduction of silver will still look silver—and not more like white). Most Cubs came in basic silver with red trim, sometimes black. Custom colors were available, but the extra cost made variations rare.

Photos by John Preston



Removable cowl with dummy Continental 40 engine camouflages the inverted Cox .049 engine. Minimum dihedral helps scale appearance, and provides adequate stability for rudder-elevator controls.



All that wing area in conjunction with a total weight of just slightly over a pound is the secret of this model's superb flying ability. An over-propped .049 is all she needs for power.



The author holds his favorite Schoolyard Scale RC model. It is still going strong after four years of heavy flying. Snull is a prolific Scale model builder in most all categories.

ANY LIST of all-time trend-setting aircraft would have to include the ubiquitous Cub. Mr. Taylor's modest entry into the commercial sport airplane market on the eve of the great depression helped to shape the face of aviation in the U.S. and throughout the world. This little two-place wonder made flying available to hundreds of budding aviators, and helped to revitalize the local airport businesses, which had all but withered away during the depths of the depression.

The Cub's low purchase price and low operating costs were targets for the rest of the market to shoot for. The Cub established the flat, opposed four-cylinder aircraft engine as *the* standard for efficiency, simplicity, reliability, and economy. Before long, "Taylor Cub" meant small, light-plane, just as "Coke"® meant soft drink.

The Cub was actually three different designs. First came the Taylor Cub E-2, then the Piper Cub J-2, and finally the most numerous and well known Cub of them all, the Piper Cub J-3. Of these three basic designs, I personally have always preferred the more classic lines of the original E-2 as a modeling subject. Somehow, the straighter lines and the very basic shape of the old E-2 has an appeal that the later versions lost. In any event, the subject chosen for this Schoolyard Scale RC model is the original Cub—the Model E-2.

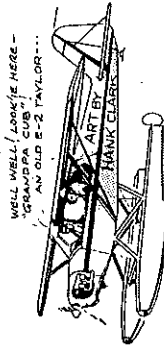
The prototype model was inspired by the old Megow giant rubber model. It was beefed up a little, and the scale outlines were improved somewhat, before adding the Cox .049 and the modern mini two-channel radio. It's true that anyone should expect a high-wing cabin model like the Cub to fly well, but the E-2 surpassed all reasonable expectations. It turned out to be one of those extraordinary and lucky combinations of size, weight, and looks that happen only rarely. The little ship is a remarkable performer—smooth, very realistic, and easy to fly. It has been my favorite sport RC model for the last couple of years.

The prototype model weighed 18 ounces, using a mini two-channel radio for elevator and rudder control. This model has also been flown on an Ace pulse-rudder system with very good results. Some of the newer throttled .049 to .06 engines may prove reliable enough to go to three channels. Whatever system you use, the Cub E-2 will be hard to beat for a simple, scale, just fun airplane.

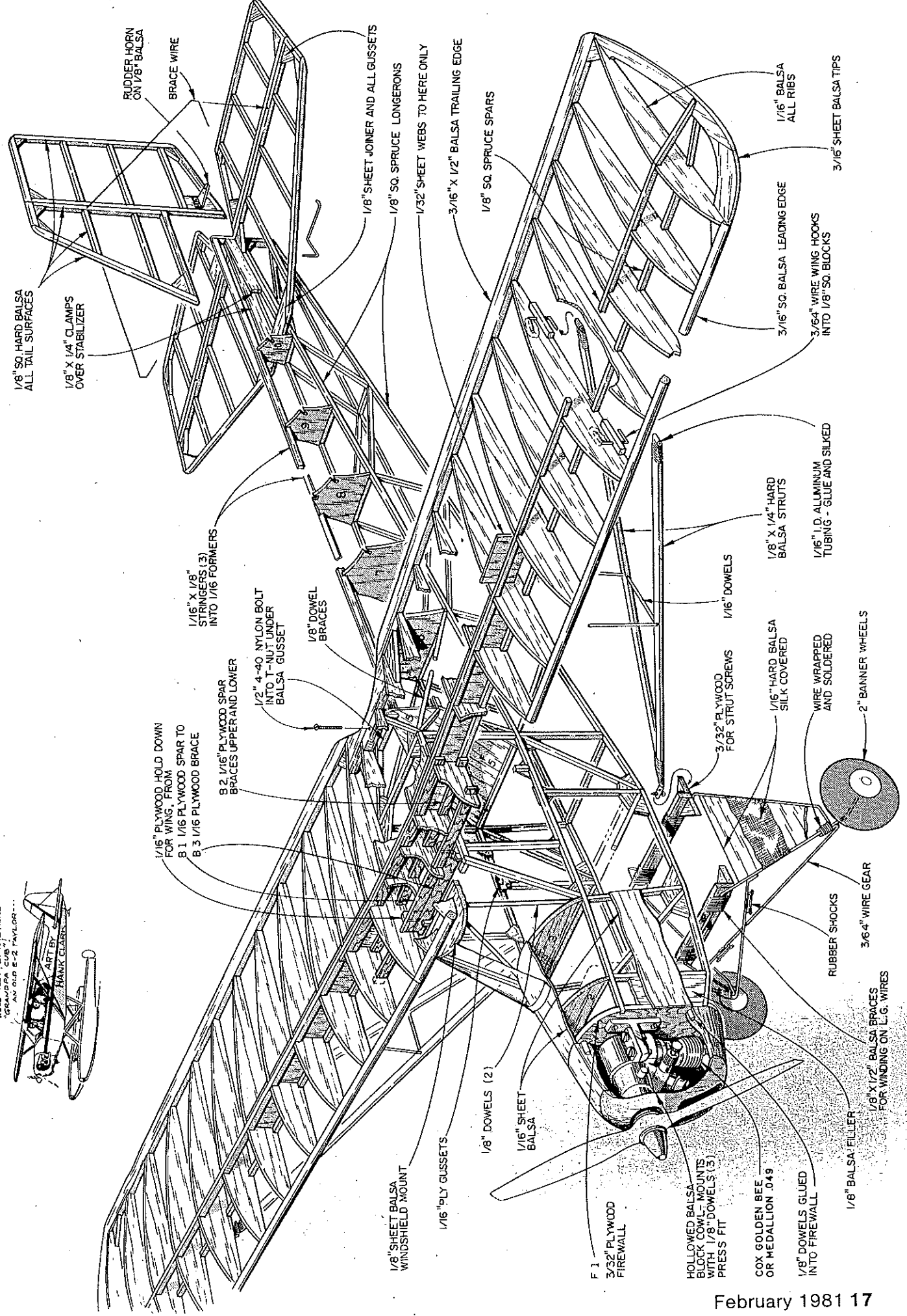
The full-scale Cub. The Cub's family tree began with a neat little side-by-side, two-place parasol designed in 1928 by young C. Gilbert Taylor of Rochester, NY. Mr. Taylor called his Kinner-powered monoplane the Chummy (side-by-side seating, get it?). It was a fine airplane, but at a price of almost \$4,000, the market just wasn't there, and less than 10 were built. Undaunted, Taylor got some financial backing for a new venture. One of the new stockholders was a businessman named William T. Piper. Together, Taylor and Piper decided that their best future was in a very simple, very inexpensive airplane that the average guy could buy and fly.

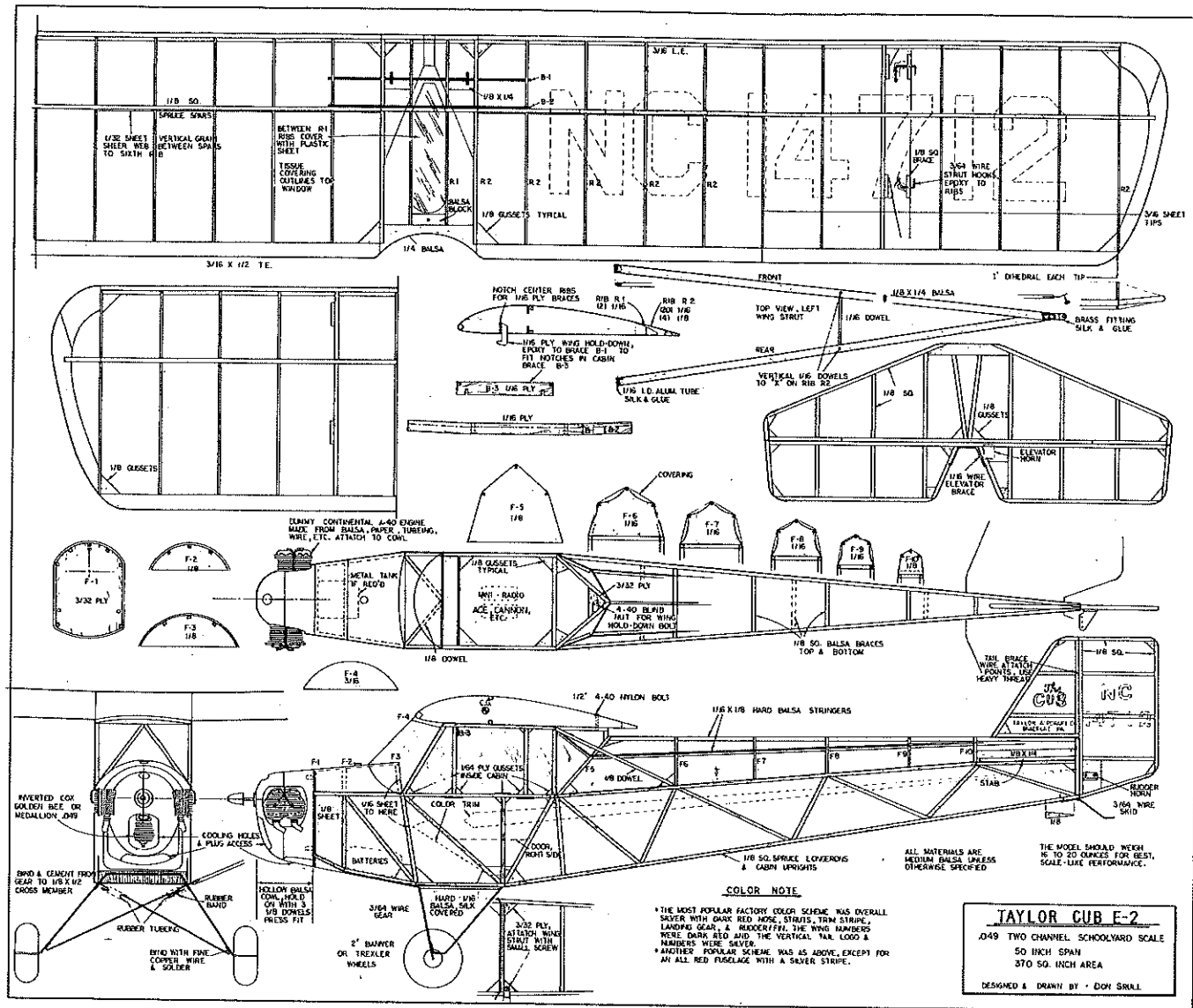
In 1930, the first Cub appeared—and initially it was a complete fizzle. Test flights showed that the little monoplane could not get above six feet altitude on its pathetic little 20-hp two-cylinder Cleone engine. Next, a 40-hp nine-cylinder French Salmson engine was tried, and the performance improved dramatically. But the basic idea of the Cub was defeated with the Salmson; it cost too much, and with its nine miniature cylinders, it was almost as costly and complex to maintain as a P&W Wasp! Something critical was still missing—the correct engine to complete Mr. Taylor's dream airplane.

One of the great and wonderful accidents of aviation history occurred at about this time. A



WELL, WELL! LOOKIE HERE -
"GRANDPA'S COB"
- AN OLD EYE TAYLOR...
ART BY
HANK CLARK





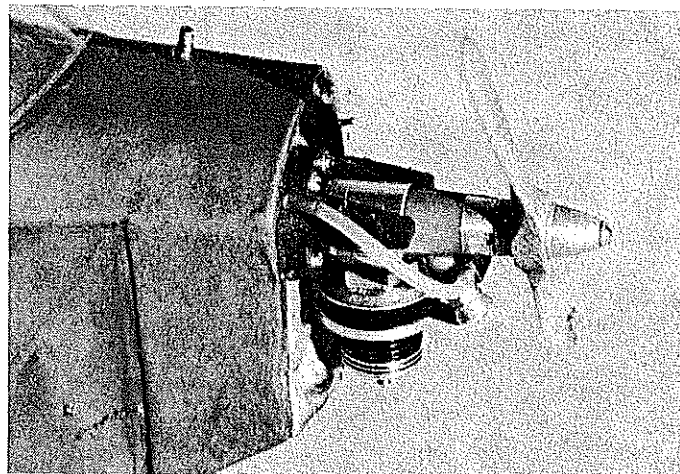
company in Michigan called Continental had begun a search for potential users for its brand-new, and rather novel, four-cylinder 37-hp engine. Continental's designation for this flat, opposed engine was A-40. Like they say, the Cub and the A-40 went together like bacon and eggs.

Production was begun, and it slowly picked up until a total of 351 Cubs were sold by 1936. Little local airports came back to life, as the little Cub became a permanent fixture in American aviation. (An F-2 model was also offered with

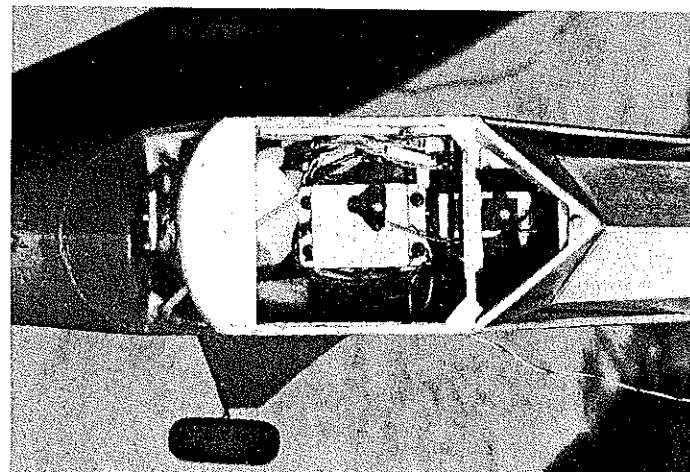
the 40-hp three-cylinder Aeromarine engine, but it was not nearly as popular as the Continental-powered E-2.) The Cub's low price of under \$1,500, and a clever installment buying plan, kept sales at a profitable level all through the worst of the depression. Its modest operating and maintenance costs became the new standard for sport aviation.

The simple appearance of the Cub hid the truly fine piece of aerodynamic and structural engineering by Mr. Taylor. To get even modest per-

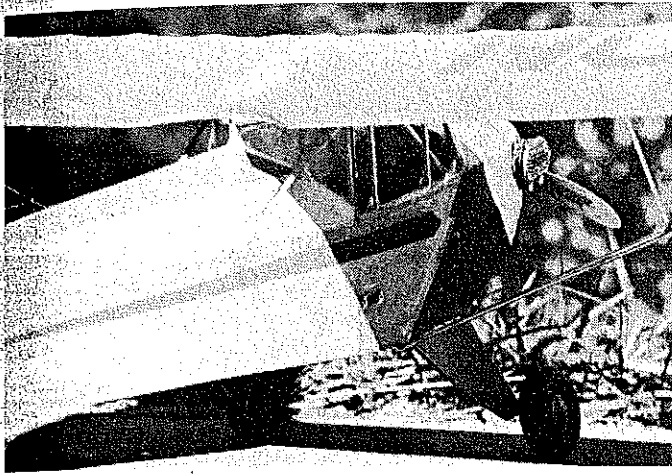
formance out of a two-place airplane on a 37-hp engine was no small trick. Very close attention was required to weight saving and clever use of conventional materials. The 35-ft. 3-in. span and 63-in. chord gave a decent aspect ratio of about seven. At 930 lbs. takeoff weight, the wing loading was a very low 5.1 lbs. per sq. ft. The power loading of 25 lbs. per hp resulted in a very modest climb, a top speed of 85 mph, and a cruising speed of about 60 to 70 mph. Stalls were soft and gentle, at about 38 mph.



An inverted Cox .049 on a Kraft nylon mount powers the E-2. A wood 7-3 prop is perfect match. The Q-Z muffer is highly recommended.



Any mini two-channel radio will do nicely. A small Cannon system with 225 mAh battery was used in the prototype. Photo shows relationships.



Unique cabin structure of the E-2 shows in these pictures. Optional side window panels were available to keep the cold wind out in the winter. In photo at right, note how plenty of cooling air and easy access to the engine are provided by the cut-out in the bottom of the cowling.

The Continental A-40 engine evolved with use in the Cub. The early A-40-1 and A-40-2 versions eventually gave way to the most common A-40-3 model, which sported a single-ignition Bendix magneto and developed 37 hp at 2,550 rpm.

Factory colors of the first Cubs were usually all-yellow, with black fuselage top and nose, and a black vertical tail. Another scheme had yellow wings and tail with a blue fuselage. By 1934, a lower cost standard color scheme was adopted: all-red fuselage and vertical tail with silver wings, horizontal tail and fuselage stripe. Costs were lowered further in 1935 by going to an all-silver finish, with the more expensive red dope limited to the nose, struts, landing gear, and wing numbers.

The model structure is very simple and quite scale. It is reminiscent of the old Megow large rubber model except that it uses many more ribs, plywood, and such. Whatever you do, please do not add weight by beefing up the model with



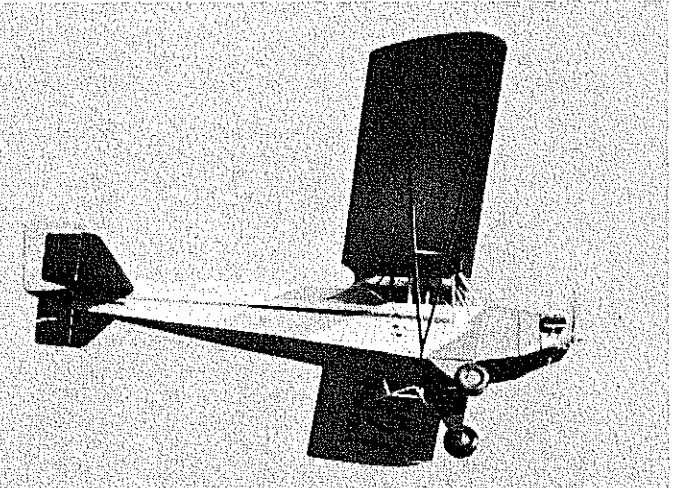
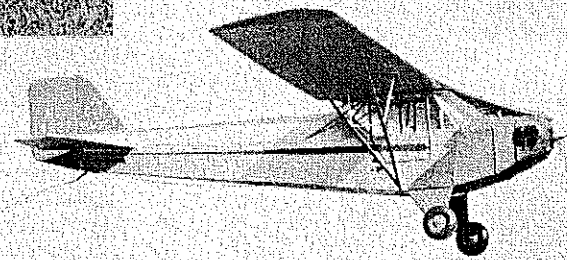
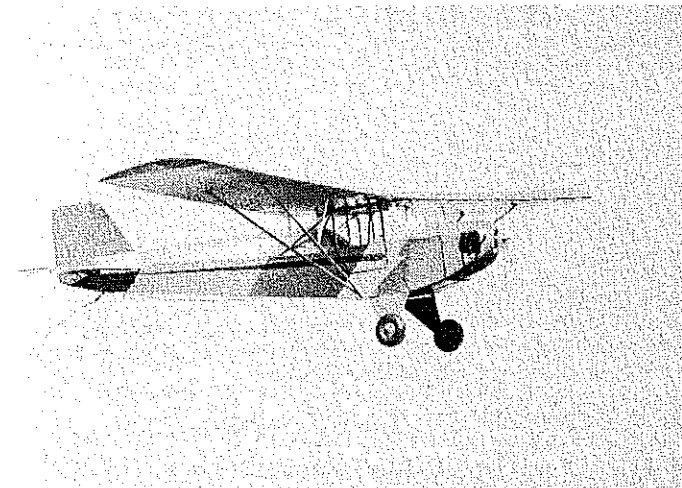
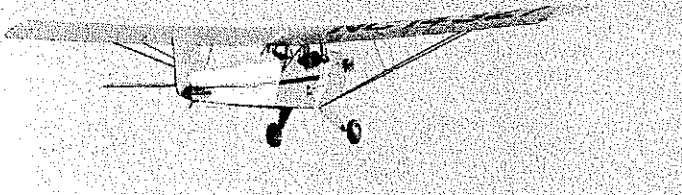
heavier wood sizes, more gussets, etc. Performance will suffer, and believe it or not, a heavier model is likely to be more susceptible to damage from those usual minor mishaps at the flying field.

The fuselage is built in the old two-identical-sides method. Make sure you use spruce for the $\frac{1}{8}$ sq. longerons, and add 1/64 ply gussets inside the cabin glue joints as shown. The cabin is greatly strengthened by the simple addition of these gussets. Carve the nose block from soft balsa, and hollow to suit the engine you have selected. The wire gear is made up of two 1/16-in. wire legs which are filled in with hard 1/16 balsa, then covered with silk.

The tail surfaces are ultra simple. Make them up from firm, straight $\frac{1}{8}$ sq. balsa and $\frac{1}{8}$ sheet gussets. There are no curved pieces or ribs to plot and cut out on these neat flippers.

After cutting out the wing ribs and tip pieces, assemble the wing using firm, straight balsa for

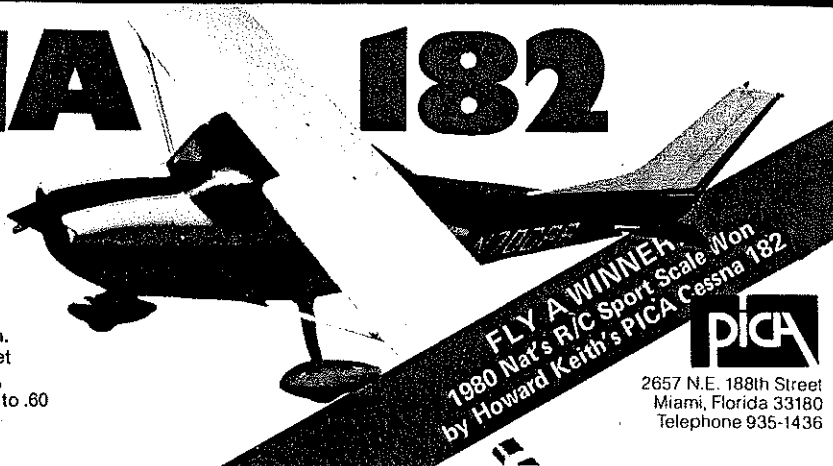
Continued on page 103



Author hand-launches the Cub, transmitter in free hand. Unassisted take-offs from a smooth surface are equally easy with the compact model. The low wing loading of only seven ounces per square foot makes it a good small-field model. By the way, the clip-on wing struts are not only to scale, but they are functional; don't leave them off the model! The quiet scale-like flight has to be seen to be fully appreciated.

CESSNA 182

Perhaps you need something a bit out-of-the ordinary for scale competition? Our Cessna 182 is a big, stable airplane; ideal as a scale trainer on only a .40 engine. Put a .60 under the cowl and fly circles around the competition. The semi-symmetrical airfoil makes the 182 groove, yet it's as docile as a kitten. For total scale realism, add the optional flaps. Tricycle gear for pleasant ground handling. The kit is all-balsa, with lots of hardware and molded parts for speedy construction. The clear plans and special illustrated construction booklet make it a kit that anyone can build. **Kit features:** Span: 72", Area: 702 Sq.", 5-7 lbs. flying weight, 4 channel, Power: .40 to .60



PICA
2657 N.E. 188th Street
Miami, Florida 33180
Telephone 935-1436



Jack Armstrong's American P-40 & Japanese Zero

Authentic Semi-Scale Reprints
On Quality Card Stock.

Remember How Well They Flew?

SEND \$5.00

SAF - FLITE MODELS • BOX 62 • ROSSVILLE, MICH. 48068

OS MAX .61 FSR w/muffler

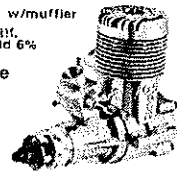
\$108⁰⁰ delivered Call. Add 6%

Rear Exhaust Same Price

Call 408-274-1915

RAC Products

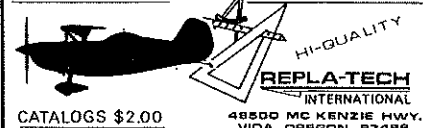
3200 Knightswood Way
San Jose, CA 95148



WE'VE EXPANDED!

SCALE DRAWINGS

PHOTOS - BOOKLETS



CATALOGS \$2.00

books and sundry articles. We aim to really retire in two years—or so—and build and fly all the time. The best laid plans of mice and men... P.S. Forgot the 10-ft. cardboard monster!

What's happened to you FF and CL guys? Have you given up? Next month, lots of great CL from George Aldrich.

Bill Winter, 4330 Alta Vista Dr., Fairfax, VA 22030.

Taylor Cub/Srull

Continued from page 19

the leading and trailing edges. The spars are 1/8 sq. spruce, and are webbed with 1/32 balsa sheet as far out as the strut attachment ribs. After adding the dihedral and the ply dihedral braces and gussets, form the 1/32-in. wire strut attachment clips, and epoxy to the appropriate ribs.

Fit the wing to the fuselage cabin top. When it is perfectly aligned, drill the bolt hold-down screw hole through the wing and cabin top plate; at this time, also epoxy the ply hold-down clip to the wing spar. While the wing is still in position on the fuselage, make up the two wing struts from 1/8 x 1/4 balsa. After trimming to fit well, spot-glue the aluminum tubing end pieces in place, and slide the brass strut-to-fuselage fitting into a slit in the "V" end of the strut. Don't glue it yet. Slip the struts in place, and screw the brass fittings to the fuselage attachment points. After making sure that the wing is all lined up properly, Hot Stuff the brass clips in place. Remove the struts, and reinforce all fittings with silk and glue.

Covering and finishing. I covered my Cub with medium-weight silkspan. Light-weight silk would work well, but use low-shrink dope for finishing to keep warping to a minimum. Plastic film covering could also be used, and would probably provide the lightest and simplest covering and finish possible. It would not look as scale-like on this model as a painted finish, however. In any case, try to keep the weight down as much as possible; those pigmented dopes can build up weight very fast if you aren't careful. After covering with silkspan, I water-shrunk the covering, and then brushed on three thin coats of thinned-down aluminum dope—to which had

been added a small amount of talcum powder for filling.

When dry, all areas were carefully sanded with 600 paper until a smooth surface, ready for color, was obtained. Finally, a wet coat of aluminum dope was sprayed on. The trim areas were masked off, and sprayed with Sig Tennessee Red dope. Two-inch diameter Banner wheels look about right, and I think they are a little more durable than Trexlers. Make the dummy cylinders from scraps of balsa, paper, tubing, and wire; paint them with a mixture of black and silver dope, and attach them to the removable nose block. Install your favorite mini, light-weight radio, and let's go fly.

Flying. Make sure the model balances a little forward of the spars. Check for any warps or misalignments, and remove any that are visible. Our model weighed 18 ounces ready-to-fly, and

performed best when the Cox Medalion engine was overloaded with a 7-3 or 7-4 prop. When peaked out on a 6-3 or 6-4 prop, the model's speed and rate of climb were much too fast to be scale-like—and not to my personal liking for a model of this type. On the larger props and with a muffler, speed and climb are much more scale-like and graceful. Even with the power reduced in this way, however, the Cub's performance is more than adequate to fly in almost any restricted area. Baseball fields, the corner schoolyard, and empty parking lots are ready airports for the Cub. Take my word for it—the Taylor E-2 Cub, a little can of fuel, and a starting battery can give you as much flying fun as any RC model you ever have flown. Enjoy!

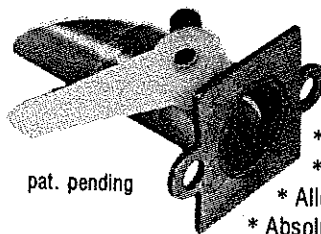
When writing advertisers, mention that you read about them in MA.

ATTENTION QUADRA OWNERS!!!

Is your Quadra hard to start because there is no really effective way to choke it? Would you like to add a solid 100-200 RPM to the top speed of your engine?

THEN CHECK THIS OUT

Combination choke
and ram induction



pat. pending

- * Guarantees quick starting by hand
- * Eliminates throttle spit
- * Allows use of partial choke for warm-up
- * Absolute must for Lectra-Starter
- * Install in minutes to extra servo or pushrod to cockpit
- * Eliminates using your finger which usually causes flooding
- * Doubles as kill
- * Uses prop blast for extra RPM's

Send \$14.95 check or money order to:
Gardner-Burrell, 6005 Cliff Drive, Fort Smith, Ark. 72903