

## Instructions

# Light RC Yak 48"

### Color Plane

This is a simple stment that can be as complicated as you'd like... Solvent based inks, permanent markers, and cans of "short cuts" are popular choices.

### Glue Wings

You will find you have a left and right wing half. Glue these together on a flat surface. Gorilla glue is suggested for this step, as is taping over the joints. Also expect the glue to grow out of the joints and get all over your nice table . To avoid this you can lay down wax paper under the wing.



### Seperate Panels

Cut the wheel pants, "shocky" panels, small tab on elevator. These are left to keep parts from breaking during shipment.



### Glue One Side of Fuse

You'll need to glue in the fuse spars before both outer panels are attached... This step is intended for only one side.



First you can use a light color marker to trace the open areas in the fuse onto the outer panels, these areas will not need glue. Then in the

remaining areas apply foam safe CA to the outer panel and, using alignment block provided, align and place the outer to the center fuse.

### Insert Spars

The wing and elevator both have tabs that are to support parts during shipping. These need removed to insert the spars. Insert the spars into the center fuse (7mm x 1.2mm), elevator (6mm x 1mm), and wing spar (10mm square tube). For the wing spar, a bead of gorilla glue, on both sides is suggested. Push the wing against the spar as you apply tape to top and bottom of the wing spar. For the flat carbon either gorilla glue or foam safe CA is suggested. Both can work well.

### Glue Other Fuse Side

After the fuse spars are in, glue the other side of the fuse onto.

If you are using the suggested parts (weights) you can optionally cut out around the lightening hole above the wing spar. Cut the bottom side perpendicular to the wing as shown. This allows tops mount of the battery, not as pretty, but better vertical balance, and easier to install battery.



## Bevel Panels

Using your preferred method bevel the control panels. It is suggested that all four sides, top bottom and mating primary and control surfaces be beveled. Knife, router, sanding block, etc., are common methods.

## Hinge Controls

Using the supplied tape, hinge the control surfaces. Optionally (suggested for at least the rudder) reinforce the hinges using the inlayed thread method detailed on the site.



## Install Control Horns

Pretty straight forward, glue them in. The elevator spar fit into one of the control horns. Usually with the elevator and aileron's horns down, and rudder being on the opposite side of the fuse compared to the elevator. Foam safe CA or low temp hot glue work well.



## Attach Wing

The wing should have been glued, with the spar in place, hinged, and control horns installed. It is now ready to slide right down the front of the fuse. The zig zag interlocking pattern will be covered by the fuse. The front of the wing will need aligned to the fuse, there is a notch left out of the wing for motor shaft clearance. This notch is also used to



align the wing to the fuse.  
The rear of the wing has a notch that rests around the fuse. Slide the wing fore/aft to align the motor mount perch, and use a square to align the fuse to the wing as you glue. If no square is available you can use a CD case.  
Low temp hot glue is recommended for attaching the wing to the fuse. A small fillet down each side is strong enough.

### **Attach Elevator Assembly**

The elevator attaches much like the wing. Alignment is captured in the front and uses two small laser cut lines in the rear. The cut lines will be partially removed during beveling, but should still be easily seen for this alignment process. Using a square to align against the vertical stab is a good idea.

### **Install Gear Legs And Bracing**

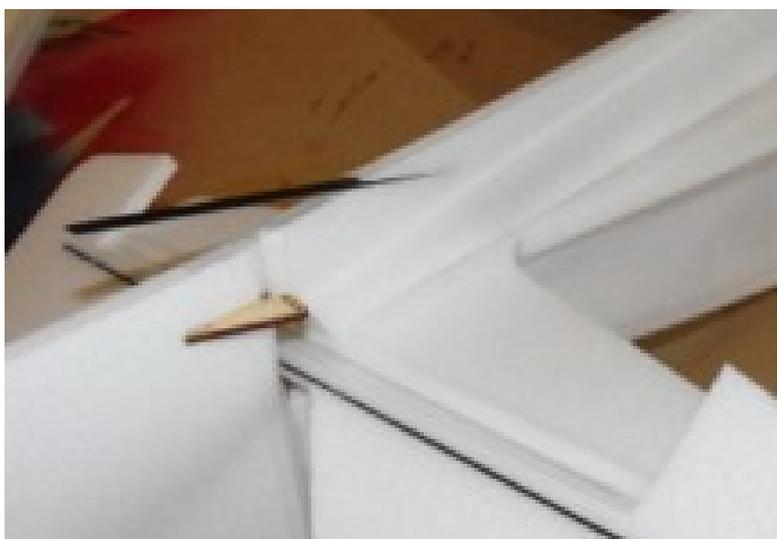
The gear legs cross through the fuse directly under the lower fuse spar. The 4mm square tubing will intersect the wing at 8" aft of the nose and 3" out from the side of the fuse. On the fuse the carbon will pass through directly below the carbon spar in the fuse at 6-5/8" and 7" aft of the nose of the plane. Slide the spars through the fuse and temporarily set the gear supports onto the carbon tubes. As you can now



see the tubes need to be resting flat against each other for the supports to slide on. Dimple the wings with the carbon tube. Now swing on gear leg out of the way and apply a circle of low temp hot glue around the dimple, leaving a glob on the dimple. Then lower the gear leg into the dimple rotating it to line the glue around the leg. Quickly fasten the support (temporarily) to the leg to hold alignment as the glue cools. Repeat to the other side, then remove the supports to glue the legs to the fuse and each other. Once the gear is in place, glue the supports to the gear (doubled up) using CA (not foam safe) Bend the wire as shown, in a tight "J" shape. The leading edge of the carbon will have the longer leg of wire sticking out. You can offset leg length differences using the wire, to level the plane to the ground. Using the supplied self adhering heat shrink, set the wire to the carbon. Allow the set to cool before setting it down. After the gear is cool, use a set of pliers to bend the wire parallel to the table/ground. Again you can level the plane by bending the wire differently to offset any build difference.

### **Glue Tail Skid**

Cut a slot into the fuse for a tail skid. Using carbon left over from the fuse spars insert and glue in.



Foam safe CA is suggested.

### **Install Foam Wheel Pant**

These are two pieces, each side, that were removed from the fuse. Glue them together being sure to create a right and left side. Optionally sand and shape to foam before setting them. Slide the foam onto the gear and then a wheel onto the axle. Align the foam to the wheel, and apply low temp hot glue. Quickly set the plane on the table and realign the foam to the wheel as well as clocked to the table. Repeat on other side.



### **Attach motor Mount And Bracing**

Slide the motor mount on and test fit. Set the motor in place and check for interference between the motor shaft/collar, mount, and fuse. If all is well glue the mount to the fuse (low temp hot glue or foam safe CA), then glue the bracing around the mount and to the fuse (epoxy or foam safe CA). After all bracing has cured, glue the bracing to the mount (CA, not foam safe or epoxy).

### **Put in Electronics**

Install servos (low temp hot glue), RX and ESC (velcro or low temp hot glue), motor (supplied screws). Power up the system, and center the servo arms, leaving the screws off the arms until

preflight checks. Also check for travel direction before applying trim.

### **Build / Install Control Rods**

Create "Z" bends and build control rods. Start by attaching a bend to one end of the carbon, measure/mark, cut, then attach the other bend while the control rod is on the plane, taking care to keep the servo and control surface centered. To attach the bend, heat a section of the provided self adhearing heat shrink around the bend placed on the carbon. A thin saw blade or other peice of steel can be used as a shield to keep from over heating the foam. If results are not satisfactory you can reheat the heat shrink.



### **Install Battery / Set CG**

( @ front side of spar )  
If using the suggested parts, the CG should fall on the leading edge of the spar with the battery setting about 1/3 aft of the spar 2/3 fore of the spar. This falls in line with the lightening hole cut in the center fuse above the wing. If your setup is different, please install the battery where ever needed to meet CG requirements.



**Install Prop, Do Preflight**

Recheck servo centers and travel lengths and direction. Program radio for rates and expos, check prop rotation direction.

**Be Safe, Have Fun**