

## 34" PELICAN AILERON WING BUILD - by CRASH TEST HOBBY

The Pelican is a 34" trainer that can level its own wings and put its nose on the horizon once trimmed and balanced. It can handle more wind than most flying planes in its class. It is cut from EPP foam that won't dent or crush. The Pelican below is shown with laminated wing and tail and colored packing tape trim. Laminate for fuselage comes in kit. Add 10' laminate if you want to laminate the wing and tail. The aileron wing is on both the conventional and flying wing elevon versions as shown.



### SPECIFICATIONS

- Center of Gravity: 2.00" (5 cm) back on the wing.
- The CG is critical and the plane will not fly with the CG too far back.
- The motor is installed on the nose of the plane.
- The motor angle is pre-cut. The motor aims down and to the right to compensate for prop torque.
- Elevator Throws: 3/8" up/down/left/right (1 cm)
- Aileron wing dihedral is up 3.5" with other wing half flat on table
- Wing tip angle is up 3.5" to top of each wingtip on polyhedral wing.
- Dowels back 6" and 15" from the nose of the fuselage for the poly wing
- A third dowel is used at 12" back from the nose if you are also flying with the aileron wing.
- Use four to six #64 rubber bands to secure wing
- We recommend the 2812 1534 kv motor, 20A ESC, 2 mg90 servos, 4 servos with aileron wing.
- 800-1300 mah 3S lipo battery
- You can cut 7x6 your prop to 5.5" if using the 2812 motor for lower amperage
- Target All-Up Weight: 10-18 oz (300-540 gm)
- Launch at 1/2 throttle and throttle up
- Lighter always flies better!!!!

### EQUIPMENT NEEDED

- Pelican kit, from CrashTeshHobby.com
- Add laminate for wing and tail if desired. (Adds over 4 ounces to the plane.)
- All electronics and accessories as desired (motor and #6 screws for mounting, props, esc, tx/receiver, servos)
- Low-temperature hot glue gun (and low-temp rated glue)
- Quick Grip Glue or "Goop" brand glue (preferably Household or Plumbers)
- Thin CA glue and baking soda
- Metal straight edge
- Soldering iron (either adjustable-depth tip, or a wheel collar to restrict depth.)
- Fine grit sand paper
- Pliers, Side cutters, or snips (must be flush on one cutting side)
- Razor blade
- Electric drill and small bit
- Philips head screwdriver, Velcro strip
- Iron for applying laminate (hobby iron or clothing iron may be used)
- Iron temperature is 185 to 220 F degrees.

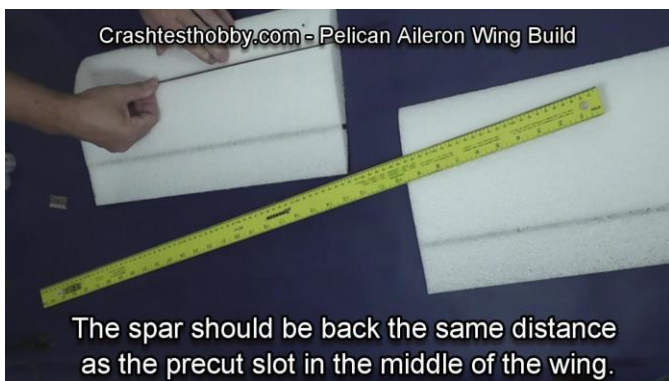
The aileron wing for the Pelican is a great variation of an old favorite. With the 2812-1534 KV motor it is a nimble and exciting plane to fly. You can build it light for slow and stable flight or put a more powerful motor and bigger battery and laminate the wing for aerobatic flight with more throw on the flight surfaces.



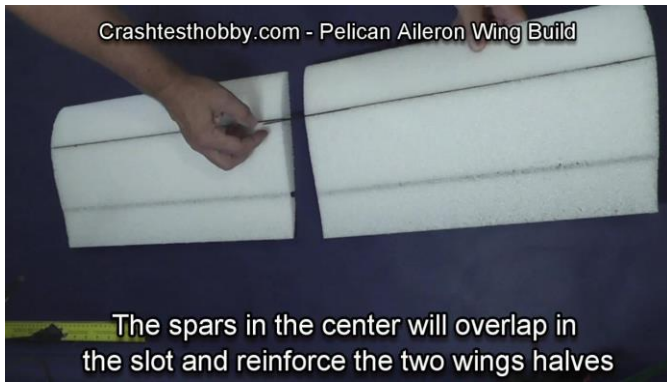
The ailerons are already precut into the wing core. Fold up the ailerons and flex the wing to loosen up the hinges.



Cut a spar slit, with a new razor blade, on the top of the wing for the flat carbon spar. This slit should be the same distance back as the precut slot already in the wing. Lightly sand the spar to help the glue to stick. Press the spar into the slit with the extra spar at the center of the wing.







The spars in the center will overlap in the slot and reinforce the two wings halves

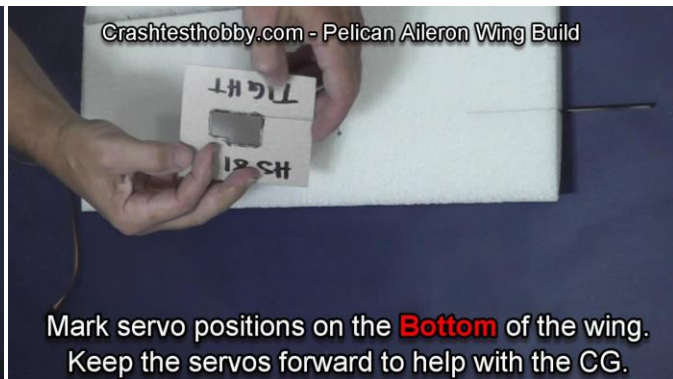


**Do not glue the spars in the precut slot yet!**  
Work baking soda into the spar slot and glue it in with thin CA glue.

Put baking soda along the spar and work it into the slit with the carbon spar. The baking soda acts as a catalyst and speeds up and hardens the CA glue. Blow off the excess baking soda or it will make hard lumps along the spar. Glue the spar in to the slit with thin CA glue.

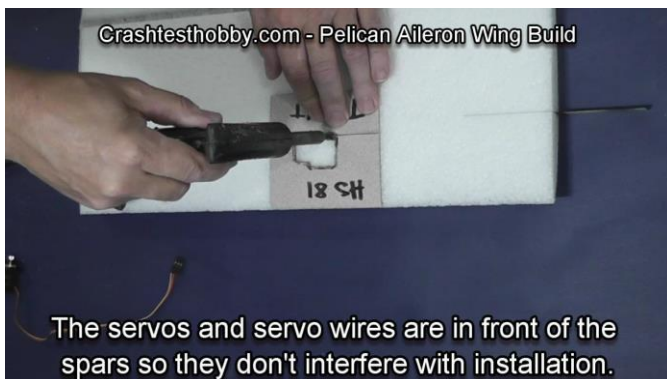


**Do not glue the spars in the precut slot yet!**  
Work baking soda into the spar slot and glue it in with thin CA glue.



Mark servo positions on the **Bottom** of the wing.  
Keep the servos forward to help with the CG.

**Install the servos on the bottom of the wing.** The servos work the best if installed near the center of the wing panels. Keep the servo and servo wires in front of the spar to help with CG. See how long your servo extension wires are before deciding on where to put your servos. I have a servo jig that helps to speed up servo installation that I cut out of Formica. I use this jig with a soldering iron as you can see in the videos. I also frequently draw out the servo on the foam and cut with a soldering iron, hobby knife or a box knife. **Don't cut all the way through the wing.** Lay the servos on their side. Make the holes just deep enough that the side of the servo is even with the top of the wing.



The servos and servo wires are in front of the spars so they don't interfere with installation.



Servos should fit tightly and be level with the surface of the wing. We are using MG90 servos.

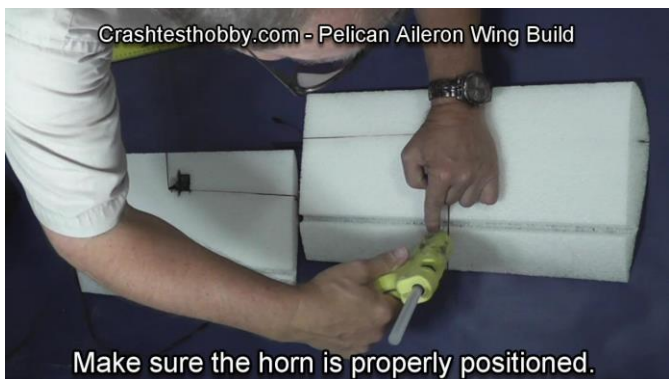
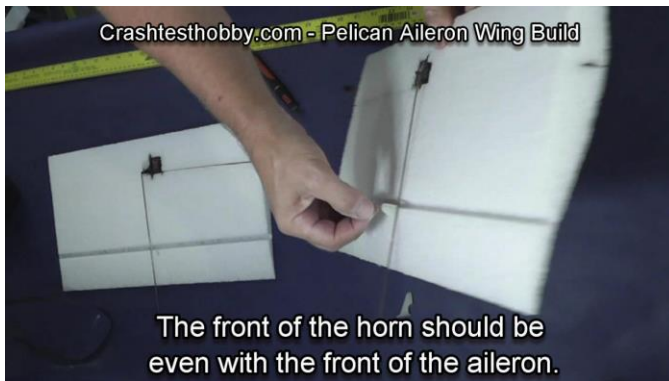
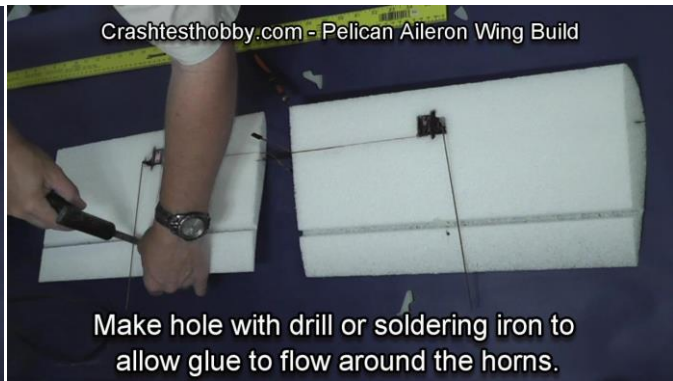


Cut a slit in the wing deep enough to hide the servo wires. Before gluing the servos in place with a low temperature glue gun, bind them to the radio and center the servo arms on the servo. Drill out the third hole in the servo with a 1/16" bit to be big enough for the push rod. Don't glue the servo extension wires in except for where they exit the wing in the middle where they will be plugged into a Y connector that plugs in the receiver.



Install the control horn for the aileron straight behind the servo arm poking out the bottom of the wing. The holes for the control horn should be at the hinge line of the aileron. Cut a slit with a hobby knife. Make a small hole along the slit for glue to move up the horn and glue the horn in place from both the top and the bottom.





Drill the top hole in the horn with a 1/16" bit. Install the EZ connectors. Trim the push rod to length.



Cut the aileron 1.75" from each side of the middle to make a gap for the rubber bands to hold the wing on the fuselage. the total gap should be 3.5" between the ailerons. Trim the corners as shown to give more room to install the rubber bands.



Trim the ailerons in the center so they can move up and down when they are on the fuselage.



Glue the two wing halves together. Don't glue the spars yet.

Glue the wing halves together. Apply glue to the center spars after you have the wing positioned with the tip 3.5" off the table. Squeeze liberal amounts of glue in to support the spars where they cross in the middle of the wing.



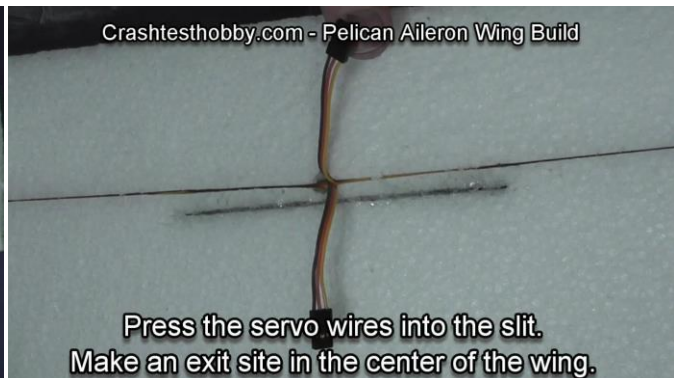
Glue the two wing halves together. Don't glue the spars yet.



With one wing flat on the table the other wingtip should be up 3.5"



Press the spars to proper location in the slot and hot glue in place from both top and bottom of wing.



Press the servo wires into the slit. Make an exit site in the center of the wing.

Make a hole at the exit point for the servo wires to exit the wing. Glue the nylon protectors on the front and back of the wing with a low temperature glue gun to prevent the rubber bands from tearing the wing.



Use a little glue to keep the wires from pulling out.



Use a low temp glue gun to glue nylon guards in place.



Bind your radio and center your servos. Tighten the EZ connectors so the ailerons are in line with the wing. Make sure the ailerons are moving the right direction. When you stand behind the plane and push the right transmitter stick to the right the right aileron should go up and the left aileron down.

