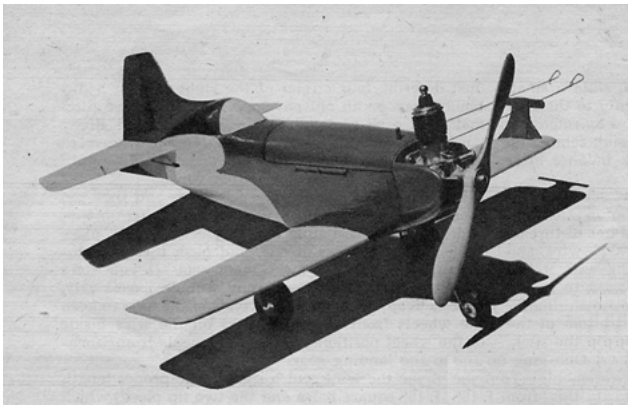
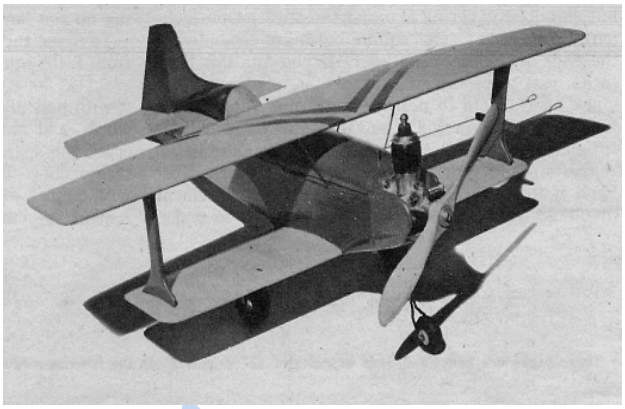
Cub Sportster





Take your choice of a speedy low wing monoplane or a stunt bipe change from one to the other within a few seconds by Aubrey Kochman.

Here is a versatile little ship that can be flown as a low-wing speed job or changed to a stunt biplane in less than a minute. Powered by the Herkimer OK Cub and flying on about 15 feet of line, there's no end to the fun you can have right in your own backyard.

Designed as a simple, rugged model, it can take quite a beating before going the way of all models subjected to the rigors and mishaps of control line flying.

Before starting construction, study the plans carefully. Make certain that you understand the way in which the fuselage is built. Actually it is built up on a keel, insuring perfect alignment and a positive reference line for checking zero incidences on all surfaces, so important to the performance of a good stunt model.

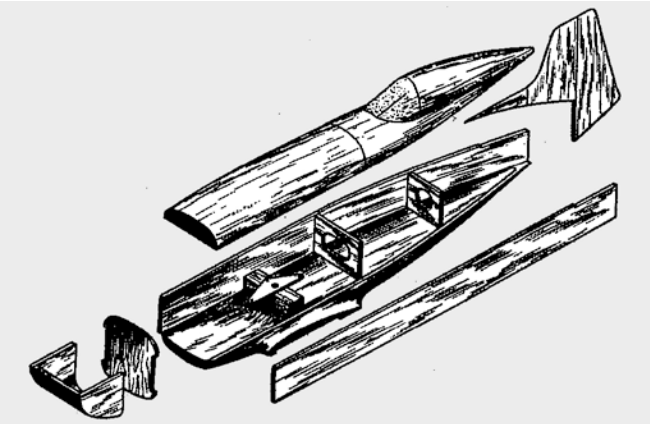
To begin construction, select a piece of very light, straight grained balsa 3/4" x 1 3/4" x 36". This piece will take care of all the block parts needed. Trace the top view on this and carefully cut to shape. This block is the bottom of the fuselage and acts as the keel, so the next step is to carve it to its proper side view. Make certain that you do not do any carving between sections B and C as you may spoil the zero incidence setting of the lower wing. Hollow out as shown by dotted line on the plan. Formers #1 and #2 are now added to this keel. When these are firmly cemented in position add the sides. By slightly dampening these side pieces and using plenty of pins, no trouble should be encountered, as the curve employed is not great. Allow these side pieces to extend beyond the front of the block about 1/8" so the plywood firewall will fit between them.

Before adding the top sections, install the bell crank, the firewall (with the nose gear bound and cemented in place), and the completed stabilizer. It will be wise to install the push rod, too, as the slight amount of bending necessary is much easier accomplished without any interference from the top sections. Do not be satisfied with the installation and operation of the bell crank and elevators until you have smooth movement. This ease of operation is absolutely necessary since any model powered by these very small engines, weighing in at around four ounces and flying at comparatively lower speeds, will exert only a very slight amount of pull on the lines. A combination of very little pull and sticky controls will result in an uncontrollable model in. the event of sudden gusts or engine failure.

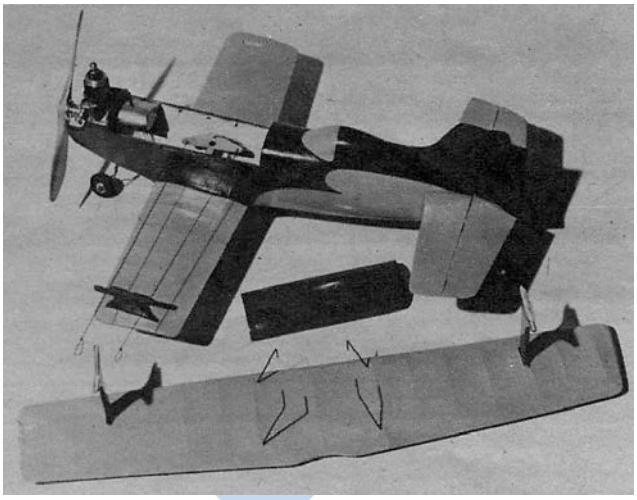
The top of the fuselage is carved and hollowed in the same manner as was the bottom. On the original, the section between the firewall and former #1 was left as a removable hatch. By making this piece removable you will be able to check the bell crank and tighten the engine mounting nuts and bolts if necessary. If this hatch is really snug fitting, it will not be necessary to use dress snaps to hold it in place.

Now sand the entire fuselage until it appears as though it was carved from a single block while working the sides down to about 1/16" in thickness. Add the rudder, giving it about 1/4" offset ,to the outside of the circle.

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● Exploded view of the fuselage for Red Kochman's Cub Sportster. Regular full-size drawings are a part of Air Trails Plan # 1149.



The wings are of the simplest type and need no explanation, except perhaps their method of attachment to the fuselage. The lower wing is built in two halves and joined by a sheet of 3/32" medium hard balsa. To assemble the lower wing to the fuselage, simply cut a slot across the bottom of the fuselage 3/32” deep and the width of the center section joining sheet of the wing. Cement the wing in place with the two center ribs flat against the fuselage sides.

Form the main landing gear of 1/16" music wire, and after forming, trace the outline onto the fuselage and trailing edge as shown on the plan. Cut a groove just deep enough to allow the wire to fit flush with the surface of the trailing edge. Use plenty of cement at least two, coats. Incidentally, the ribs on both wings were sanded to shape after assembly rather than being cut to shape beforehand.

The top wing is built in one piece leave out the center rib. Cut a sheet of 3/32" balsa to fit snugly between the two center section ribs but do not cement it in place yet. Form the wire wing mounts making certain that the lengths are identical. Cement and sew them to the sheet as shown. Now cement this unit between the two center ribs and check, on a flat surface, to see that the wing is level and at zero incidence. Add the false center rib top and bottom and then the corner gussets. Cement and bind a piece of 1/16" aluminum tubing to each side of the fuselage just below the hatch line as shown, parallel to it and to each other. Bend these mounting wires so they are always under tension in the tubing and do not have any tendency to slide out by themselves.

With both wings in place, cut out and fit the struts. These are cemented firmly to the top wing, sandwiched between the double ribs as shown and fit very snugly into the slots provided in the lower wing, but not too tightly, for don’t forget that the top wing is removable.

Go over each wing and sand out any imperfections that would spoil the covering job. Cover both wings with light weight Silkspan. Then shrink with water and apply at least two coats of clear dope. With the hatch removed it· is a simple matter to install the engine but you will find it necessary to cut the bolts fairly short in order to get them through the Cub’s radial mount. Three 2-56 nuts and bolts provide the answer, with the nuts going on behind the firewall.

With the engine now in place, install the stunt tank by cementing it to a piece of balsa that has been cemented to the rear of the firewall between the mounting nuts. Add to the filler and overflow tubes so that they extend outside the model. This will keep the inside of the ship free from fuel and make for easy refueling. Add the engine cowl pieces and sand smooth, being careful to keep the balsa dust out of the engine.

You are now ready to decorate. It might be wise to weigh the completed model before applying colored dope so that you will know just how much weight you can or cannot afford to add. The ideal finished weight, including paint and hot fuel proofer, is about four ounces. If you still haven’t found a wood filler to your liking, try something that I hit upon purely by

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accident. Simply add enough “Cerfex” spachtling compound to some clear dope until it assumes the consistency of heavy cream. Brush on a coat and allow it to dry about twenty minutes, sand it smooth with very fine sandpaper. This one coat should give you a workable surface for painting. For a super finish, use two to three coats sanding in between. “Cerfex” is inexpensive and can be purchased in any paint or hardware store. If you have been using dope and talcum powder and probably catching the dickens from your mother or wife for using her finest bath powder, “Cerfex” is the answer.

Before attempting any flights, check the .point of balance as shown, making any necessary corrections by adding weight. On no account should any flight be made if the engine is not revving fully.

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