

## **Sbach3D-25 Build Notes**

Included in the zip file is this file, a PDF of the builders manual and 3 PDF files of the complete plans sheet.

### **Plans**

The plans set consists of 3 22" x 36" sheets. I have converted them to a tiled PDF file so they can be printed on a home printer. Each plan sheet requires 9 8½ x 14 (legal size) sheets of paper glued together. Using legal size saves the work of glueing an extra 9 sheets together. Just change the property settings for your printer to legal size. If the paper tray is too short for legal size just let it hang over the end.

Sheet 1 is 1/2 scale and has all the layout and construction details, sheet 2 is a full size pattern of the fuselage and tail and sheet 3 is a full size drawing of the wing and ailerons along with the full size drawings of all the individual parts.

It is intended that the full size patterns be glued to the material with some peel off glue and the material cut to the outlines.

### **Build Comments**

A CF arrow shaft was used in the prototype but any CF tube of about 7.5mm to 8mm diameter (5/16") is good. A wall thicknes of 1mm is about the minimum that should be used on this plane. Thinner wall tube is not recommended.

Be careful when gluing in the plywood wing joiner, since the hole for the fuse tube is in the center it can be glued in upside down. The angle cut is on the bottom.

This airplane has a short nose and a long tail moment arm so builders should avoid adding weight to the tail and use light wood for the stab, elevators and rudder. If the plane comes out nose heavy, the nose should be shortened and the motor moved back or the servos can be located in one of the bays aft of their present location if necessary.

If the tail servos are located in the frontmost bay check that the arms do not interfere with the ailerons.

It is suggested that when the airplane is fully assembled and before it is covered that all the equipment be temporarily installed and the C of G checked by turning the plane upside down and suspending it from a

wire hook located at 4¼ in from the leading edge of the wing at the root. The plane should hang slightly nose heavy. The covering will add about 1 oz to the total weight. A rough estimate of the center of mass for the covering is at the trailing edge of the wing proper.

### **Radio Gear**

The prototype flew with a JR R610M mini receiver and 4 Hitec HS-65MG servos. These are about the smallest size servos that should be used on this plane. Do not use any servos with the nylon gears, the gears will strip within the first few flights.

### **Electric Power System**

This airplane is best suited to the Park 400 to 480 size outrunner brushless motors and 3S (11.1 volt) batteries. A Kv (rpm per volt) of 1000 to 1100 is ideal for the use of a 11 to 12 in dia prop. A motor with a lower Kv turning a larger diameter prop is not recommended as it gives a lot of torque reaction that has to be countered with aileron and/or rudder and the airflow over the control surfaces is not as good.

Weight of motor, controller, mount and 3S 1300 Mah battery is about 9 oz.

### **Glow Power System**

The aircraft was designed to use the .20 cu in to .25 cu in 2 stroke glow engines with a motor weight with muffler of about 10 to 12 oz. Using a motor lighter than 8 oz will likely cause balance problems.

### **Flying**

The light wing loading makes the plane very predictable and easy to fly as it allows the pilot more time to think and react during maneuvers. Pilots just starting out at 3D should keep the the cg at 4 inches and limit the throws to 40 to 45 deg. until their confidence and ability improves.

Experienced pilots will want to set the plane up with maxed out throws and an aft cg. With the throws maxed out the control surfaces are very effective especially the rudder. It is very easy to over control the aircraft during rolling harriers and knife edge. When max throws and an aft cg is used pilots may want to create some different rates and/or flight modes on their Tx.

### Notice

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