MINI FUNTANA BUILD NOTES

FUSELAGE

1. Cut the balsa sides, 1/16" plywood doublers, and all of the formers. Mark the side pieces with "Top" and "Front" for proper orientation.

2. Attach the 1/8" square Carbon Fiber (CF) tubes to the balsa sides along the upper and lower edges of the balsa sides as shown on the plans. Be sure to make a left and right.
* When dry, glue the main doublers to the balsa sides between the carbon Fiber tubes. Line up the holes.
* Attach the 1/64" plywood doublers for the servos where shown.

3. Build the main part of the fuselage UPSIDE DOWN (long CF pieces will be touching the plans) over the plan.
* Slip (DO NOT GLUE) the Carbon Fiber Spar Tube in place to help check that alignment is perpendicular to the Centerline and parallel to the work surface. Adjust as necessary. A misaligned Spar will result in a poor-flying airplane.
* Add formers, starting with F2, and working to the tail.
* F8 & F9 should be glued to the balsa with the plywood between them.

4. Glue 1/8" square balsa Shelf Supports to the bottom of the Battery Shelf, then glue the Battery Shelf to F2 & F3 and the fuselage sides, leaving 1/8" at the front for the F1 firewall.
* Glue F1 in place with epoxy or White Gorilla Glue.
* Glue the Landing Gear Mount to the bottom of the fuselage sides between F2 & F3.

5. Glue 1/8" medium / hard balsa stringers in place in the notches on the bottom of the formers. 1/8" basswood can be substituted for a bit more strength and a small weight penalty.

6. Add the turtledeck formers, F5T through F9T to the fuselage. Glue the 1/8" square balsa (or basswood) stringer to the notches. When dry, add the 1/16" soft balsa sheeting to the turtledeck.

7. Glue the Hatch formers H1 through H5 to the 1/16" Hatch Frame. When dry, temporarily tape the Hatch to the Fuselage and glue formers H7 in place. Glue H6 in place so that it is aligned with F5T. Determine how you want to attach the Hatch - Magnets, Velcro or screws and install the necessary components

WINGS

1. Cut ribs and spars using patterns on the Parts Layout Plans because the ribs have Removable Tabs to keep the wing true when building.

2. Glue R1 and R8 in place. Glue Leading Edge in place and add the R8 Gusset. Cut half-notches in the Rear Spar and glue in place and add the R8 Gusset. The Leading Edge and Rear Spar should be parallel to the work surface.

3. Glue R2 through R7 in place. When dry, add more glue to all joints for extra strength.

4. Epoxy the Spar Sleeve into R1, R2, R2A, and abut it to R3. Apply epoxy along the sleeve to attach it to the Spar. Install Blind Nut into R1 for the wing attachment bolt.

5. Apply 1/16" soft balsa sheeting to the top of the wing. When dry, remove the Tabs from the bottom of the wings and apply the sheeting. Glue the Servo Mounts to R4 & Spar. Cut a Triangle Brace to fit and glue in place.

6. Build the Aileron over the plan. Double-glue the joints. Add scrap balsa for Aileron Control Horn. Each Aileron will have 4 hinges.

TAILFEATHERS
1. Cut the parts from sheet balsa.

2. Assemble over the plans. Double-glue the joints. The Elevator will have four hinges; the Rudder will have three hinges (two above the elevator and one below the elevator going into the fuselage).

3. The slot in the Stab is where the tab on the Fin is inserted. This should be a snug fit. When these parts are covered you will need to cut away the covering in the joints and where the balsa blocks go to support the Rudder.

LANDING GEAR:
1. Cut the aluminum to shape and drill holes for mounting bolts. Drill holes in the Landing Gear Mount to match and bolt the Landing Gear to the fuselage.

2. Cut scrap balsa to fit between F2 & F3 and between the bottom edge of the fuselage and the stringer to fit around the aluminum gear. This will provide solid material to attach the covering.

2-Alternate. Cut away the stringers between F2 & F3 and carve a block of balsa to fit between the formers and shape to match. Glue in place.

MISCELLANEOUS
1. Run pull strings to the servo holes where the servo leads will run. Cover the plane with the Ailerons, Rudder, and Elevator unattached, then install the hinges and control horns.

2. Drill holes in the landing gear and attach the wheels. Wheel Pants can be built from multiple layers of balsa sheet, carved and sanded to shape.

3. Your motor will probably need to have a small motor box, or metal standoffs, to push the motor forward to help with balance.

4. When the motor position is established, use 1/4" balsa sheet to create a cowl. Make a basic box matching the shape of the top view and side view. Add a front piece of 1/8" balsa and carve/sand to the shape you want. Use high-strength magnets to attach to the fuselage.

5. Make a canopy from a clear 2-liter soda bottle. Or if you are ambitious, carve a block of balsa to shape and stretch a piece of acetate over it after softening it in the oven.

6. Install the servos, pushrods, servo extensions, receiver, ESC and battery. Adjust as necessary for weight distribution. Adjust the control surface throws in accordance to the original manual.

7. The wing can be installed in two positions. Insert the Carbon Fiber Spar Tube in the rear-most fuselage holes for Precision Aerobatics and adjust the CG for that position. Installing the CF Spar Tube in the forward set of holes sets the plane up for Extreme 3D maneuvers and the CG must be adjusted for that position. The Wing Mounting Bolt should have a large washer under the head to distribute the loads and keep the bolt head from pulling through the fuselage sides.

8. A cockpit can be easily added by gluing a piece of cardstock or 1/64” plywood to the top of the Hatch Frame between H5 & H6, adding some instruments to H5, and gluing your choice of Pilot to the new floor.