



# CONSTRUCTION

By Clark Salisbury

## The Sky Skooter

A “what-if” scale high-performance sport aircraft



**Before we begin,** I need to explain why I designed the Sky Skooter. I have always been intrigued by the idea of taking my wife and kids or some friends to a distant place, 500 or 600 miles away, faster than I could in a car. The Cirrus, the Lancair, and a few other 200-plus horsepower airplanes really intrigued me. With this in mind, I used homebuilt designs on the market for inspiration and came up with the Sky Skooter — a 1/9-scale version of what I think would be a great full-size plane.

### CUTTING PARTS

First, you want to cut out all of the parts using the plans as a guide. I use a glue stick to attach the paper templates to the wood. In some cases, such as the fuselage formers, cut the pieces out after you have laminated two layers of wood together to form balsa plywood. For the wing ribs, be sure to stack two sheets and make two of each rib for the left and right wing panels. The rudder and elevator halves are made from solid balsa sheeting. For this article, I'm only showing the very basic details of the construction, as there is not enough space

in the magazine for complete step-by-step instruction. For those who wish to build the Sky Skooter, you can see my complete text and all my construction photos online at [ModelAirplaneNews.com/skyskooter](http://ModelAirplaneNews.com/skyskooter).

The trickiest piece that you will be cutting is the one made from 2-inch wood dowel, which will become the top part of the engine cover. Draw a 5-inch line exactly along the center of the dowel after you cut it to a 5-inch length. Next, glue the template exactly to the top of the dowel, along the centerline you have drawn. Now, rotate the dowel 90 degrees and glue on a couple of scrap pieces to the bottom of it so the dowel can be held in that position as you put it through your scroll saw to cut out the part.

### TAIL FEATHERS AND PILOT SEATS

The horizontal and vertical stabilizers are built over the plans, with the parts pinned and glued in place. After you have glued these assemblies together, take some time and sand the seats to shape. Then glue the seat supports to the seat backs and to the seat bases. After the tail feathers have dried,

### SPECIFICATIONS

**Wingspan:** 52 in.  
**Length:** 39 in.  
**Weight:** 3 lb., 13 oz.  
**Wing area:** 441.26 sq. in.  
**Wing loading:** 19.91 oz./sq. ft.  
**Radio req'd:** 4-channel (rudder, throttle, aileron, elevator) with five servos  
**Power req'd:** Power 25 brushless

### GEAR USED

**Radio:** Spektrum micro servos ([horizonhobby.com](http://horizonhobby.com)), Hitec micro servo HS-55 ([hitecrd.com](http://hitecrd.com))  
**Motor:** E-flite 25BL, 40-amp brushless outrunner ESC ([e-flite.com](http://e-flite.com))  
**Battery:** E-flite 2100mAh LiPo  
**Propeller:** APC-E 10x6  
**Covering:** Hangar 9 UltraCote ([horizonhobby.com](http://horizonhobby.com))

sand the edges to a nice radius. Also, you need to sand down the joiner dowel to the elevator thickness. This is a good time to cut the hinge slots into the rudder, elevator, and stabilizers. Test-fit the hinges but don't glue them in yet.

### WING

Start the wing structure by cutting the ailerons from the trailing edge. Now, slot the ailerons and the trailing edge (for the nylon



hinges). Sand the edges of the ailerons so they can move up and down and test-fit the hinges. Leave them in place, but don't glue them yet. Pin the trailing edge over the plans, glue in the balsa sheeting for the bottom rear section of the wing, and then glue in the plywood landing gear mounts.

Pin the bottom spar to the building board and glue the front bottom wing sheeting to the spar. Then glue in all of the ribs (ribs 1, 2, and 3 should only be glued to the sheeting where the ribs are flat on the bottom). When the ribs are in place, glue the upper spar down. The shear web pieces (W1 through W10) should be glued in to connect the upper and lower spars. Then, glue the leading edge dowels to the front of all the ribs and push the aileron servos through the aileron servo mounts. However, don't attach them yet and don't glue the mounts in place yet — just leave them loose between ribs R3 and R4. Push the aileron wires through the holes in ribs R1, R2, and R3. Then, glue a small piece of scrap balsa to the hole at R1 to make it smaller so the aileron wires can't accidentally be pulled through. Now, glue the upper

sheeting to the rear section of the wings.

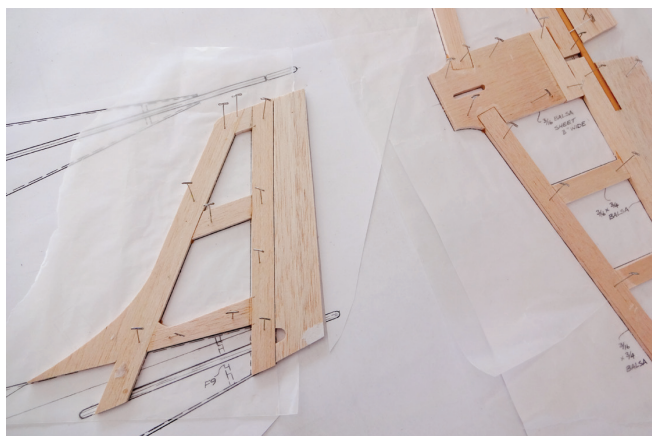
When the wings are joined together, add the dihedral joiner and sheet the bottom of the wing behind the dihedral joiner. Glue the front wing mount in place and then glue the 1/4-inch dowels in place. The dowel spacing should be held exactly correct by using the F4 doubler as shown — just make sure not to glue the dowels to the doubler. Add the rest of the wing sheeting,

then notch out for the wing mounts and add a notch at the front that's the same width as the battery and 1-inch deep. At the rear top of the wing, add a 1-inch-wide piece of 1/16 balsa as shown.

When all the sheeting has dried, sand the wingtips to match up with R11 rib and sand the leading edge of the wing. Also, sand off any rough corners, etc. The aileron servo mounts can now be glued to R4 and



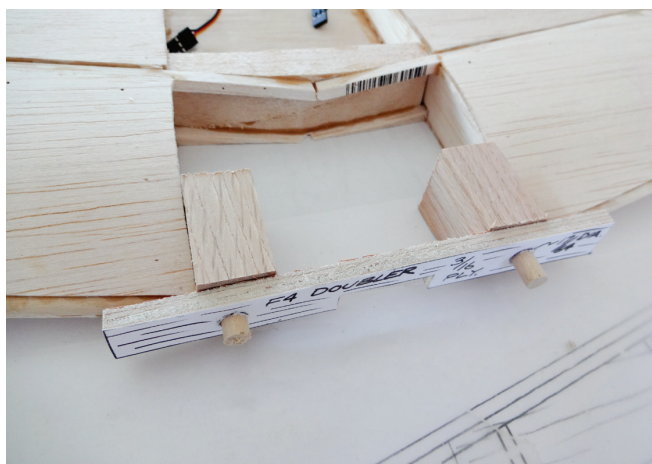
The trickiest piece to make is cut from a 2-inch wood dowel, which will become the top part of the engine cover.



The horizontal and vertical stabilizers are built over the plans.

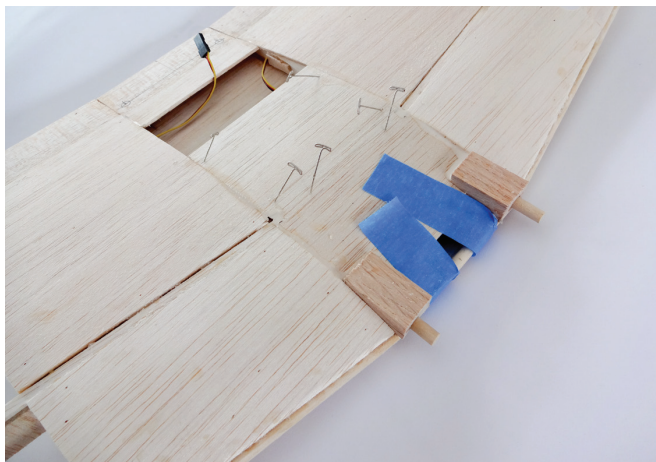


Details for the cockpit include the pilot and passenger seats.

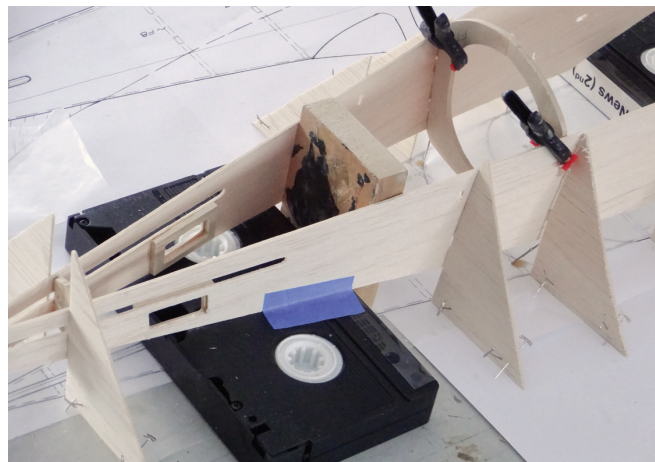


The wing alignment dowel spacing should be held exactly correct by using the F4 doubler as shown here.





Here the wing structure is coming together and all the sheeting is in place ready for some sanding to smooth things out.



To keep the fuselage straight, scrap balsa triangles are used as alignment jigs along the top view of the plans.

the front of the trailing edge. They should mount flush with the bottom of the wing.

## FUSELAGE

Notice that there are differences between the left and right fuselage sides. Glue on the elevator and rudder servo mounts to the inside of the sides. Also, you will want to turn your building board into a fuselage alignment jig as shown. Just glue in scrap balsa triangles (3x4 inches) along the top view of the fuselage on the plans. Glue in a triangle wherever there is a former. This jig

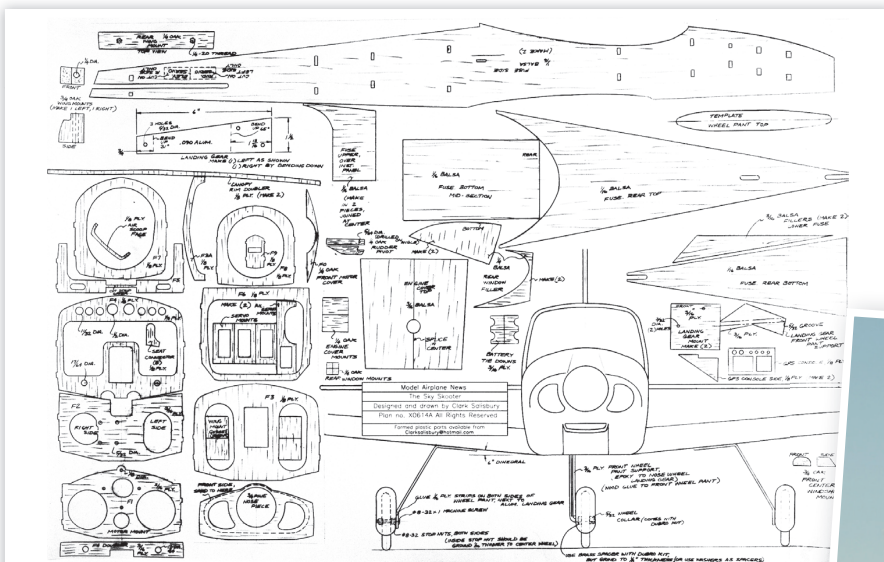
will be used to keep the fuselage straight. Now, mount the plate to former F1, then install the blind nuts and the steerable landing gear to former F2. It will be very difficult to do later.

While adding formers F9 and F7, I found that clamping them at the top and then using small balsa wedges at the bottom will hold them nicely in place against the jig as the glue dries. This is also done when formers F8, F6, and F5 are glued in place. Install the instrument panel (F4) and the floorboards. Lastly, glue in the canopy rim

stiffeners.

Before you glue in the nose piece, mount the motor so that the nose piece can be centered properly. I glued each of these in one at a time and let the glue dry before adding the next piece. I also covered the motor with tape to keep it clean during the build. Now, glue in the pieces over the instrument panel, connecting to F3 and the rear upper fuselage covering pieces. Both of these parts must be bent, so to make it easier, wet both sides of the balsa first. Painter's tape works well to hold them in place. The F0 and F3A formers will hold the balsa to shape. Now glue in the Oak pieces between F1 and F2 in the fuselage. These pieces need to be drilled and tapped for a 6-32 thread, so that the nylon screws can be used to retain the motor cover. Later, when you are sanding the engine cover to shape, install the screws to hold it in place.

With the fuselage turned upside down, use the same building jig setup to hold



## Sky Skooter | X0614A

Designed by Clark Sailbury, the Sky Skooter is a "what-if scale" model of a high-performance civilian, family mover, sport aircraft. It uses traditional wood construction and vacuum-formed cabin window parts are available from the author.

Wingspan: 52 in.; Length: 39 in.; Power: 25 brushless motor; LD: 2; 1 sheet; \$19.95



To order the full-size plan, visit [AirAgeStore.com](http://AirAgeStore.com)

