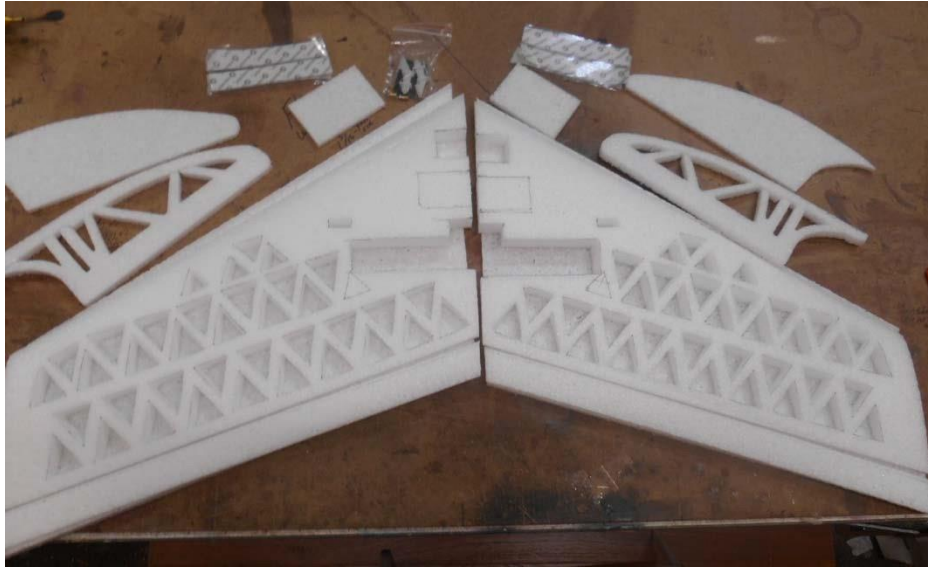


Wingola 3 Kit \$30

The
Kit



Tools and supplies needed

- 1) Hot glue gun and glue and or foamtack
- 2) C/A
- 3) Covering iron
- 4) 4) X-acto knife
- 5) Masking tape
- 6) 2s 850 lipo battery (included in power pack)

Included in the Kit

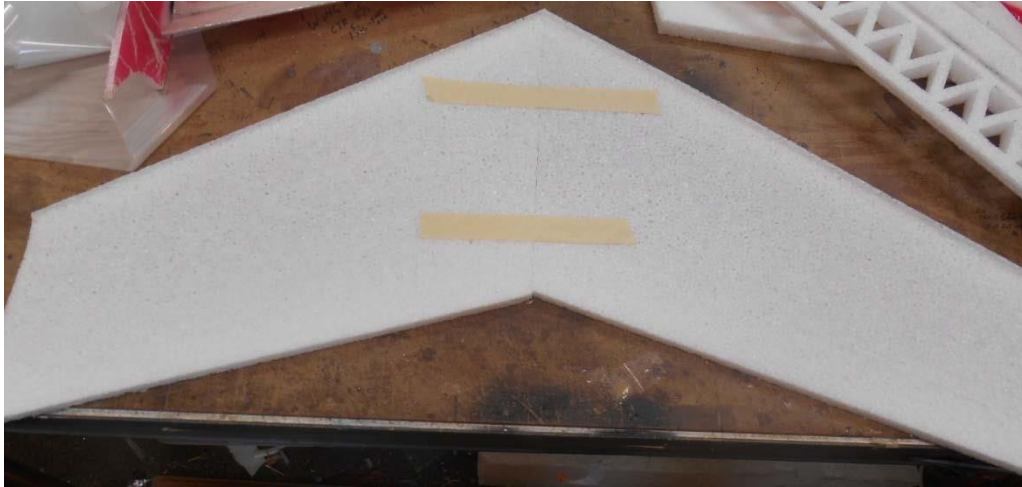
- 1) Wing cores and shucks
- 2) Indoor and outdoor winglets and drag brakes included but not pictured
- 3) Pre-bent pushrods and hardware.
- 4) Precut 1.3 mill new stuff covering included but not pictured
- 5) 3d printed motor mount
- 6) Hinges
- 7) Velcro to attach removable, interchangeable winglets

Power Pack \$75

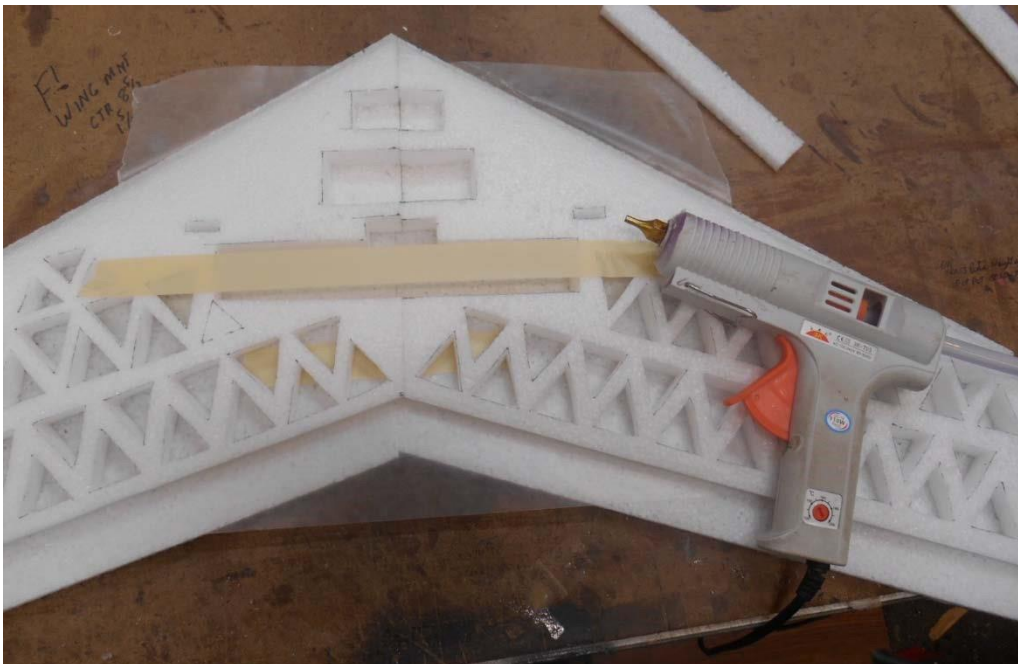
- 1) 2 emax 9051 servos
- 2) 12 amp esc
- 3) Sunnysky 2304 1800 motor
- 4) 1 2s 850 lipo battery with JSC connector
- 5) 3 2mm connectors for ESC to motor connections
- 6) Female JSC connector
- 7) 2 7x3.5 orange gemfan props and orings (19mmx2.5mm)

Build Guide

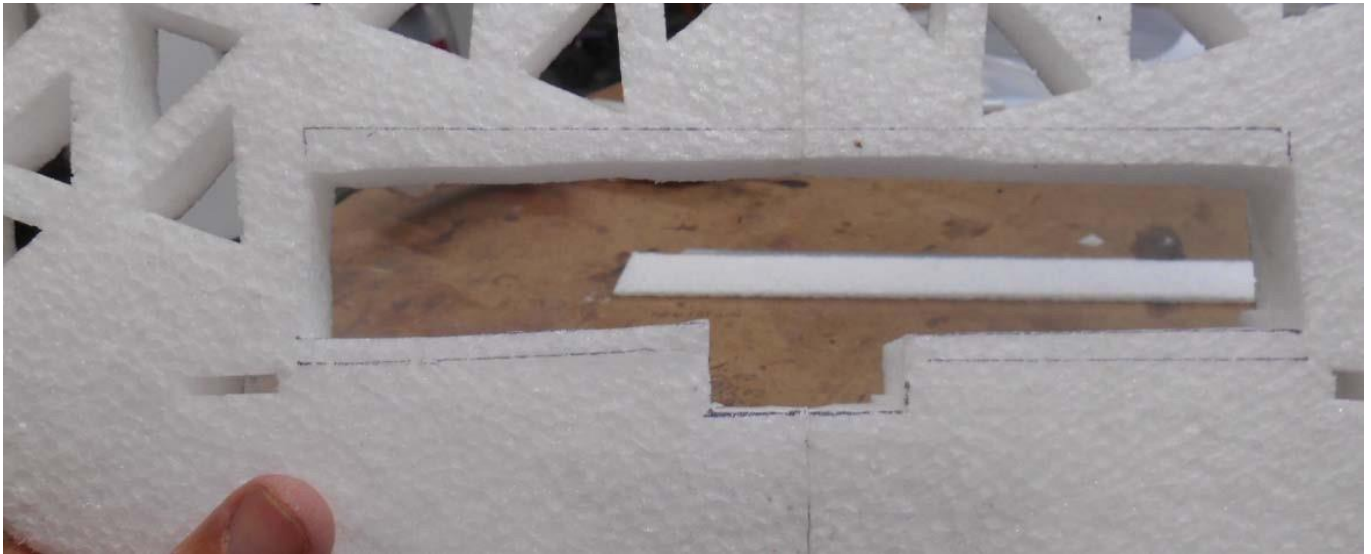
1) Tape bottom shucks together cover with a piece of wax paper.



2) Position wing cores on shucks on top of wax paper tape core together and glue together.



3) Draw lines on the leading edge of prop slot top and bottom and cut bevels to ease the transition of air to prop. Use a triangle to make them square with the centerline of joined wing halves and to check the squareness of the motor mount notch



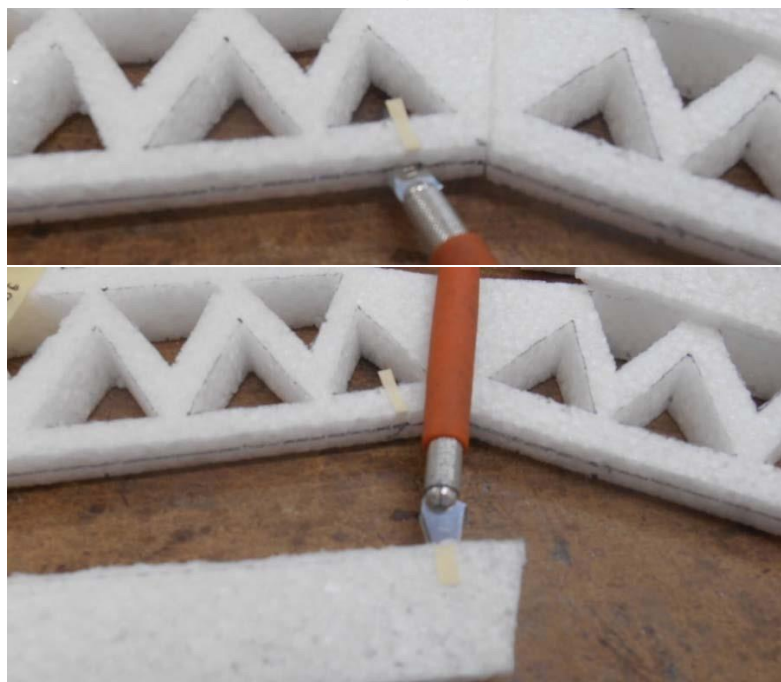
Lay a piece of masking tape on a ruler and mark out ten segments of tape and cut these will be used to mark the position of hinges.



- 3) Place aileron next to the trailing edge of the wing and place tape tabs to mark the location of hinges at $\frac{1}{2}$ " ,5" 6",11", and 15 $\frac{1}{2}$ ". The one at 5" is the location of the control horn



- 4) Use an X-acto knife to cut slots in the trailing edge of the wing and matching slots in the leading edge of ailerons at the locations marked with the tabs of masking tape.



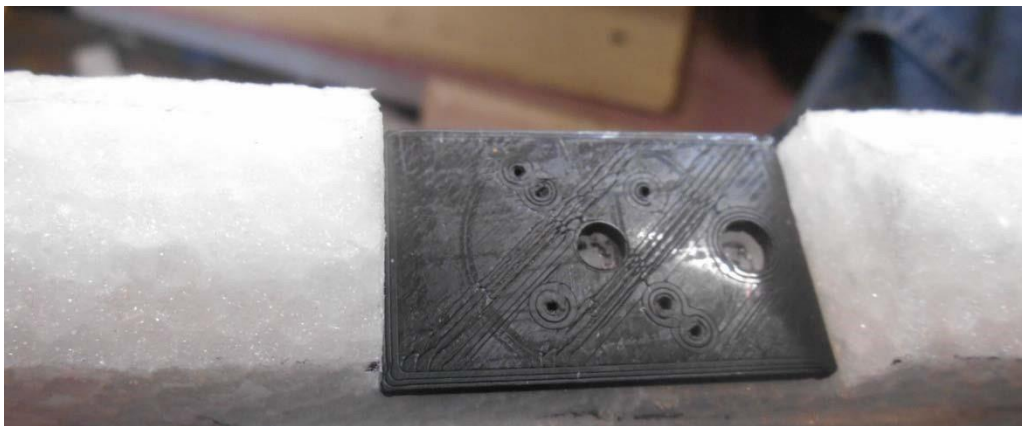
- 5) Insert c/a hinges into slots cut in the ailerons and work them into slots in the trailing edge of the wing.



6) Maintain a 3/16" gap between the trailing edge of the wing and the leading edge of the aileron. This will allow you to iron the covering into the gap from both sides to form a continuous hinge. Use thin C/A glue to glue them in place.



7) Use the printed firewall to mark the holes for the motor shaft and ESC wires to pass through; some of the motors have a shaft that needs clearance. Cut holes with a piece of sharpened brass tubing. (Note firewall has holes to match most motor mounts.)



8) Clear holes of excess glue for motor wires.



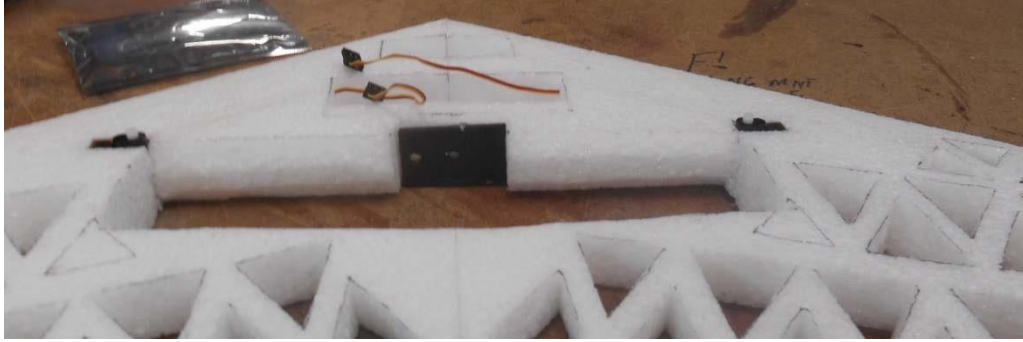
Note firewall color will vary.

9) Routing for servo wires.



Cut slits in foam approx. $\frac{1}{2}$ " deep with an XACT knife—push wires into slits with a fingernail as shown.

10) Orientate servo wire towards the center of the wing.



11) Push servos into the wing, so the tops of the case are level with foam. Tape tops of servos and rx and battery compartments to keep glue off.



12) Spray light coat of 3M77 contact glue on the airframe. Let flash off for 1 hr. or until it is no longer sticky, just slightly tacky.

Clean the table of all scraps and debris and dust. It will stick to the wing.

13) Lay wing in the shucks and apply ¼" strips of strapping tape as shown on the bottom and top of the wing.



14) Apply a coat of 3M 77 to tape. Let dry

15) Clean table. Any debris or dust will stick to the wing.

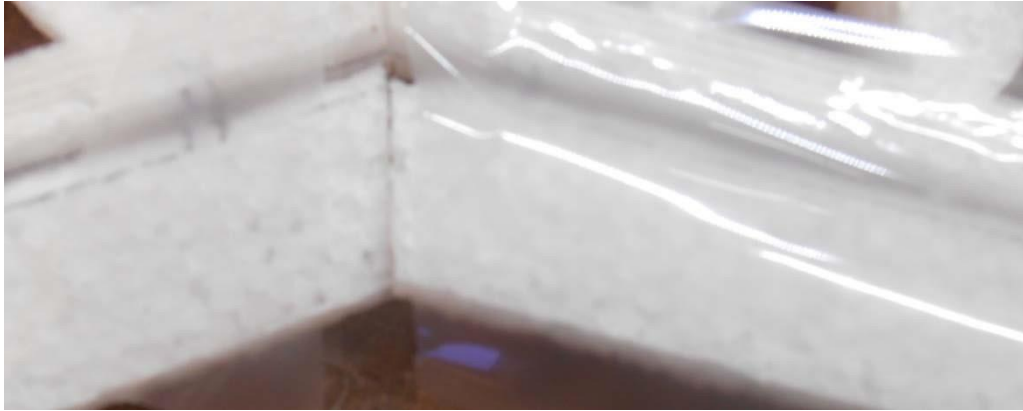
16) Apply covering to ailerons using a covering iron set to approx. 180 deg F. Use the 3" inch strips of covering the dull side is the glue side. Working on the edge of a flat surface.



Lay the covering on wing 1" overlap on the trailing of the wing. Smooth down with a finger to remove wrinkles; apply a hot iron to just the overlap on the wing, not the ailerons, only do one at a time.



17) Trim excess at both ends. Save excess to cover air brakes.

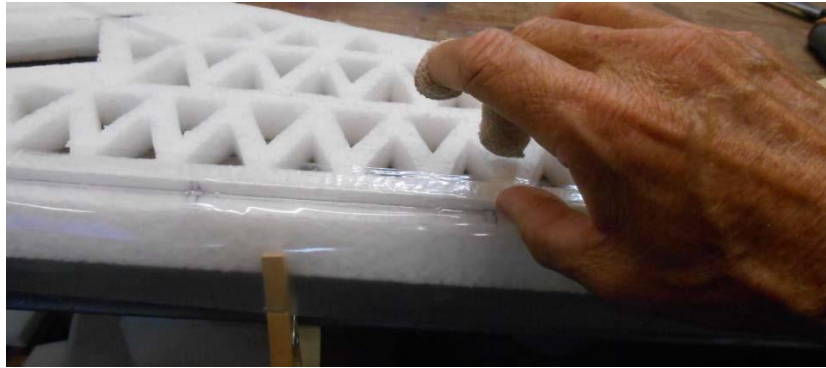


18) Move the wing to the edge of the table. Fold the alerion down to hold the hinge line open.

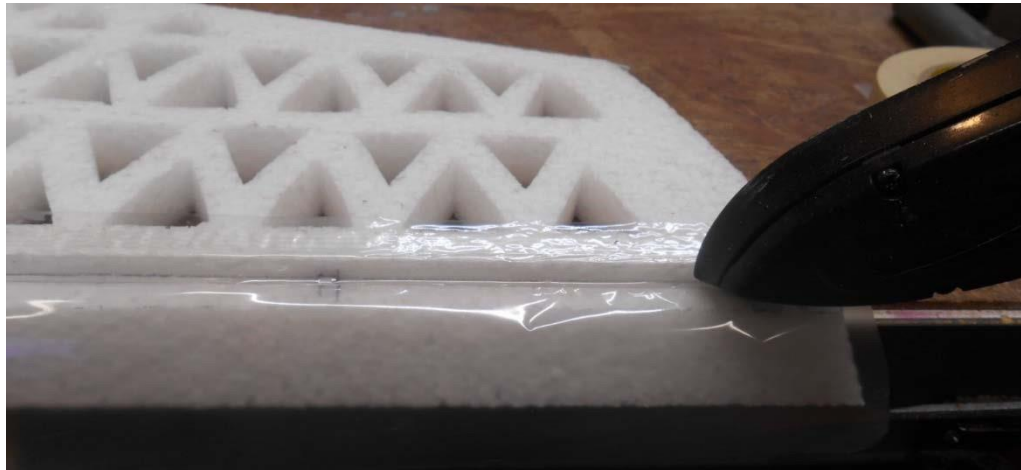


I use a clothespin and tape to the edge of the table

19) Using your thumb, push covering into the hinge line.



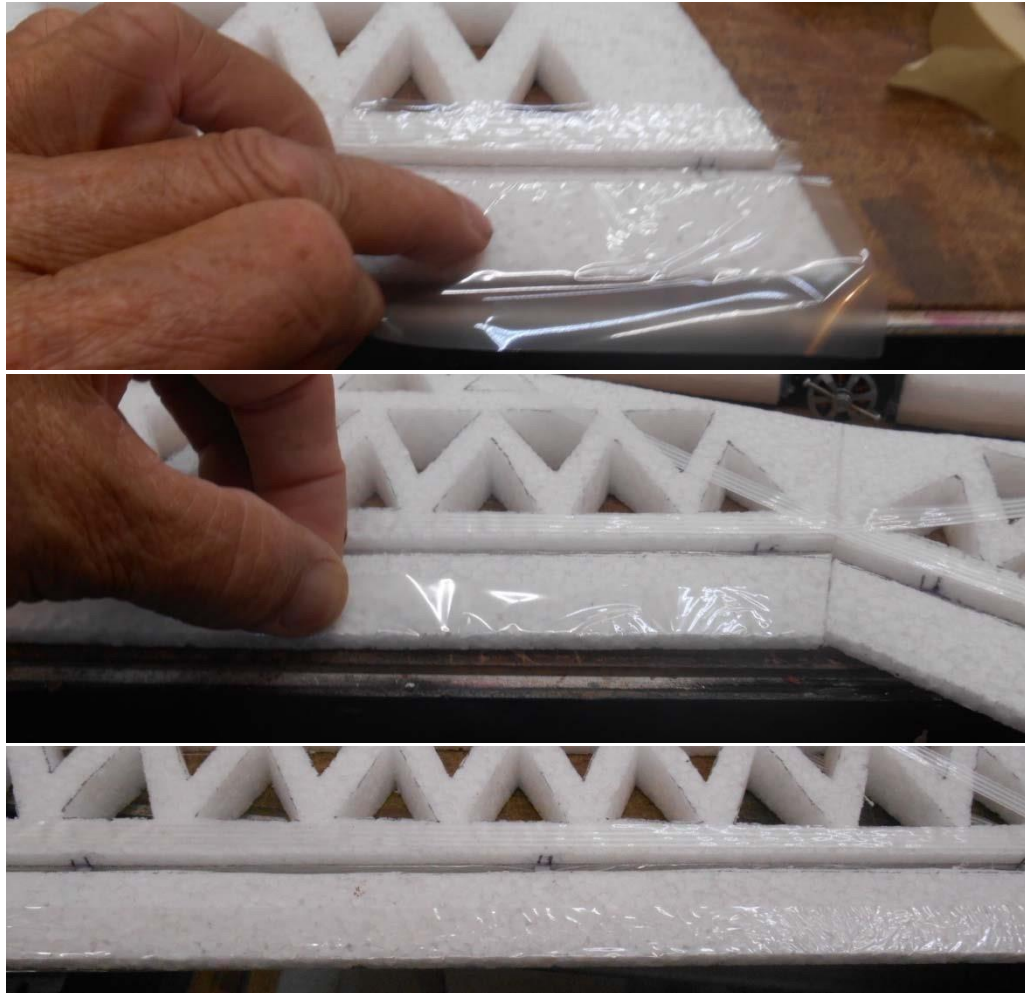
20) Using the tip of covering iron, iron the covering to the trailing edge of the wing.



21) Then iron the covering to the leading edge of the alerion. The covering will fill the gap between the wing and the alerion. When you cover the other side, the covering will form a continuous hinge.



22) Now side wing forward, so alerion is flat. Smooth the covering on to alerion with your finger, then iron covering smoothly on alerion around the trailing edge and on to the other side.



23) Repeat process on top aileron.

24) Repeat process on other aileron.

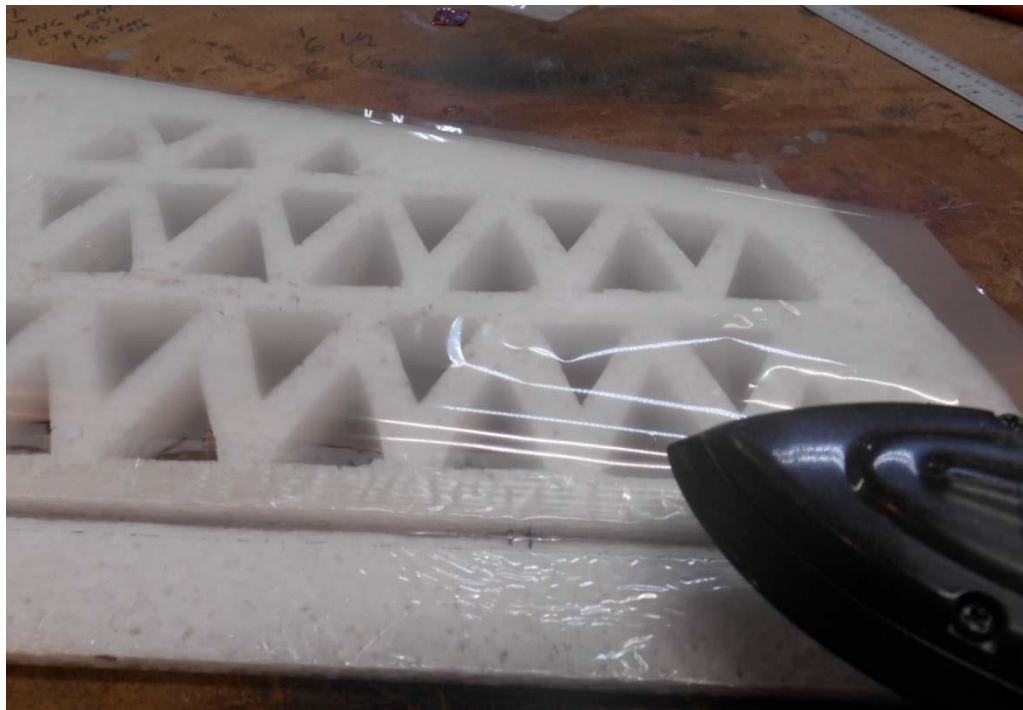
25) After both ailerons are covered, move on to covering the wing bottom first with the precut pieces. The frosted side of the covering is the glue side.



26) Lay covering on wing leaving approx. $\frac{1}{2}$ " margin at tip and 3" at center. Align with trailing edge of wing.



Tack covering along trailing edge the smooth wrinkles and iron down.



Flip wing over and trim covering at leading edge of wing leaving approximately 1" to wrap around leading edge



27) Repeat process on bottom of other wing then top of both wings. Cut holes in top covering for servo.



28) Cut covering over prop slot as shown and iron to foam in prop slot.



Now is good time to decorate before installing pushrods and control horns.



Wing shown is done with colored packaging tape.

29) Prepare control horns ream or drill out hole in control horns so pushrod connector rotates freely. Use Loctite on nut to keep it from coming loose. Use third hole trim off top hole



30) Install RX hook up servos and power up position servo arm as shown.



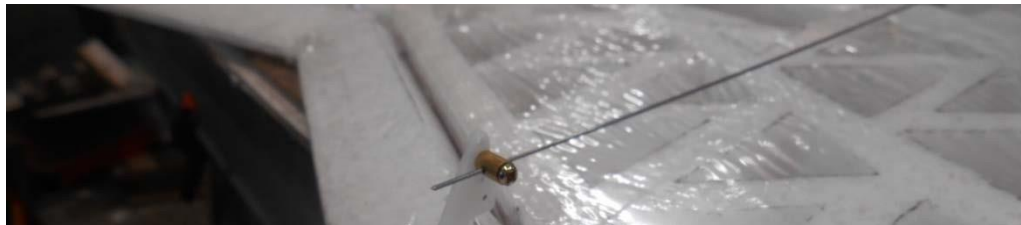
31) Install pushrods and use to mark location of control horns on alerions cut slot in alerion. Position control horns so pushrod connectors are towards wing tips. Push horn through alerion and push hold on clip onto stem and use ca to fasten in place.





Trim off excess length of stem when glue is set.

32) With Rx and Tx on and servos energized loosen screws in push rod connectors and insert pushrods. Set ailerons with trailing edge up from level approximately $1/16''$.



33)Cover winglets. Cover both sides of outdoor winglets. Use 6" strips of covering fold in half crease and cut.



Iron to one side then flip over and trim as shown. Finger cuts are necessary as the covering does not shrink or stretch like most iron on coverings.



Iron covering around and on to other side.



Do the same to other side encasing foam.



34) Position Indoor tips as shown to ensure you make a right and left. Again cover both sides of of winglets.



35) Apply covering leaving enough to wrap around bottom of winglet.



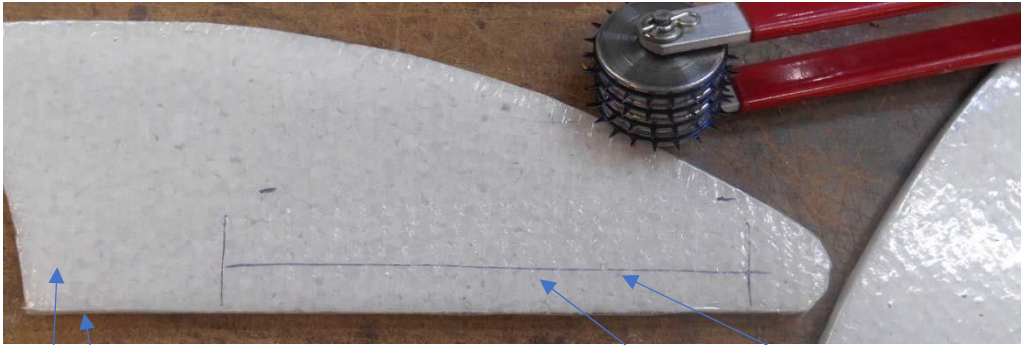
Flip over and trim as shown.



Note fingers cut to facilitate wrapping around curved surface with as few wrinkles as possible.



36) Mark Winglets for location self strck vlecro



$\frac{3}{4}$ " from tip
 $\frac{3}{8}$ " from bottom



37) Apply stick back velco be sure to the pices marked wing go on wing and winglets go on winglets.(There are four pices marked winglets so you can change between indoor and outdoor winglets)



Repeat on all winglets



38) Apply hot glue to tips of wing and smooth with iron.



Apply Velcro

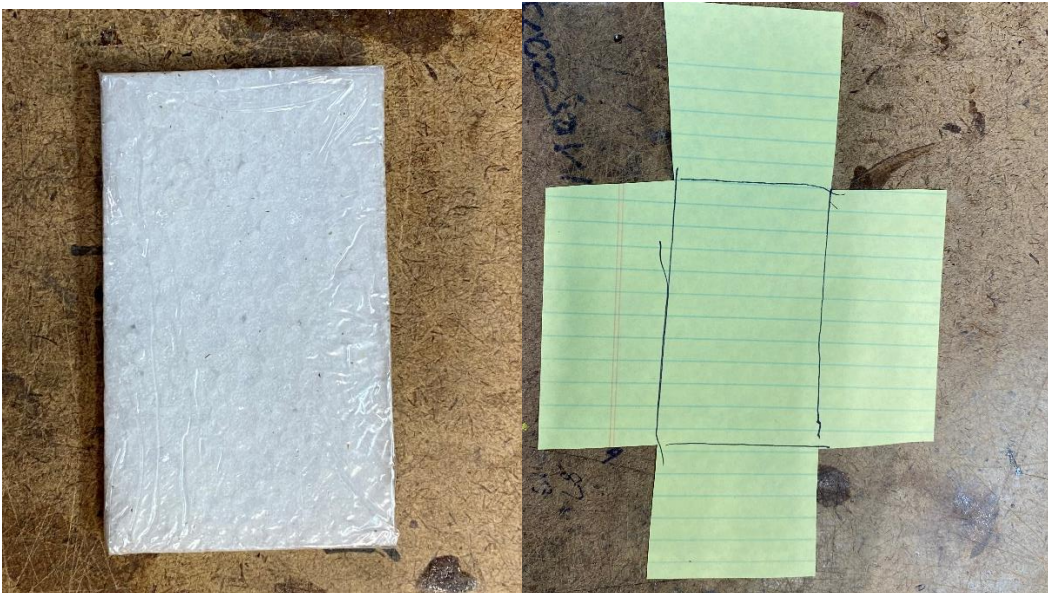


Wipe hot iron on paper towel to clean off most of glue then use alcohol to clean off any residue.

39) Cover air brakes with scaraps for covering use on ailerons.



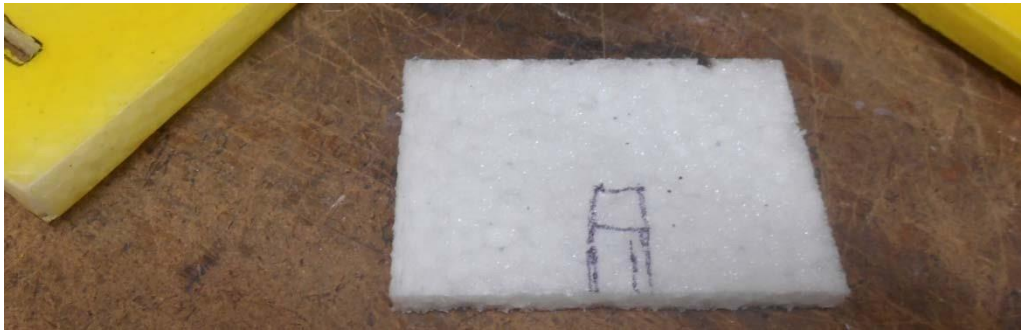
Shape covering and wrap air brake from both sides.



39) Cut slots in indoor winglets to accommodate airbrakes.



Notch drag brake to fit as shown.



40) Solder JSC connector to battery side of ESC. Solder motor connectors to motor side ESC. Insulate with shrink tubing.

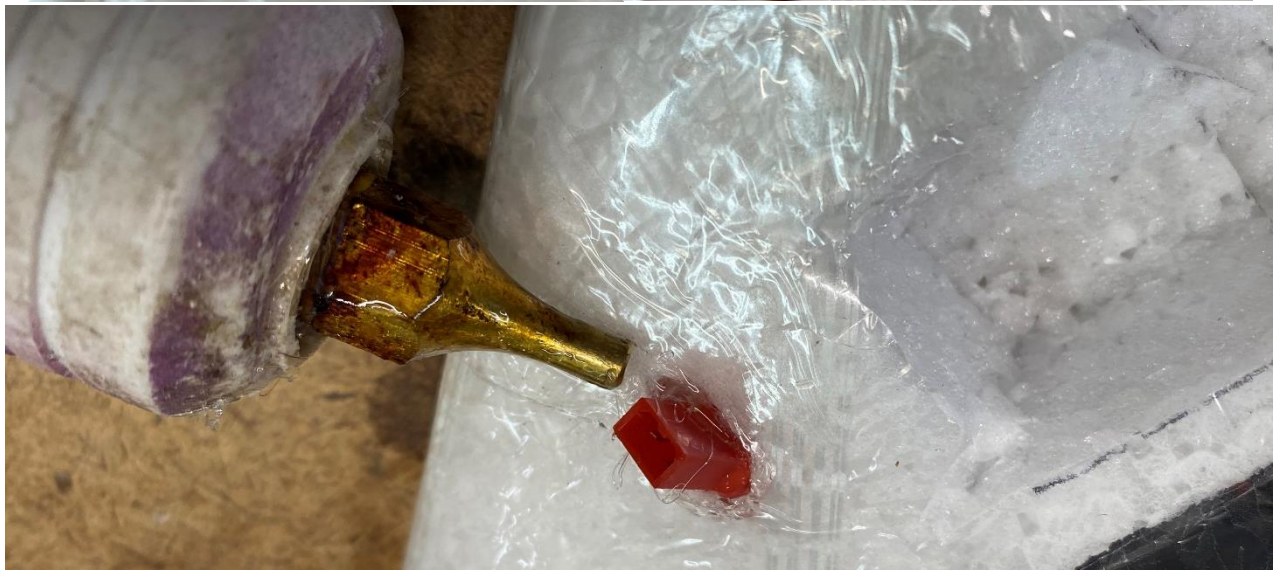


41) Install motor to firewall and threading wires into Rx compartment.



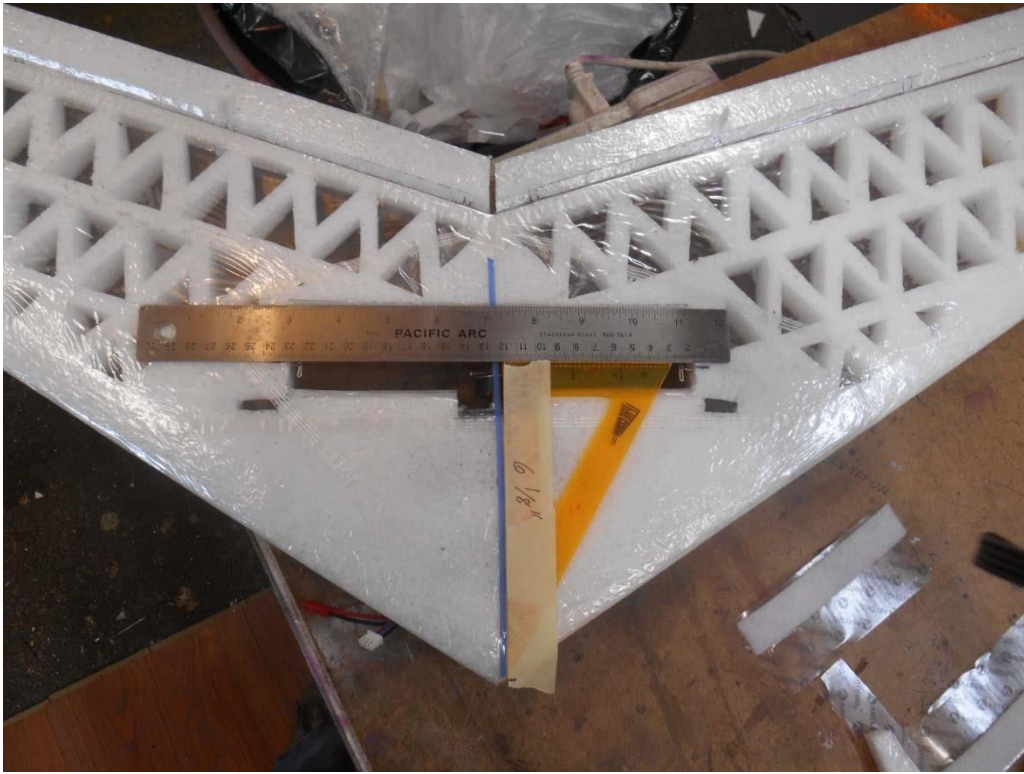
42) Connect to ESC and RX, connect to battery and make sure motor is turning CCW. If not switch any two of the motor wires.

43) Make a channel for battery connection foam and hot glue in place.



Install prop.

39) Attach winglets and install battery. Turn wing upside down and mark CG and push T pins in at marks and suspend by string to balance. Should take approximately 7 grams or $\frac{1}{4}$ oz.



40) Cut slot for weight (spare change) in battery compartment



41) Glue in nose weight with foaming glue to keep weight from cutting its way out of foam.

You are now finished. Enjoy!

I set the timer on my TX for four minutes. This works for full throttle runs leaving enough charge in the batteries to prevent running lipos too low...

OPTIONAL

Make the shucks into a condom for the Wingola.

1) Glue the shucks together.



2) Mark and cut out channels for control pushrods.



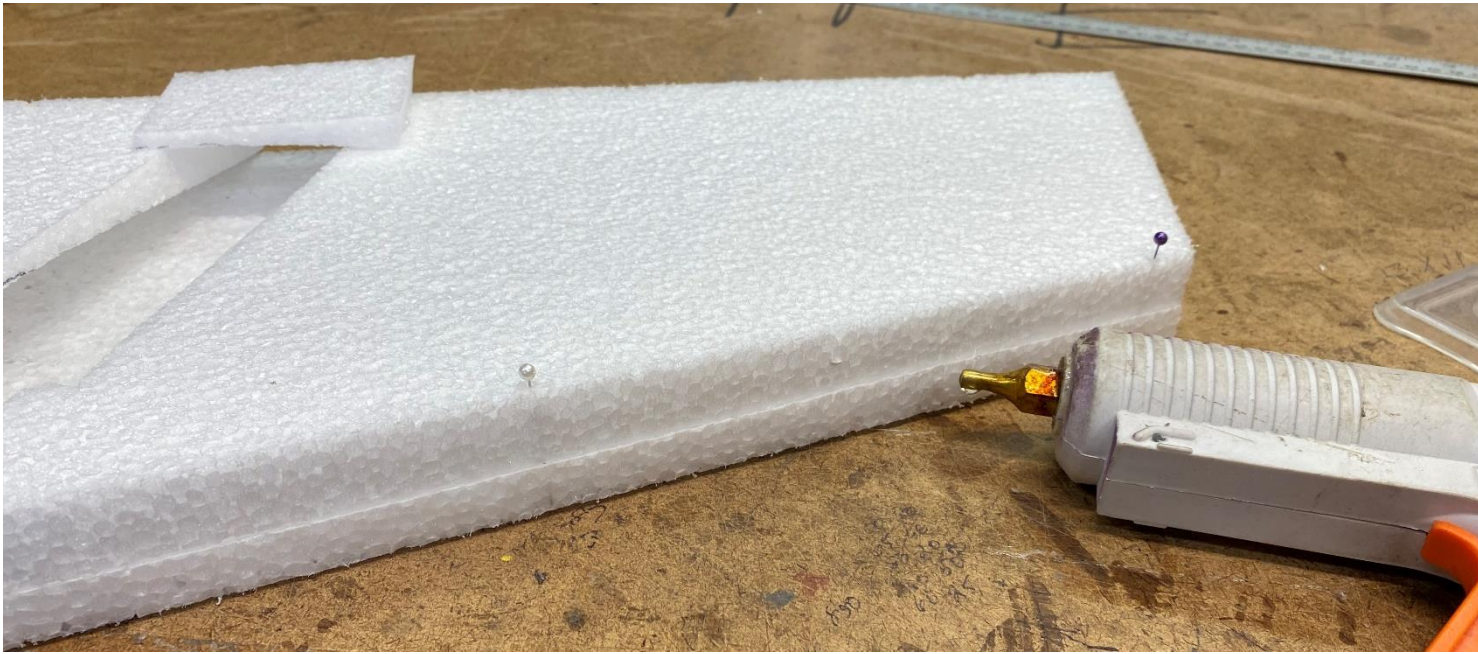
3) Trim and glue scraps you cut out to support the cut outs.



4) Pin shucks together.



5) Glue leading edge together.



5) Trim 1/2" off each end and insert wing. And cut hole to clear battery connection.

