

CUB AIRPLANES are well on the way to being to the airplane industry what the Model T Ford was to the automobile industry. Selling a third of all commercial airplanes purchased today, the Piper Aircraft Corporation offers airplanes on the installment plan, and a free course of flying instruction with each ship. And the success they have gained is in spite of the fact that Cubs could carry only a negligible bomb load, would be outclassed as fighters even if armed, and have limited reconnaissance value. Great credit is due a firm whose success has come from airplanes which free the average man from the earth rather than bury him under it.

Newest of the Cubs is the Cub Coupé. Offering side-by-side seating for those prospective purchasers who were not quite won over by the tandem arrangement of

1939 CUB COUPE

by **HERBERT K. WEISS**

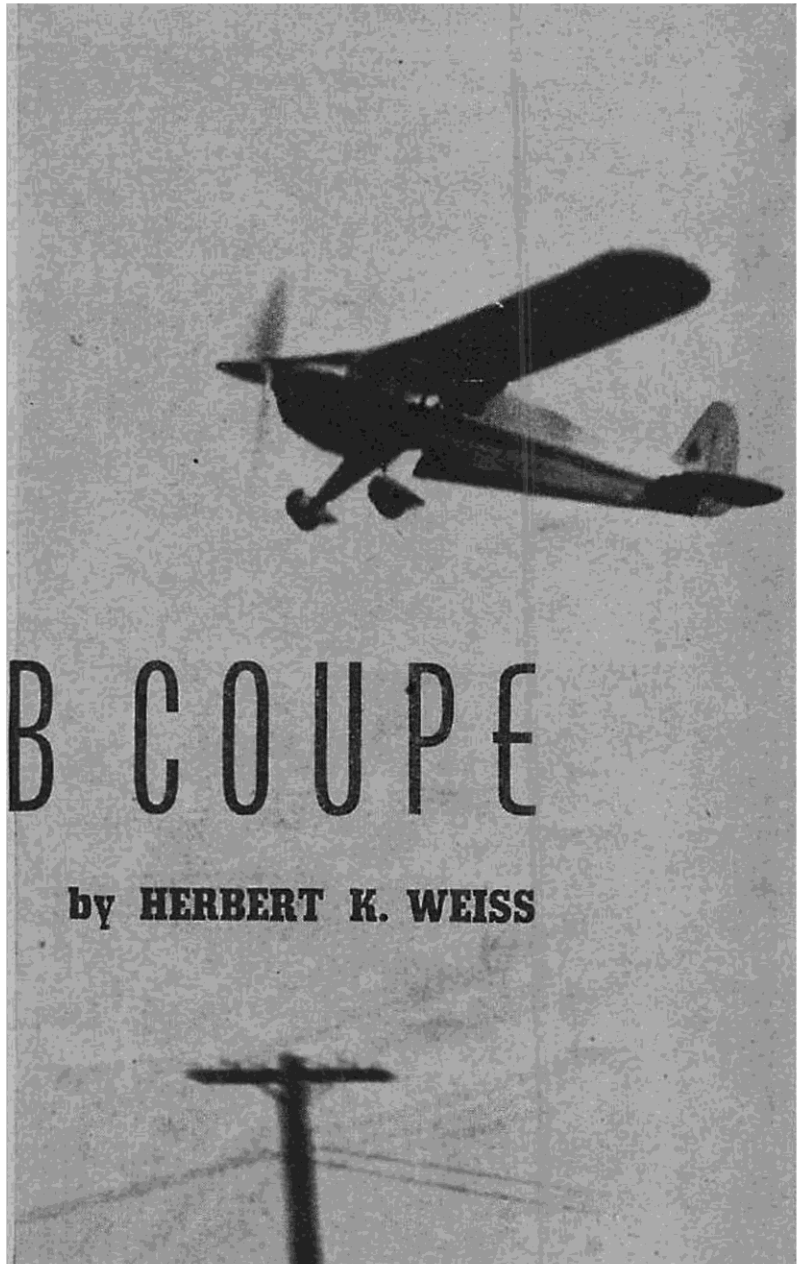
earlier Cubs, the Coupé has been designed for the new 50-horsepower engines, and with the Continental A-40 cruises 340 miles at 83 m.p.h., has a top speed of 93 m.p.h., and carries a useful load of 490 pounds. The Coupé lands in 200 feet, takes off in 300 feet, and climbs at 500 feet per minute. Additional luxury touches are the fully upholstered cabin with two entrance doors, and the pants supplied as standard equipment.

The model plans have been carefully prepared to the three-quarter scale so that they will serve as the basis for either a flying model or a scale model. In construction care should be taken to cement all joints securely, and to keep the structure true at all times.

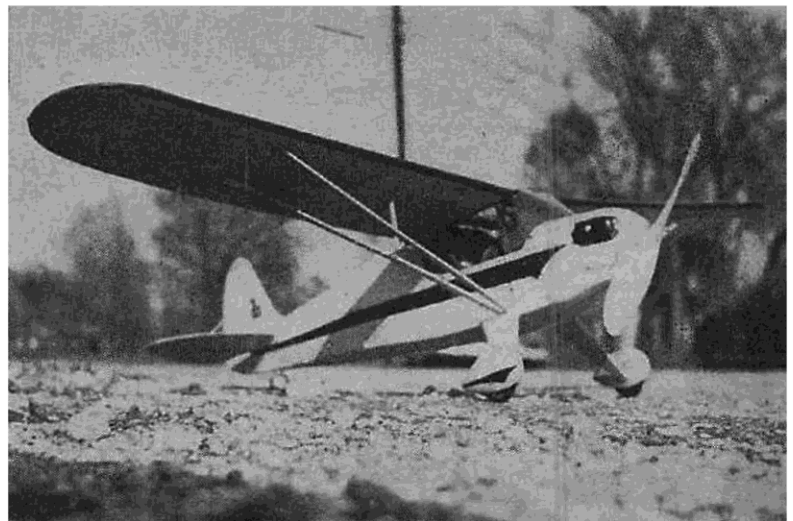
WING

Begin construction with the wing. This is made in one piece. As it is untapered, no difficulty should be encountered in laying it out on your work bench by simply carrying over dimensions from the plans with a ruler. If desired, a full-size layout can very quickly be traced. Movable controls are optional, and a flying model will usually perform better without them. If controls are made movable, use soft iron wire as hinges.

Sand the wing frame after its assembly to prepare for a smooth covering job. Crack the spars to give dihedral, and re-cement.



No, you're wrong. It's not the real ship coming in over the wires at the local airport, but the model. Good flying characteristics are insured in a Cub.



There is something about the new Cub that gets you. It really is a very big-looking little ship. Build and fly the model and you will be well repaid.

CUB COUPE

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FUSELAGE

Cut out two halves of each bulkhead. Bulkheads one to five are $\frac{1}{8}$ " sheet balsa, and six to twelve are $\frac{1}{10}$ " sheet balsa. Cement corresponding halves together. Then cement bulkheads eight, nine and ten to the wing center section in the positions shown on the plan. Add the four $\frac{1}{10} \times \frac{1}{8}$ " side and top stringers, the remaining bulkheads, the tail post, which is $\frac{1}{10} \times \frac{1}{8}$ " balsa, and finally the remaining stringers.

The nose back to the windshield is either covered with sheet balsa or filled in with scrap balsa. Sand this smooth after the cement has dried. Add the window frame and outline. Note how the wing center section's leading edge is cut back at the windshield.

LANDING GEAR

The landing-gear skeleton consists of two pieces of wire, continuous through the fuselage as shown in the landing-gear detail. These should be cemented in place before the fuselage is covered, and the braces installed to hold the wire tightly against the bulkheads. After the model is covered, the $\frac{1}{8}$ " sheet-balsa fairings may be cut and sanded to fit and then cemented in place. Pants are made in the customary way, by cutting four pieces of $\frac{1}{8}$ " sheet balsa to the side outline of each pants, cutting two of these to the dotted lines to admit the wheel and cementing the pieces together with the cut-out parts inside, and finally carving and sanding the whole assembly to streamline shape. The pants are then cemented to the landing-gear struts.

TAIL SURFACES

If the model is carefully constructed, care being taken to keep the tail light, it will fly satisfactorily with scale-size surfaces. Two types of construction are shown on the plan. The heavy black lines show a light frame, with $\frac{1}{10}$ " square bamboo outline and single $\frac{1}{8} \times \frac{1}{10}$ " balsa spars for flying, while the light drawing shows the detail for a scale model with movable surfaces. The success of scale-size surfaces depends entirely on keeping the tail of the model light and the surfaces free from warping, so it will pay to take exceptional care with this part of the model.

The stabilizer is built in one piece with a continuous spar and is attached to the fuselage after assembly by slitting the tail post with a razor to admit the stabilizer.

COVERING

Because of the large flat surfaces of the model, a little care will provide a smooth covering job. Where the curves

make covering a little difficult, use several small pieces of tissue. As the Coupé is a private plane, the color scheme is entirely optional with the builder. Our test model was cream with red trim.

Cover with tissue of the desired color, then spray the model lightly with water and allow to dry. Then give two light coats of colored dope of the same color as the tissue. Use dope thinned half and half with thinner for lightness and to prevent warping. *Do not dope the tail surfaces.*

Sand the model lightly between coats of dope to remove fuzz and stray ends of tissue. Dope the nose until the model balances slightly ahead of the wing's mid chord. Add insignia, striping, and details. Struts are sanded from $\frac{1}{10} \times \frac{3}{16}$ " sheet balsa.

PROPELLER

Drawings are given for both the flying and scale propeller. Use hard balsa for the flying prop to bring the C. G. forward and to minimize the danger of breakage.

FLYING

Glide the model and add weight to the nose if it stalls, bending the trailing edge of the stabilizer up if it dives sharply. Then try short flights under power, aiding the model to turn in whichever direction it tends by warping the rudder slightly. If the model stalls under power, give it slightly more rudder so that it climbs in a tight spiral, or use downthrust.

The test model flew smoothly on six strands of $\frac{1}{8}$ " rubber and was flown as an exhibition model at the Peninsular Fair at Langley Field in December.

BILL OF MATERIALS

Sheet

- 2 $\frac{1}{32} \times 2 \times 18$ "
- 2 $\frac{1}{16} \times 2 \times 18$ "
- 1 $\frac{1}{8} \times 2 \times 18$ "

Strips

- 12 $\frac{1}{10} \times \frac{1}{16} \times 18$ "
- 6 $\frac{1}{16} \times \frac{1}{8} \times 18$ "
- 1 $\frac{1}{8} \times \frac{1}{4} \times 36$ "
- 3 $\frac{1}{10} \times \frac{3}{16} \times 36$ "
- 1 $\frac{1}{16} \times \frac{1}{4} \times 36$ "
- 1 $\frac{1}{2} \times \frac{1}{2} \times 6$ "

Block

- 1 $6\frac{1}{2} \times 1\frac{1}{8} \times \frac{1}{2}$ "

Miscellaneous

- 2 oz. cement
- 1 oz. clear dope
- 1 oz. colored dope
- 1 oz. thinner
- 2 1" hardwood wheels
- 2 sheets tissue
- 1 $\frac{1}{2}$ " balsa wheel
- 18" #12 music wire
- bamboo, rubber, washers, celluloid