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EPP 3Decathlon – Assembly Instructions.

Recommended Electronics and motors:

Motor: Park 250 outrunner or any equivalent motor
Speed control: 6 amp minimum.
Battery: 250 to 450, 2s , 20C rated or equivalent.
Receiver: 4 channel.
Servos: 9gr. for ailerons, and 5gr servos for the tail.

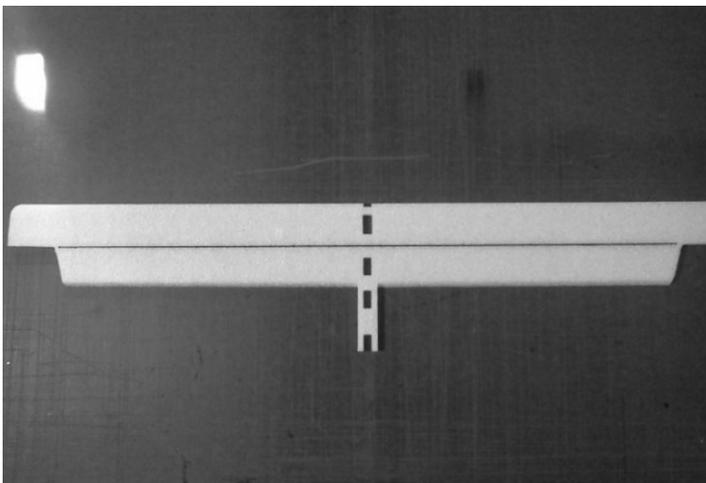
Disclaimer: Fancy Foam Models has done everything we can to caution and inform the end user regarding the use of Lithium polymer battery technology. We are in no way responsible for any damage that may be caused by these batteries. Please read, understand and follow all instructions for the charger and batteries. Failure to use this battery technology properly can result in the risk of fire. If you are not comfortable with this technology, return the batteries packs and kit to us for a refund. By building the kit and using the batteries, you accept full responsibility for the safety of these batteries.

Recommended building methods and glues:

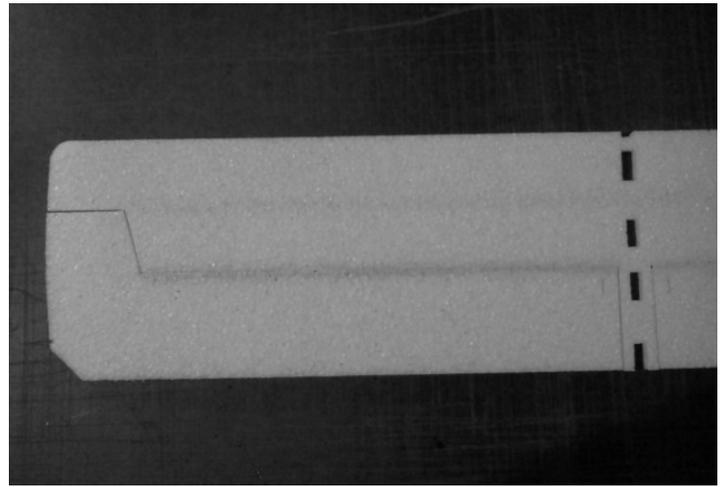
Much of the construction of this model is done by laying the parts on a flat table. It is strongly recommended that you put wax paper down on the surface first so any excess glue doesn't soak through the foam and glue the parts to the table. For all assembly, use thin "foam safe" CA glue. Gap filling or "medium" glue just adds weight. Always use accelerant or "kicker" to get the glue to set. If possible, apply the glue to one part and the kicker to the other part and then press them together and hold until cured. Wipe off any excess glue with tissues before it cures.

Wing Preparation:

Glue the 1x3mm spar into the slot on the bottom of the wing. Let the spar glue cure for 30 min on a flat surface.

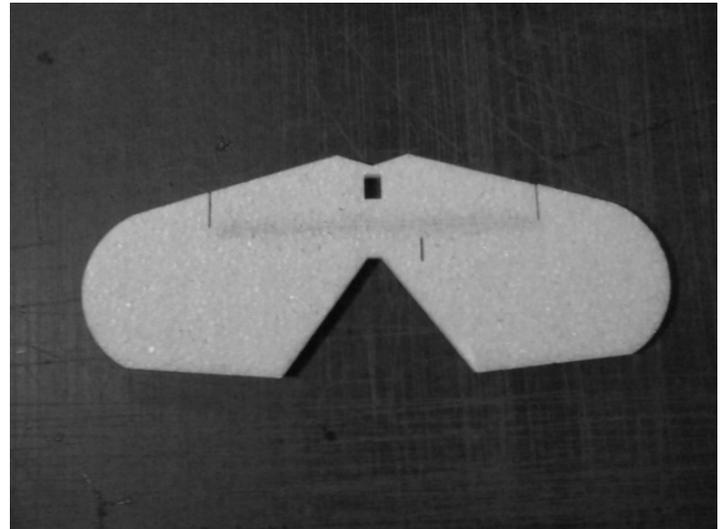


Hinge the ailerons to the wing using the Welders glue method. (See the video on the web site for more info).

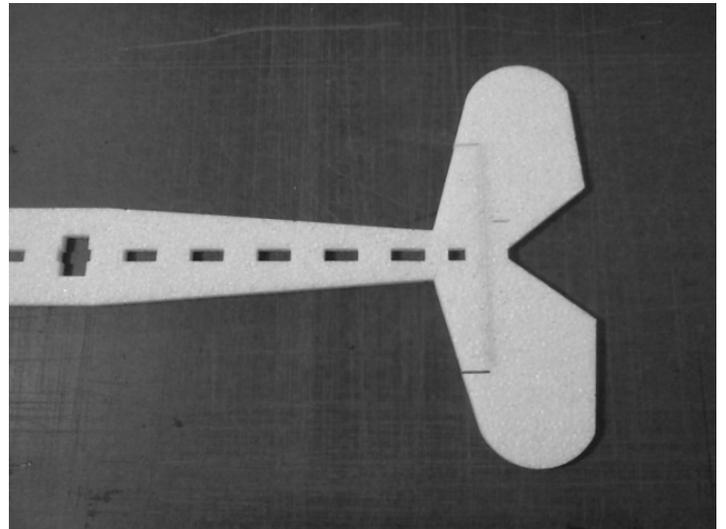


Fuselage Construction:

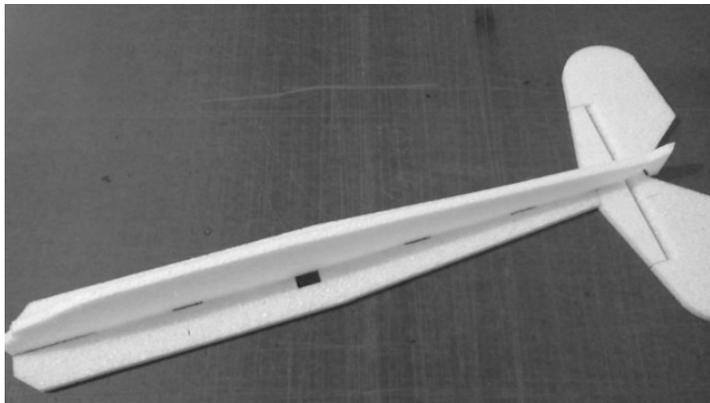
Hinge the elevator to the horizontal stabilizer.



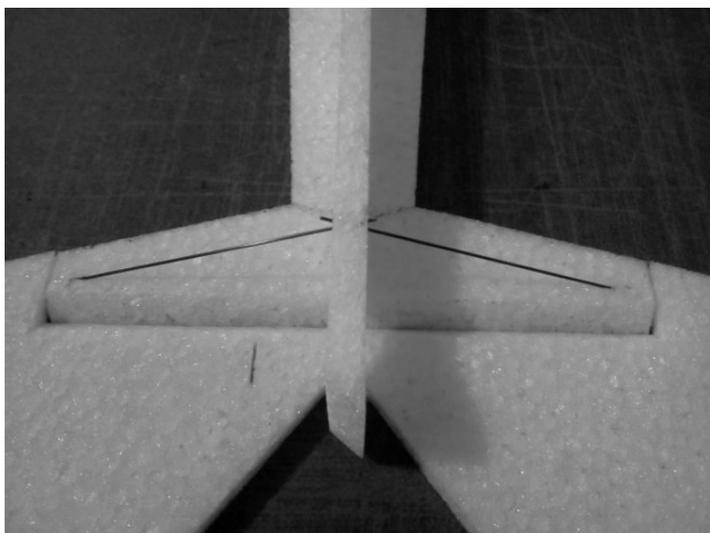
Glue the horizontal fuselage to the horizontal tail assembly.



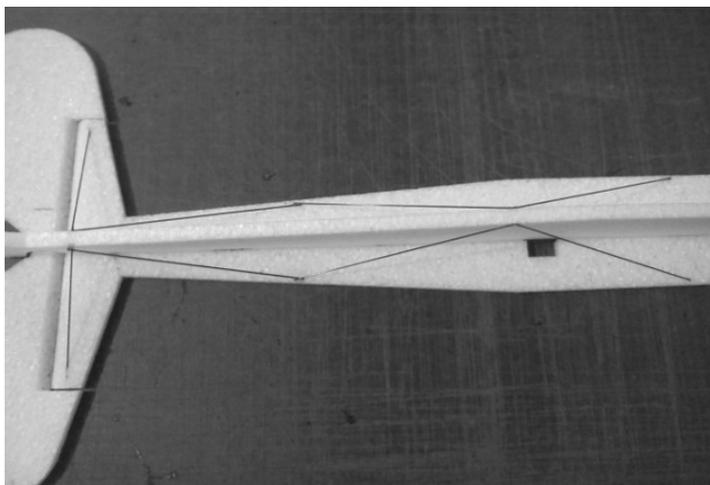
Place the horizontal fuselage assembly (elevator hinge Vee facing up) on your work surface and glue the lower vertical fuselage in place.



Cut two 4" long pieces of 1mm carbon rod and glue them in place as shown from the lower fuselage to the horizontal stabilizer. Ensure that the two parts are perpendicular to each other while gluing.

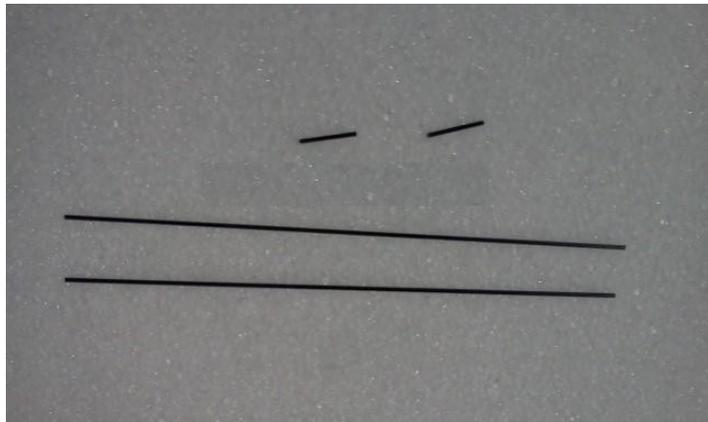


Cut six 6" long pieces of 1mm carbon rod and glue them in place as shown, bracing the lower vertical fuselage to the horizontal fuselage. Ensure that the two parts are perpendicular to each other while gluing.



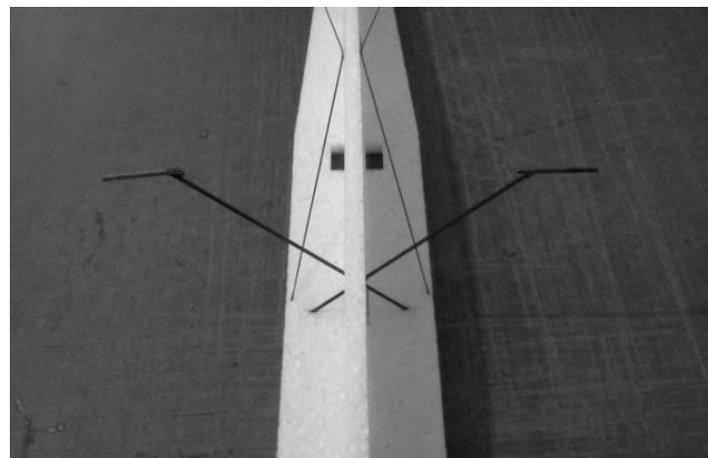
Landing gear installation:

From the two 2mm carbon rods, cut a 1.25" long piece. The short pieces will be the axle. Cut the remaining long pieces to 7" long for the gear legs.



Place the gear legs into the slots in the fuselage as shown but do not glue them.

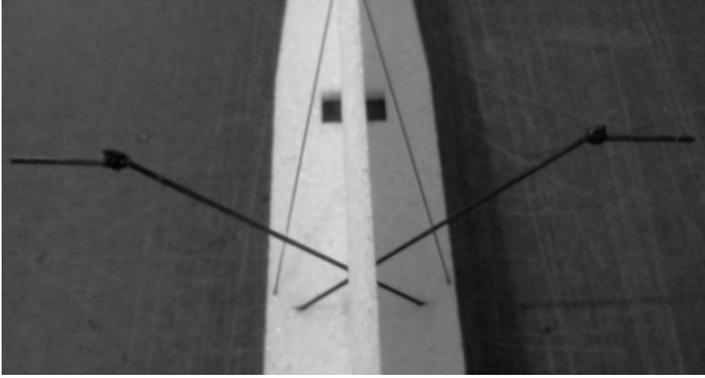
Place a small drop of CA on the end of one of the axles. Hold it in position so it is parallel with the horizontal fuselage. You want the intersection of the two rods about 1/8" from the ends. Spray with kicker to set the glue. Repeat for the other axle.



Remove the gear legs from the fuselage. Use a 12" piece of heavy thread to wrap the axle joint. Make half of the wraps one direction and the other half perpendicular to the first. Saturate the thread with CA and then cut away the excess thread.



Position the gear legs back on the fuselage. Line the axles up parallel to each other and the same height off of the work surface. Glue them in place.

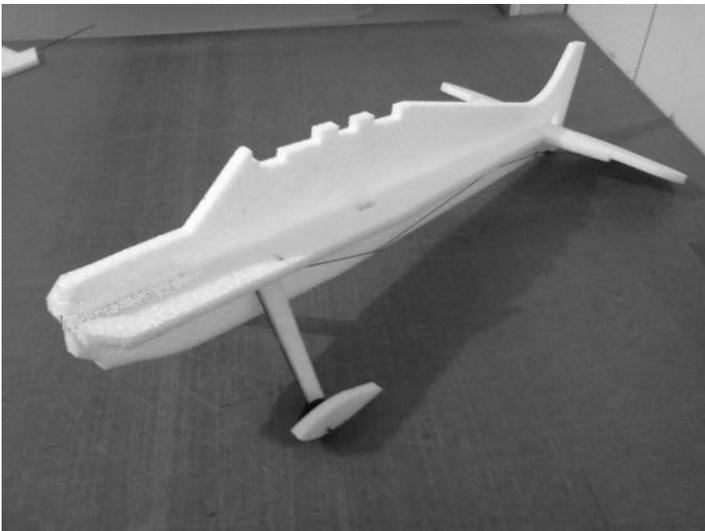


Place the wheel on the axle and then the wheel pant. Put a dab of glue on the end of the axle outside of the wheel pant and then pull the pant over the glue to secure it in place. Glue the gear strut to the back of the gear leg and to the fuselage.

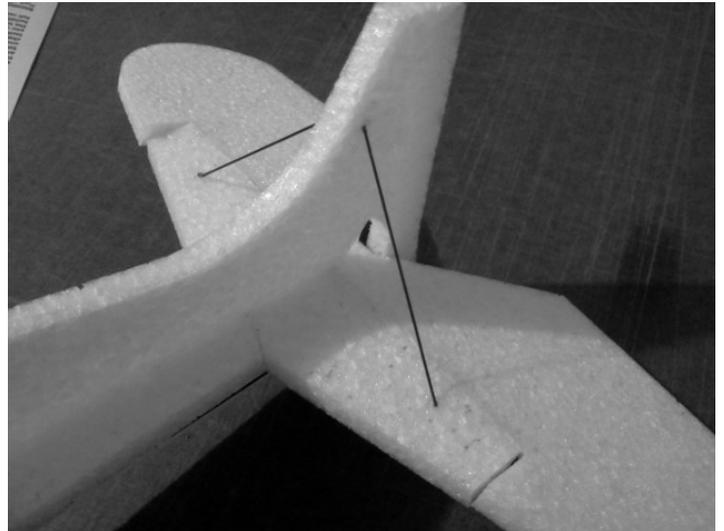


Upper Fuselage and Wing Attachment:

Glue the upper fuselage in place.



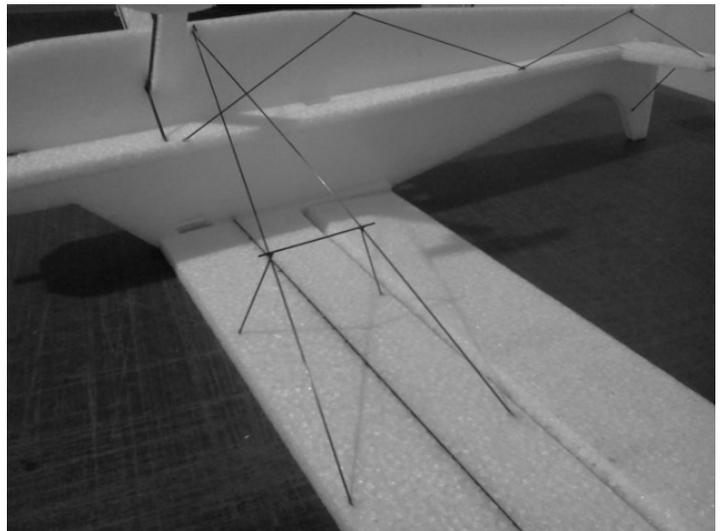
Cut two 5" long pieces of 1mm carbon rod and glue them as shown for the vertical stabilizer braces.



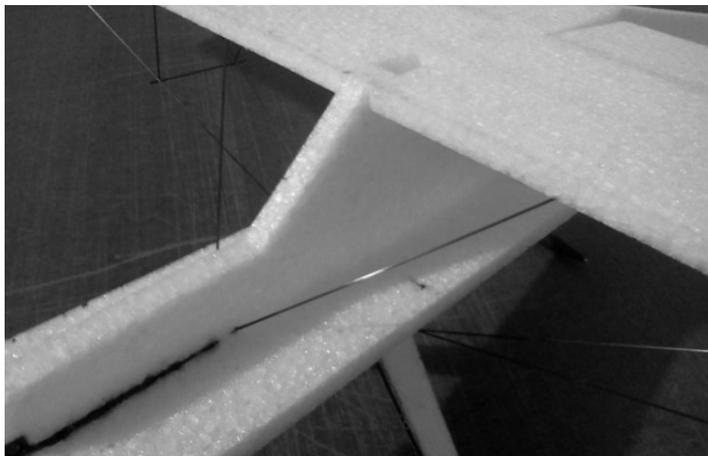
Glue the wing to the upper fuselage. When the glue is cured place the plane up side down on your work surface. Make 2 marks on the left wing 10.5" from the fuselage with one 1/4" behind the leading edge and the other 1/4" in front of the aileron hinge bevel. Repeat the marks on the right wing.

Cut and install 1mm carbon rods from the marks on the wing to the wing strut slot in the fuselage. Glue the rods to the wing and when you are happy that you have the fuselage square to the wing glue the struts to the fuselage.

Cut 1mm carbon pieces for the wing strut braces and glue in place. The braces are located 5" from the fuselage. Refer to the picture below for the layout of the braces.



Cut two 6" pieces of 1mm carbon and glue in place from the wing leading edge to the forward fuselage. These will help keep the wing aligned with the fuselage.



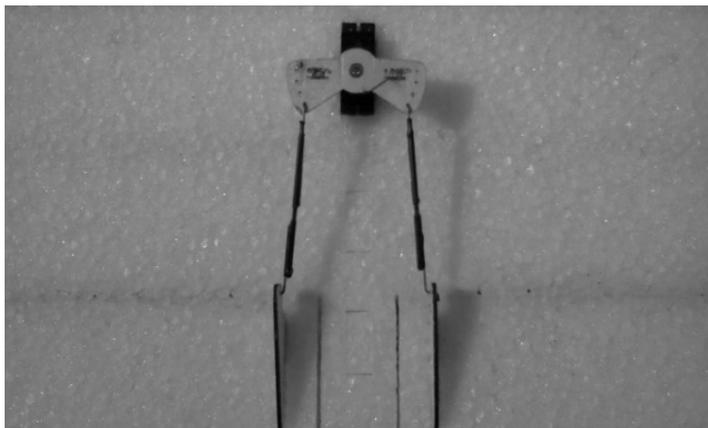
Motor and Radio Installation:

Glue the plywood firewall to the nose and install the motor.



Plug all servos and speed control into the receiver. Attach a battery and check for proper servo rotation and centering.

The aileron servo is installed in the top of the wing. The 3Decathlon is a high wing and susceptible to adverse yaw. To correct this the ailerons will need to have more up movement than down. The offset control horn is used for this by moving the pushrod connection behind the servo pivot.

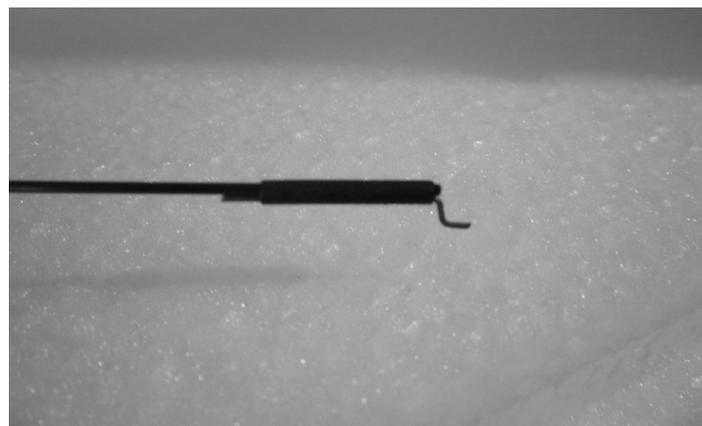


The rudder servo is installed on the left side in the horizontal fuselage. The elevator servo is installed on the right side in the horizontal fuselage. Use a couple of spots of hot glue on each servo tab to hold it in place. Mount all servos in the same manner. It may be necessary to make the servo mounting cutouts larger, we have left them a little small to fit a good range of servos. Connect the receiver, speed control and servos. The Speed control, receiver and excess servo wire can be tucked away below the forward horizontal fuselage.



Push Rod Installation:

Cut slots for the control horns and glue in place. All pushrods are made as shown. Use the .032 wire to make the Z ends. Install the Z ends to the control horns and servo arms. Test fit each carbon rod and trim as needed. Add a small drop of CA to the wire/carbon joint. The 1/16" heat shrink is used to secure the 1mm carbon pushrod to the .032 wire. **Make sure the control surface and the servo are centered before heating the shrink sleeve.** Any adjustments past this point must be made with the sub-trim function of your computer radio.

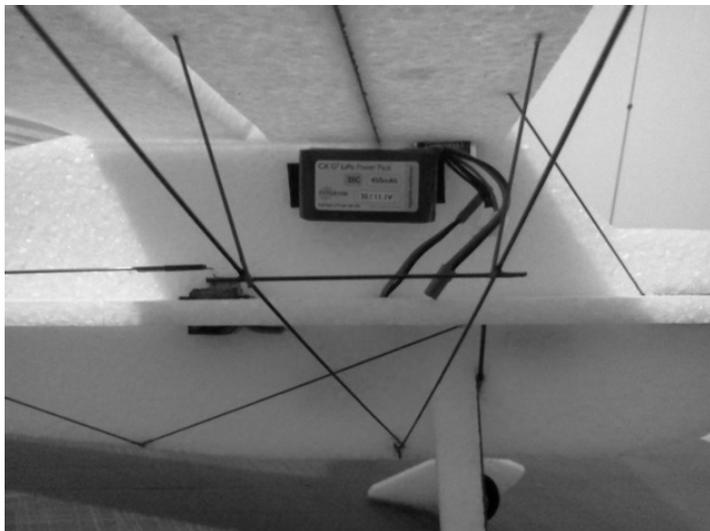


When installing the long elevator and rudder pushrods, make sure to install the included plywood pushrod guides as needed along the fuselage sides. Slip these standoffs onto the elevator and rudder pushrods before attaching the z ends. Cut small slots in the fuse and glue the pushrod guides in place as needed to eliminate any pushrod flex.



Flight set-up:

Use double stick Velcro on the battery and airframe to secure the battery below the wing on the right side of the fuselage. Place it to achieve a CG of 2.5" behind the leading edge of the wing. Adjust the battery location back and forth to suit your flying style.



Use your computer radio to set the final sub-trims, exponential and dual rates. Double check the control directions before your first flight. **With proper CG, the plane should fly nearly the same upright or upside-down.** Good pilots experiment with various battery locations until the CG feels just right.

For indoor flying, we use 2 cell lipo packs rated at 20C or greater. Batteries of 250 to 450 mah are perfect for giving good flight times and plenty of power. The final airplane weight should be between 5.0 and 5.5 oz.

We hope you like the 3Decathlon. It was designed by Champion pilot RJ Gritter to meet the needs of the indoor contest pilot and the backyard sport pilot.

Thank You,
Mike & Niki Bailey
Fancy Foam Models

