



WITBLITZ

BUILDING INSTRUCTIONS

Original Design: Tim Batt (Blue Ray Electric Pylon Racer)

Modified version for South African racing by Christo van der Merwe
www.witblitzracing.co.za

Photos and Building Instructions: Danie de Beer
Edited by Christo van der Merwe
Last Update: 19/01/2011

Required to complete:

3 x Micro Servos (8gram max.)

1 x Receiver

1 x 1250mah 3cell 11,1v LiPo Battery

1 x 2208 or Equivalent (max. 1800Kv) Brushless Motor

Epoxy / Foam-safe CA, Covering Material

Quick Reference:

CG (Centre of Gravity)

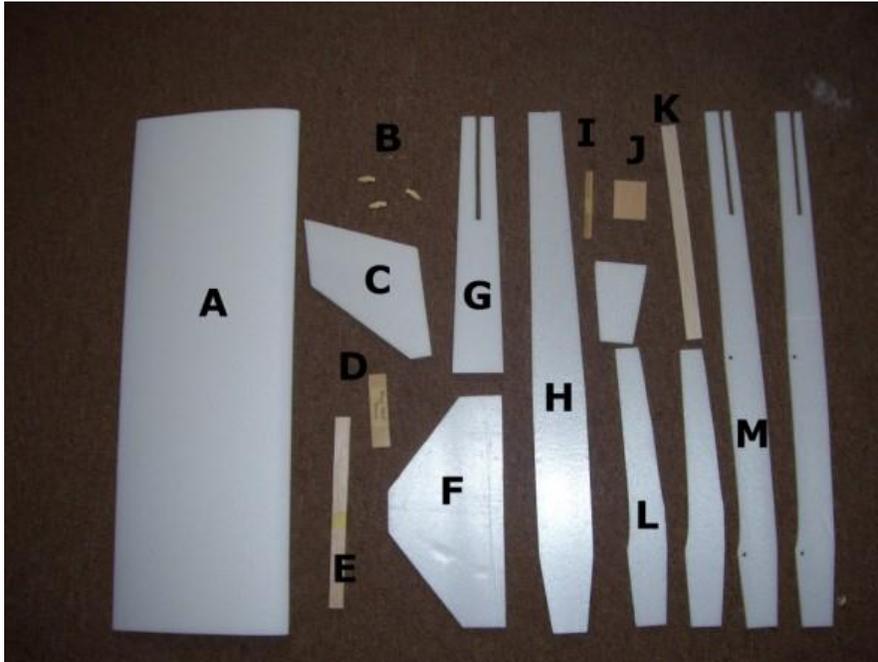
50mm back from Leading Edge of wing

Control Throws:

Elevator Up / Down – 9mm, Expo 30%

Aileron Up / Down – 5mm, Expo 50%

Unpacking the Box



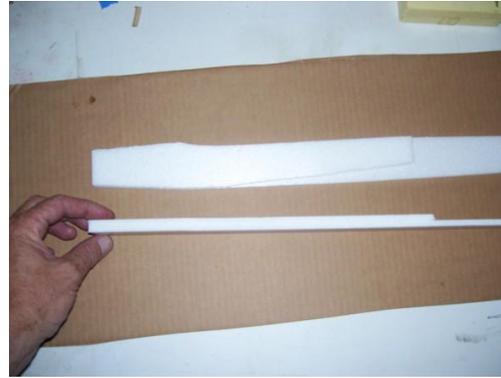
Parts List

A - 1 x	Foam Wing MH33 Profile 610mm
B - 3 x	Plywood Laser cut Control Horns
C - 1 x	5mm Depron Rudder (Vertical Fin)
D - 1 x	1.5mm Plywood Wing band Brace 20mm x 82mm
E - 2 x	Balsa 213mm x 16mm x 3mm Ailerons
F - 1 x	5mm Depron Elevator (Horizontal stabilizer)
G - 1 x	5mm fuselage top rear section
H - 1 x	5mm fuselage bottom section
I - 2 x	4mm x 100m Dowel pieces
J - 1 x	Plywood Engine Mount 50mm x 40mm x 3mm
K - 1 x	Balsa Elevator 250mm x 16mm x 4mm
L - 2 x	5mm Depron Fuselage Doublers
M - 2 x	5mm Depron Fuselage sides
N - 1 x	5mm Depron Fuselage Front Top Section

1. Fuselage

Glue the Fuselage Doublers(L) each to a Fuselage Side (M) using Epoxy or your Favorite Glue for Depron.

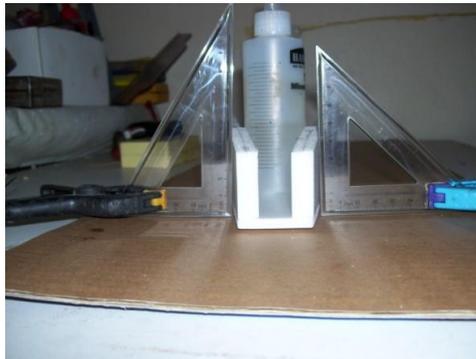
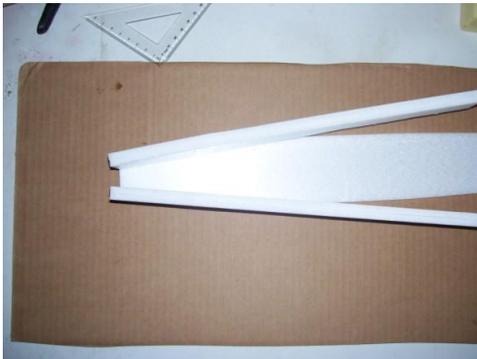
Align the Doublers on the TOP Side of the Fuselage Sides.



Once the glue is dry, locate the fuselage bottom section. (H)

First glue the Front side of the Sides to the Bottom section. I use needles to help me keep the part together.

Make sure that they are 90 degree angle to prevent problems when putting the top sections together.



Once the glue is dry, start glue to the side to the back on the Bottom section. Do one side at a time, to allow a good angle for the fuselage. Again, use some needles to give a helping hand. If you do use clamps, remember to use some scrap Depron piece between the clamp and the Depron to prevent marks on the fuselage.





Fuselage with bottom section complete.

Now locate the 2 top sections Front (N) and rear (G)



Glue the together with the fuselage, starting with the Front Section and then move to the rear section. Again, notice the 90 degree angle.



What you can do, if you feel like it, is to use very fine sandpaper (I use 300 grit) and sand/round the edges slightly to round off the square fuselage corners.



2. Elevator.

Locate sections (F) and the balsa piece (K)



Sand/plane a 45 degree angle on the front side of the elevator. It allows much better movement for the elevator.



Put the 2 sections together to get the complete horizontal stabilizer. Use your favorite material to make the hinges. On all

my small electrics I use normal wide clear packing tape on both sides (bought at any stationary store). That's very strong hinge material and also close all gaps.



Trial fit the completed tailplane to the fuselage and if happy, glue it together, making sure it lings up properly with the wing.



While you are busy with the elevator, locate the rudder (section C) and you can slot and glue that in place too.



Again, remember to check your angles on the rudder and elevator.

2. Wing.

Locate section (A) the main wing. I use fine sandpaper to just flatten the surface slightly to get rid of all the access foam that is on the wing due to the CNC cutting.



If you feel like it, you can cover the wing with your favorite covering material. Again I use the normal clear packing tape run across the wing, making a slightly stronger.



The following part is a little bit risky, but when applying correct it works just fine. Once the wing is covered, use the heat gun and cloth and heat up the packing



tape and wipe with the cloth. This not only make the tape stick much better, but also give a better smoother surface.

Please note. Apply heat in little intervals. Applying too long, and you may order a new wing, burning some ugly holes.

Once done, use a marker pen to draw the cut-outs for the ailerons.



Locate the 2 Balsa Ailerons (E)

The width is 16mm and 50mm from both sides. Cut out the foam from the wing. Use a sharp Stanley knife to prevent un-equal breaking of the foam.



Again, if you feel like it, you can cut one edge of the aileron to give a 45-degree angle.

Fit the ailerons to the wing, using your favorite hinge method.

Once that is fitted, locate the 2 dowel pieces (I) and glue the in the pre-cut holes for the wing.



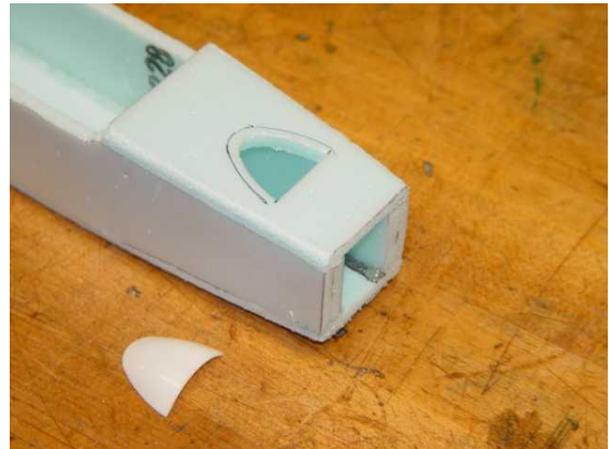
This concludes the very basic building of the Witblitz pylon racer. Now you can add your hardware like any other plane.

This is my finished Witblitz. Now just to add the hardware.



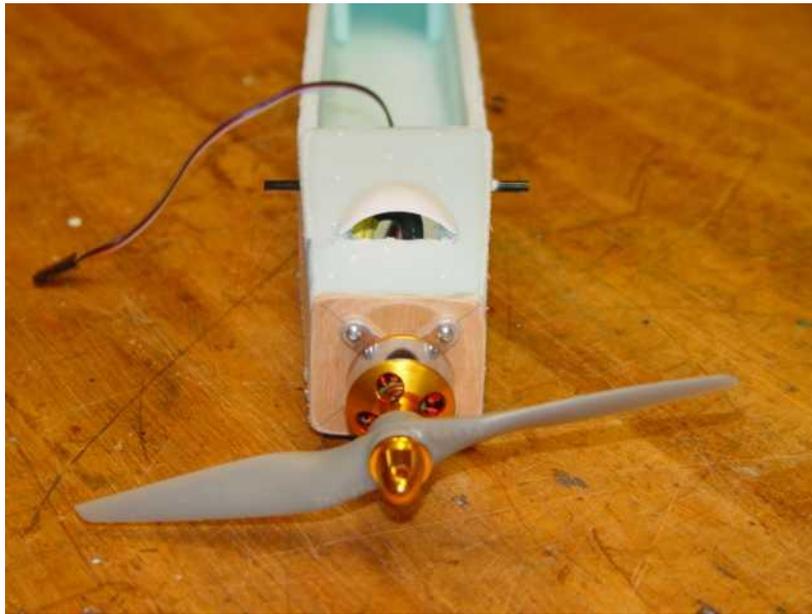
Air Scoop Installation:

Next is the installation of the plastic spoon "hood scoop". Hey, this is a racer! Racers have hood scoops for a reason and this one is used to get outside air into the fuselage for cooling the ESC and battery. Take a look at the pictures to see what I did in cutting the spoon to form a scoop. Place the hood scoop on the top of the fuselage and draw an outline of it. Remove the hood scoop and cut the foam out to let the air in. After the motor and ESC installation install the hood scoop with foam safe CA. The rear of the fuselage is open to let out the hot air.



Motor Installation:

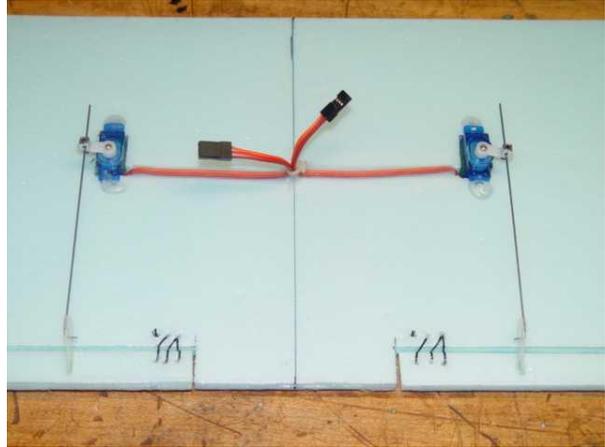
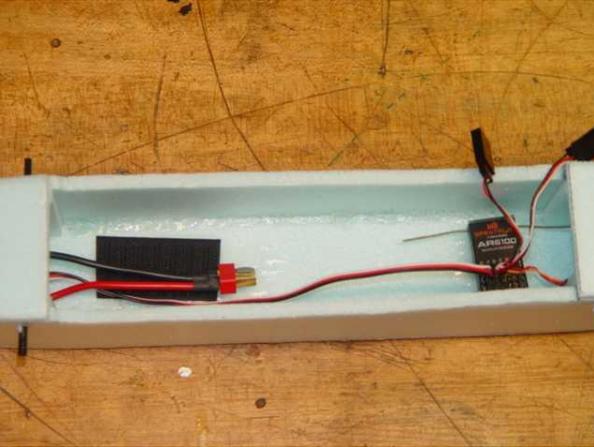
Install the motor mount to the motor and bullet connectors to the wires of the motor and ESC if needed. Mount the motor to the firewall using #2 servo mounting screws. I drilled a ¼ inch hole in the firewall to pass the motor wires through to the ESC. Connect the motor wires to the ESC. Check to see that the motor is turning in the correct direction. If not, simply switch any two of the motor wires connecting the ESC. I mounted the ESC to the inside of the fuselage bottom using double sided tape.

**Radio installation:**

I attached the receiver and battery to the fuselage bottom with hook and loop fastener. If using sticky back hook and loop fasteners, coat the foam with a very thin coating of 5 minute epoxy to make it stick permanently to the foam. Let the epoxy cure before attaching the sticky back items.

The elevator servo will need a 6 inch extension. If possible use an extension with small 32 gauge wires. Remember, lighter is better! I used hot glue to attach the servos. Securely glue the control horns to the foam for the elevator and ailerons.

I used a 3 inch micro wire 'Y' connector to connect the two aileron servos to the receiver. The removable wing provides access to the battery so make sure you have enough slack in the aileron wires to allow the battery to be installed and removed.



Setup:

The CG is located 50mm from the wing leading edge. The battery area is located at the CG so you can use just about any weight battery without affecting the CG. The battery can be adjusted slightly forward or back to fine tune the CG.

I recommend a 2 cell Li-Po 1250Mah 20C battery for the average RC pilot. This will give you plenty of performance while keeping the speed down. For those of you hot shot pilots, use a 3 cell 1250Mah 20C Li-Po and be ready! This little guy screams!

Yes, I know that a 1000mah 15C battery is a better choice for all-out performance but I like the added safety of not pushing the Li-Po batteries to their limits.

For the first flight, set up your radio for these control throws.

Elevator Up / Down 9mm, Expo 30%

Aileron Up / Down 5mm, Expo 40%

IMPORTANT:

Ensure that the Centre of Gravity is 50mm back from the wing leading edge!