

Albatros CIII 38"

R/C Scale Model Instructions



CONTACT INFORMATION

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Albatros CIII

Thank you for purchasing the Albatros CIII model for electric flight.

THE MODEL

A semi scale adaptation of the Albatros CIII, this model is designed to be easy to build and exciting to fly.



POWER SET UP

The model can be set up to be powered by the 6V S400 motor and the MP Jet 3.4:1 Gearbox and a 10x4.7 APC prop. Battery power pack can be 8 600mAh Nicads or an equivalent weight Nimh

R/C GEAR

A four function mini receiver and four micro servos are all that are required. Hitec HS-50 sub micro servos are required for the aileron servos.

Model Specifications

More than 250 laser cut parts

| | |
|---------------|---|
| Scale: | 1/12 |
| Channels: | R/E/A/T |
| Wingspan: | 38" |
| Wing Area: | 394 sq in. |
| Weight: | 25 Oz. ready to fly |
| Power system: | Designed for 6V S400 with MP Jet 3.4:1 gearbox. 4 micro servos Ailerons (HS-50's) Balsa and Litespan or Polyspan covering 9x6 |
| Prop: | |
| Wheels: | Balsa, plywood, Neoprene foam cord tires, Brass tube hub Paper card wheel cones |
| Airfoil Type: | Flat Bottomed |
| Cowl: | N/A |
| Spinner: | N/A |
| Decals: | Available on website |

BUILDING THE MODEL

BEFORE STARTING

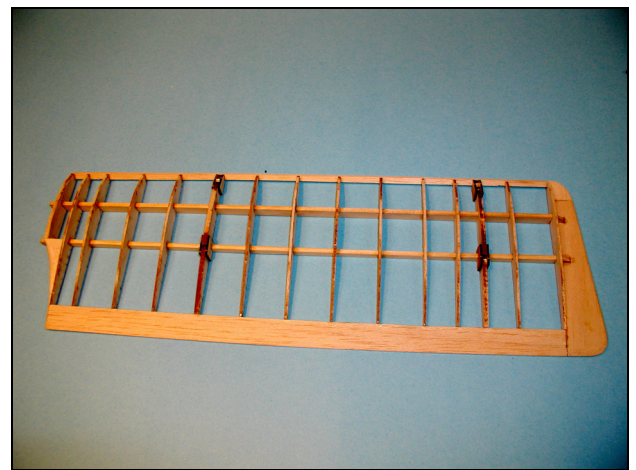
A note about the photos: The photos were taken of a prototype and the parts supplied may look slightly different from them. However, the concepts illustrated are the same.

Robert Stinson built the Albatros CIII prototype.

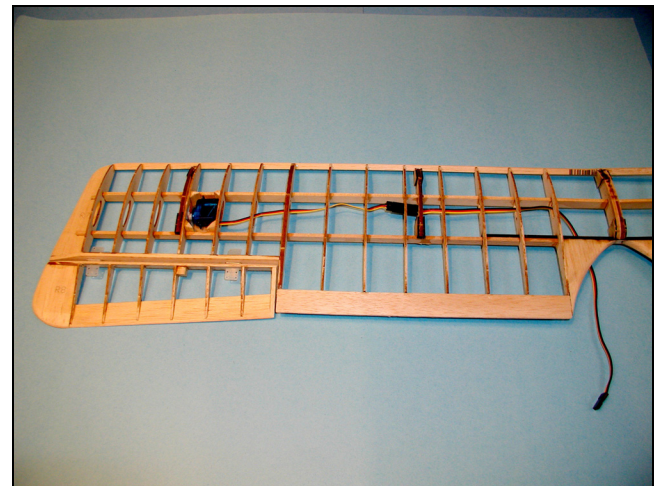
WINGS

Wing Construction

Pin down, over the plan, the t/e, spars and wing tip, gluing as required. Add the leading edge stock after the basic frame is done as the stock is inserted in a rotated fashion. Add the wing tips and align the front tip along the center of the leading edge. Sand the leading edge stock to be rounded and meet the ribs.



Lower wing



The leading edge of the aileron is rounded over with sandpaper to make the aileron movable with a minimum gap. The trailing edge of the wing in that section is left flat.

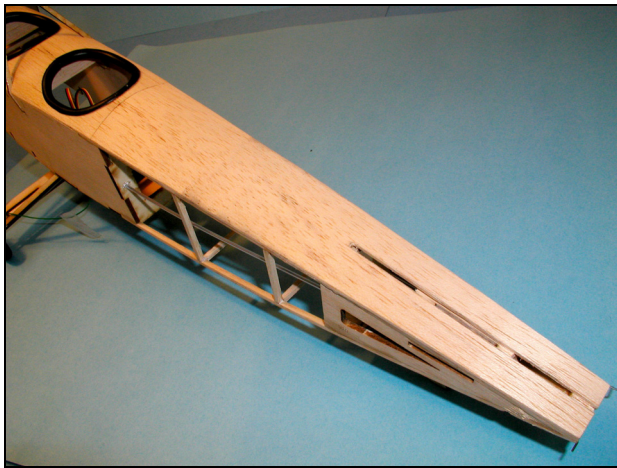
FUSELAGE CONSTRUCTION

The fuselage is built as two side structures, which are then joined over the plan. This system not only keeps each stage simple, but it also helps to ensure a straight fuselage.

Building of the Right Side of the Fuselage

Begin by building two fuselage side frames over the plan and allow to dry.

Join the two frames over the plan with cross braces and the tail skid mount F12 and Vertical stabilizer mount F11. Check, check and check again that this and ALL other structures remain perfectly aligned. Former F1 is also angled a bit for down thrust. Place F11 and F12 carefully. They serve to position the vertical stabilizer and tail skid. Use a length of 1/8"x1/4" balsa stock at the end of the fuselage.



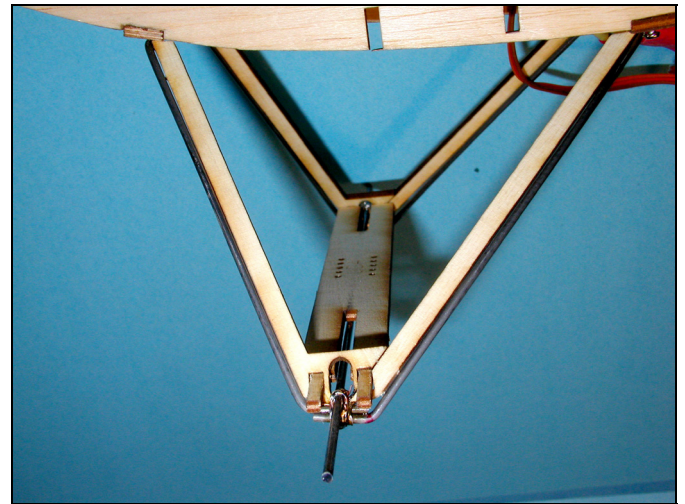
Adding the Decking

Add all the stringers and formers, and carefully trim to size and fit 1/16" sheeting. Some have also sheeted the fuselage sides with 1/32" balsa as well. Keep in mind that excess weight in the tail is to be avoided, so use these sheeting options with the lightest balsa available.



Soak the nose of the fuselage sides in hot water for 10 minutes to soften the wood. This process allows the sides to bend to conform to the motor mount and make the required taper.

Adding The Undercarriage Plates



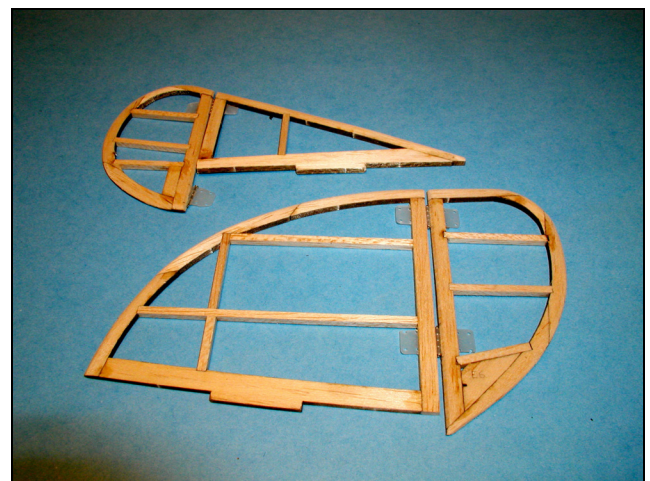
LANDING GEAR

Assemble ply landing gear parts and use them as templates for bending music wire reinforcements. Soak the ply portions with thin CA for strength. Secure the structure with Kevlar thread. Attach landing gear to fuselage with Kevlar thread.

TAIL SURFACES

Lay out and glue parts of the tail surfaces on the plans.

Sand the tail parts, rounding off all edges. Don't add the horns or hinge the surfaces until after covering is complete.



DUMMY MOTOR

Assemble the dummy motor from the balsa parts supplied and sand to shape. Not all the parts of the engine are supplied as some are best fabricated from other materials. Solid 16 gauge copper electrical wire (black insulated) makes an excellent "radiator hose".



COVERING

Any lightweight covering material can be used. Polyspan makes a good choice, Litespan is also popular. Robert Stinson used Solartex.

Downloadable decal outlines are being developed. Check on-line at <http://www.aerodromerc.com/decals.htm> to see if one is available for this model.

WHEELS

Gluing the ply sides on the $\frac{1}{4}$ " balsa core makes the basis for the wheels. Use the brass hub for alignment. Epoxy the hubs in place and add a sufficient amount of epoxy around the base of the hub to reinforce the connection of the hub to the ply. Plywood reinforcing hubs are provided that are to slip over the brass tubing as shown. Alternatively, gluing an additional $\frac{1}{2}$ " square piece of scrap $\frac{1}{8}$ " balsa with a hole drilled in the center can be substituted. Next, CA glue the neoprene cording together to form a "tire". Use thin CA sparingly as the CA bonds very aggressively to the rubber. Press the CA wetted ends together for an instant bond. The best way to align the ends is to glue them while they are in place on the wheel. Then attach the tires to the wheels and CA in place. A thin bead of CA around the rim makes for a secure tire.

Paper cones are cut out. Use a ball point pen to score each line on the back to make an impression of "spokes". It is helpful to do this operation on a paper tablet so that the pen makes a good crease. Fold the paper along the crease lines to exaggerate the raised lines. One of the sections forming a wedge is cut out. Make cuts to the center of the circle along a pair of the spokes. Close the paper cut-out to form a cone and tape the joint inside the cone.

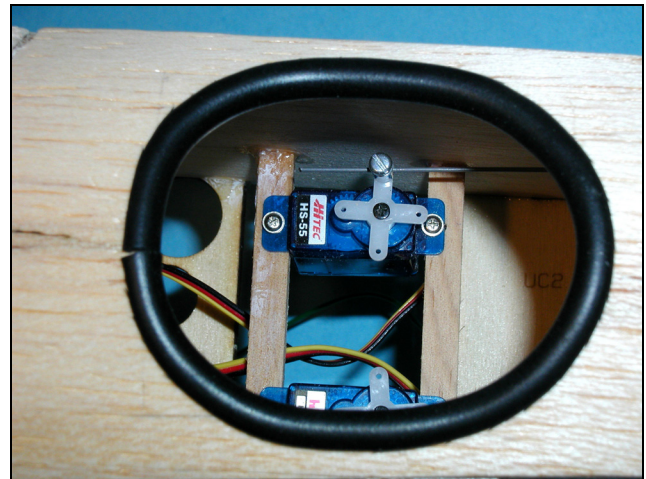
The inside cones may now be attached to the wheels. The outside cones may be attached at this point if wheel collars are to be used. Alternatively, after installing the wheels on the landing gear, a washer may be soldered to hold the wheel in place and then the cone is attached. This method makes a very nice scale appearance.



INSTALLING THE RADIO CONTROL GEAR

Servo Bay

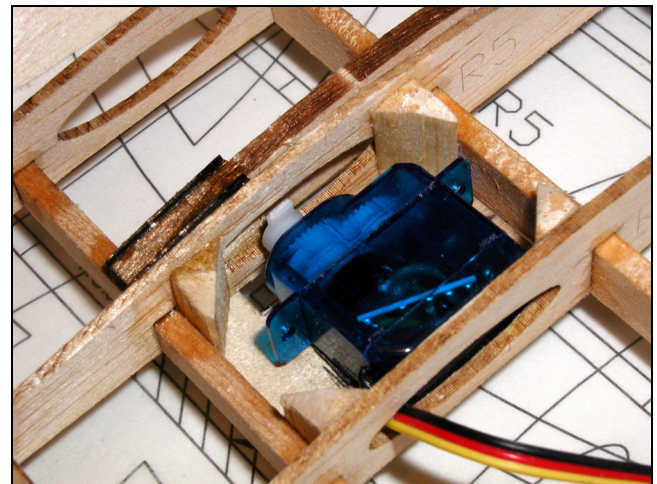
It is as well to get the bulk of your R/C gear fitted at this stage, and also the motor.



The cockpit combing is rubber fuel tubing, split and held in place by friction.

Aileron Servos

Aileron servos are mounted in wing and attached with short threaded rods to the ailerons. Use a "Y" wiring harness connector to wire the servos to a single radio connection. If differential aileron throws are desired, rotate each servo horn aft about 20 degrees, while maintaining the neutral position of the aileron. This should counter any adverse aileron yaw.



It is a tight fit but the HS-50's fit fine.

Battery Tray

After all the above has been placed, mount the battery tray made from $\frac{1}{8}$ " balsa and use the battery position to balance the model as shown on the plan.

ASSEMBLY

Wing

Using Spars And Aligning Wing Panels

The first task is to epoxy the lower wings accurately onto the fuselage. Use 5-minute epoxy for this task. Apply epoxy to the wing rib that meets the fuselage. Attach the wings to the fuselage. Use the locating spars to assist with aligning the wing panels. Allow epoxy to set.

After the lower wings are attached, the struts are inserted. Use thin CA to strengthen the laser cut ply cabane struts. These provide attachment points to be epoxied into hard bass blocks in the top wings. The top wing is added and epoxied in place.

Fitting Tail Surfaces

The horizontal stabilizer is in two halves and has tabs that fit into slots in the side of the fuselage. Insert the two halves, and dry fit the elevator using CA hinges. The elevator serves as an alignment tool so that the horizontal stab can be CA glued in place. The vertical stabilizer also fits into a slot in the top of the fuselage formed in F11.

Adding Detail Of Control Horns On The Pushrod Ends

Slip the control horns onto the wire pushrod ends and, with both the servos and the control surfaces centered, glue the horns into their slots.

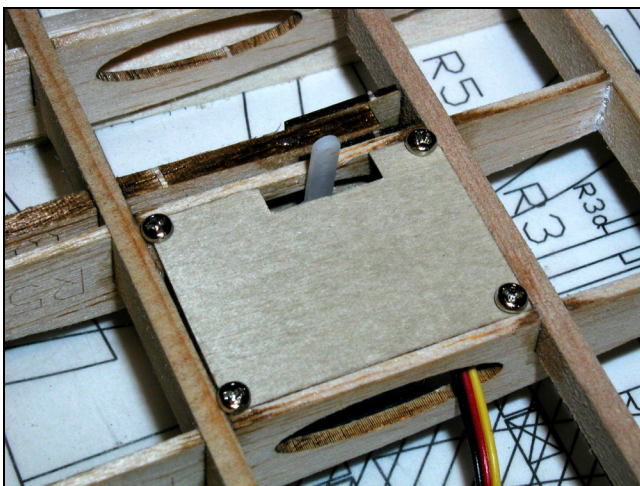
Fitting the Guy Wires

Use strong thread or Kevlar fishing line or elastic beading cording to simulate rigging wires. Use small screws, fishing hook eyes, straight pinheads or small eyelets to attach the lines. While not technically required these wires can add a degree of strength to your model.

Windsock Datafiles "Albatros CII/CIII" publication has details on placement and markings. Available at:
<http://www.aeroplanebooks.com/>

Battery Hatch

Fashion a battery hatch from 1/32" plywood



Balancing The Model

Balance the model at the point shown. It is best to position the battery to do this operation.

FLYING

Robert posted this on Ezone's Scale Modelling discussion forum:

"The Albatros flew successfully today! You can now advertise the plane "as flown in the San Diego Mid-Winter Electrics" meet. (2003)

Otherwise, the power is quite satisfactory for scale flying without being feeble. That's with a 3:1 gearbox, 9x6 prop, Speed 400 motor and an 8-cell KAN 950 battery pack. As you can see, it can be given a more powerful prop if desired.

The relatively small rudder (compared to non-scale, r/c'ified planes) means that one has to be careful of ground loops until up to speed. After trying some gradual accelerations unsuccessfully, I just gave it max throttle; it scooted along, picked up speed and behaved itself.

It is going to need some trimming. The right top wing didn't accept the washout warp during construction. I think the strut moved while the glue was drying. I'll have to fix that.

Once I trimmed the ailerons to counteract the roll tendency, it tracked quite well in the sky, and landed kissing soft at a nice sedate speed. I didn't try any stall tests, because of the trim issue. I'll wait until a quieter weekend to test its envelope further.

Bottom line? A beautiful kit, that flies very nicely. I give it two thumbs up! Saluda! "

The model should ROG on pavement or hard surfaces. On grass, the model may require hand launching. Be careful that your hand or fingers do not catch on the lower rigging. Launch firmly and level.

The tail surfaces should not need excessive throws. Let the model gain altitude slowly off the runway. Applying too much up elevator at slow speeds risks a stall. Make your turns gently as tight turns risk tip stalling in any model. Don't expect the elevator to make the model climb. Think of the elevator as a device to change the attitude of the model. The wing and airspeed ultimately make the model climb. Often down elevator applied at stalling can avoid a major crash. The most important details for proper flight operations are:

- 1) CG location. Tail-heavy models never fly well or at all.
- 2) Down and right thrust
- 3) Straight and non-warped wings.

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