

Sopwith Triplane 20" 1/16 Scale

R/C Scale Model Instructions



CONTACT INFORMATION

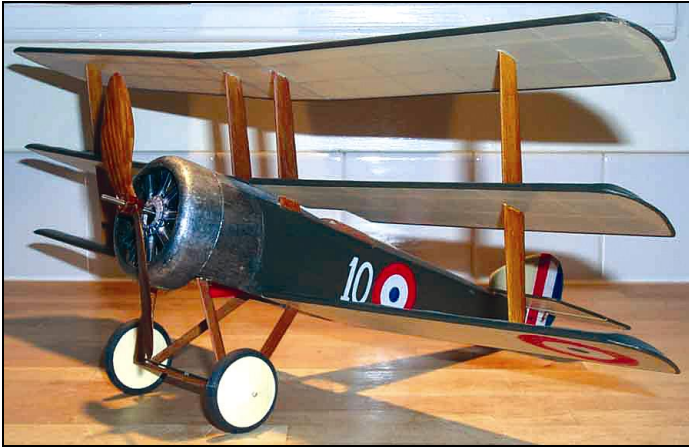
Designed by M.K. Bengtson
Prototype by Dave Mitchell

Manufactured and Distributed by:

Bengtson Company
e-mail: sales@aerodromerc.com
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Sopwith Triplane 1/16th Scale

Thank you for purchasing the 1/16th Scale Sopwith Triplane model for electric flight.



THE MODEL

A semi scale adaptation of the 1/16th Scale Sopwith Triplane, this model is designed to be easy to build and exciting to fly.

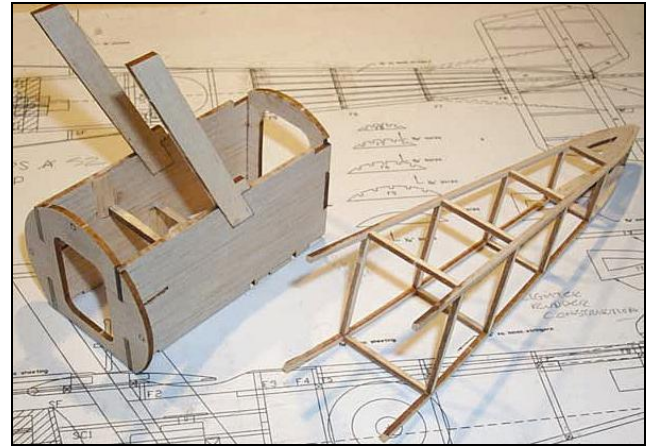
Specifications

More than 200 laser cut parts

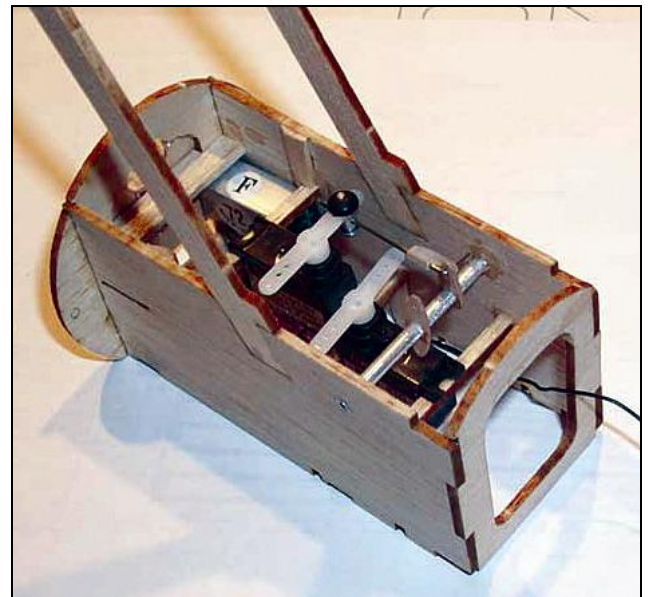
Scale:	1/16th
Weight:	~6 oz
Power System:	GWS IPS A
Prop:	7x3
Channels:	R/E/T
Wheels:	Balsa with Neoprene foam tires
Wingspan:	~20"
Airfoil Type:	Flat bottomed
Wing Area:	137 sq in
Cowl:	Built up balsa
Decals:	Available on the website
Designer:	M.K. Bengtson
Prototype Builder:	Dave Mitchell

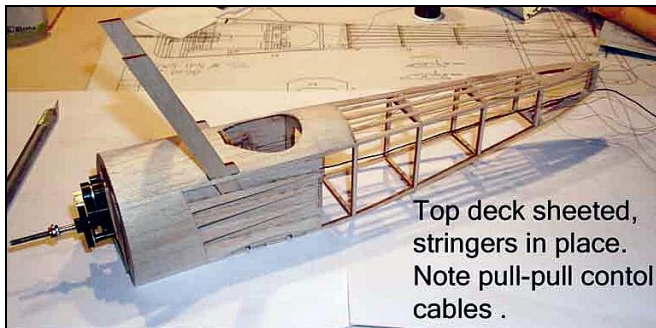
The following build information is from posted comments by prototype builder Dave Mitchell

Dave Mitchell here, erstwhile secretary for the D/C Maxcuters. I recently started a prototype build of an Aerodrome R/C Sopwith Triplane, 19.8" WS, micro r/c. Supplied to me by Air Midi Micros. A neat little beastie--photos as we go along.

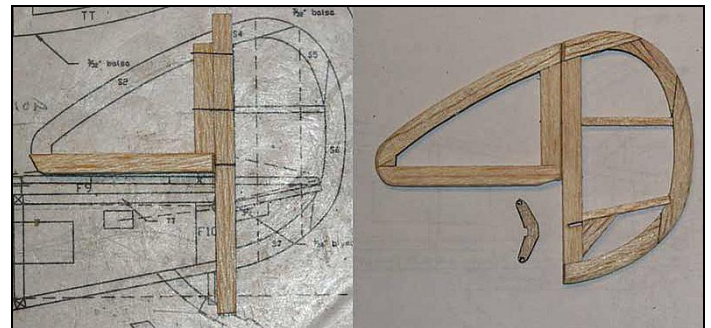


The plan calls for an IPS A, but the prop diameter is limited to 7", so I suggested an IPS 2 instead---look close, and you will see the notation on the plan! I'll be using all stock micro GWS gear as per Air Midi's request, as this is what they sell----so no break-the-bank-in-the-pursuit-of-super lightweight-happiness here. R-E-T. I'm hoping to bring it in at 1g/sq.in, which would peg it at 137 g, so yeah---around 5 oz. That might be optimistic, but we'll see. Using all kit wood, and for the most part following plans except for a few minor mods. It will definitely be an outdoor flyer.

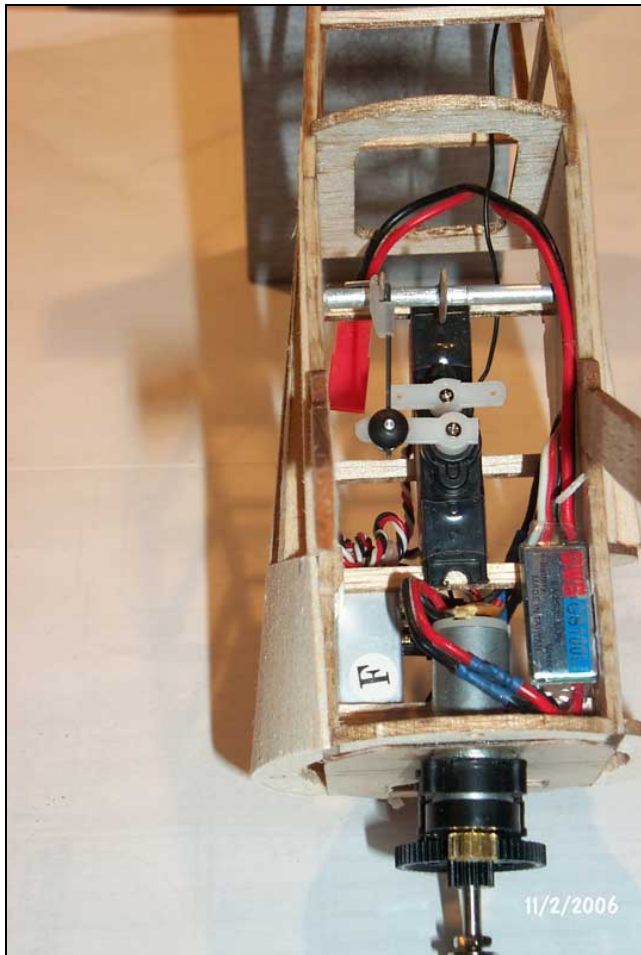




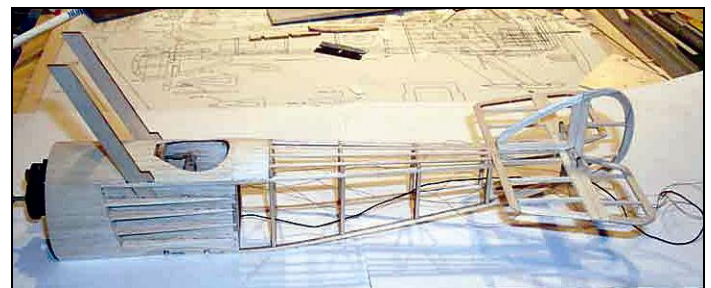
Top deck sheathed, stringers in place. Note pull-pull control cables .



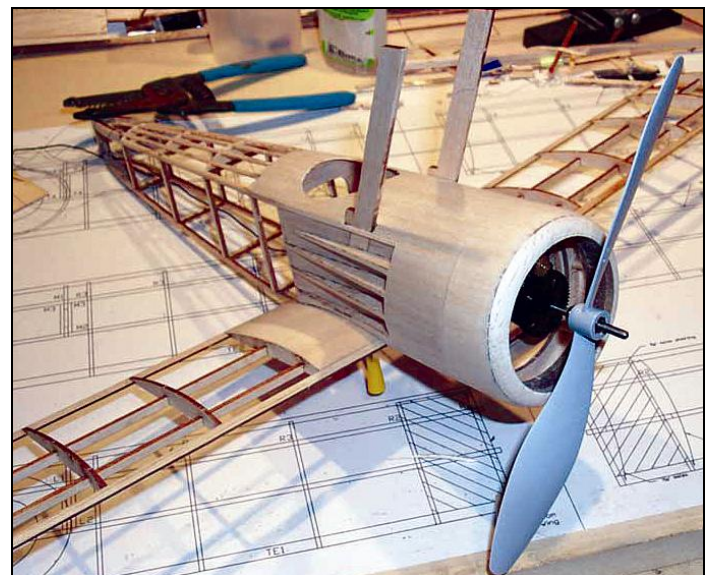
Starting to look Sopwithish at this stage. Time to start in on all those wings....



I tried something new (for me) for hinging the tailfeathers, illustrated here. The fin and rudder posts are laminated, with a few strips of Kevlar thread between the laminations to serve as hinges. Works well--be sure to pre-bevel the edges of the posts to allow movement.



Here she is with the bottom wing pinned in place....



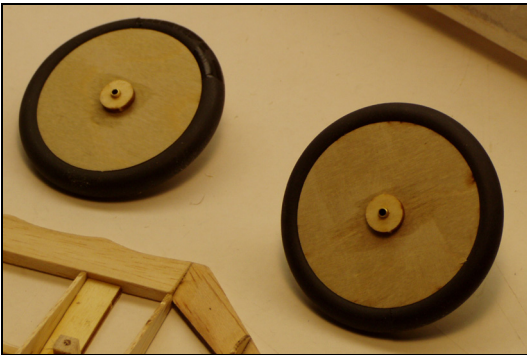
WHEELS

Gluing the 1/16" balsa sides on the laminated 1/16" balsa core makes the basis for the wheels. Use the brass hub for alignment. Epoxy the hubs in place and add a sufficient amount of epoxy around the base of the hub to reinforce the connection of the hub to the ply. Plywood reinforcing hubs are provided that are to slip over the brass tubing as shown. Next, CA glue the 1/4" Diameter neoprene cording together to form a "tire". Use thin CA sparingly as the CA bonds very aggressively to the

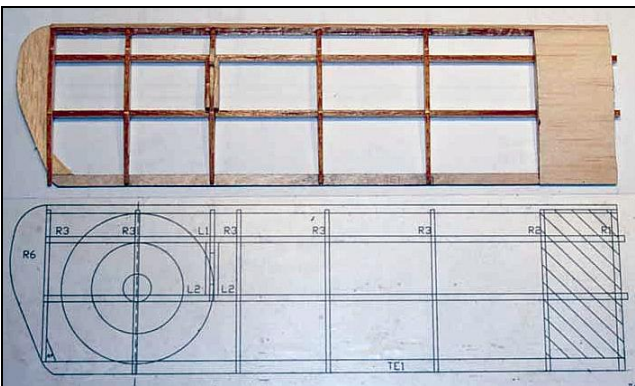
rubber. Press the CA wetted ends together for an instant bond. The best way to align the ends is to glue them while they are in place on the wheel. Then attach the tires to the wheels and CA in place. A thin bead of CA around the rim makes for a secure tire.

Paper cones are cut out. Use a ball point pen to score each line on the back to make an impression of "spokes" It is helpful to do this operation on a paper tablet so that the pen makes a good crease. Fold the paper along the crease lines to exaggerate the raised lines. One of the sections forming a wedge is cut out. Make cuts to the center of the circle along a pair of the spokes. Close the paper cutout to form a cone and tape the joint inside the cone.

The inside cones may now be attached to the wheels. The outside cones may be attached at this point if wheel collars are to be used. Alternatively, after installing the wheels on the landing gear, a washer may be soldered to hold the wheel in place and then the cone is attached. This method makes a very nice scale appearance.



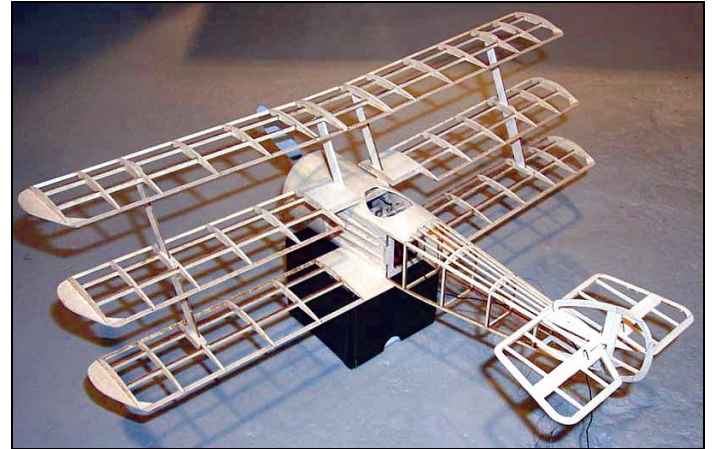
Here's a shot of one of the lower wing panel on the board. I made some modifications to the rib layout. Kit uses 1/32 ply trailing edge--interesting



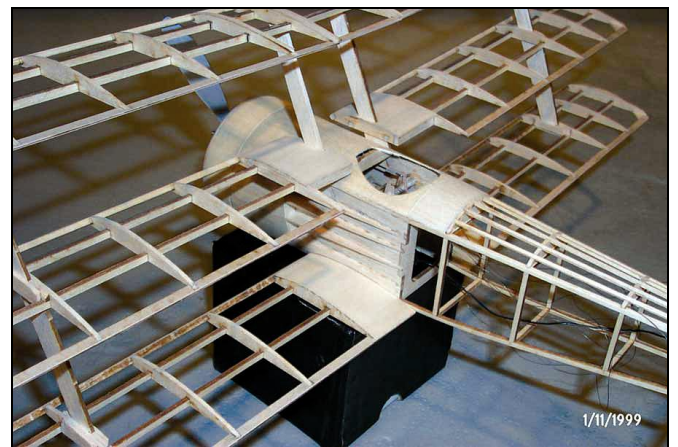
I'm shooting for 1g/sq.in. You'll have to do the math to translate that into oz/sq.ft, I'm too lazy!

I have several R/C aircraft flying in this range, all using pretty much the same GWS gear as I will have in the Sopwith, though all of them (a 28" Herr Stearman, a 24" Herr Pitts Special, and a 20" scratch built Fokker Dr1) use the IPS-A motor with 9-10" props.

Finished off all them wings and stuck it together for a photo.

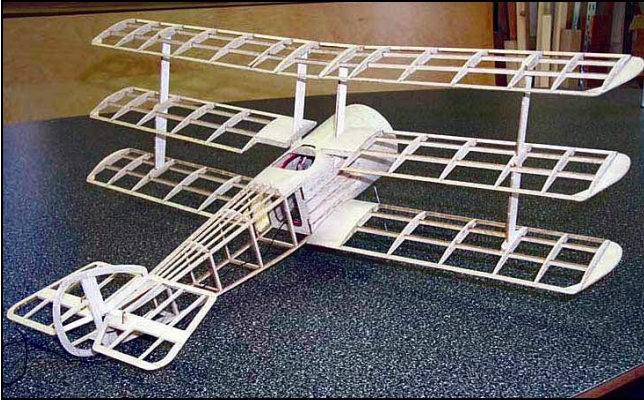


And a close up. Note the ply trailing edge of the wings. The interplane struts are designed to register the wing spacing correctly. Note there is a step on all four struts that the middle wing is resting on--kind of hard to see here, I'll try to post a photo that shows it better. Once the middle wing is glued into place, a second piece is glued to the trailing edge of each strut, above the middle wing, to finish out the strut profile.

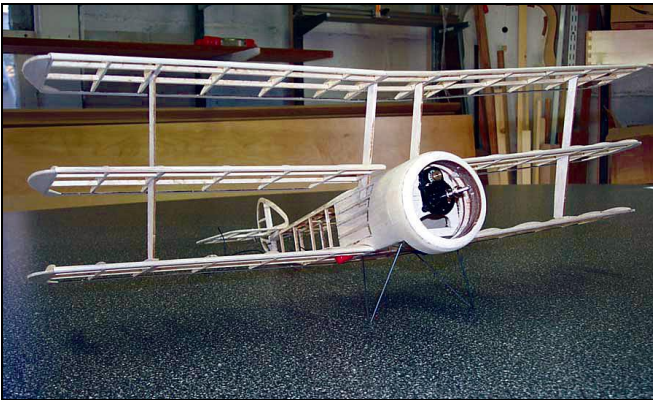


Wire landing gear in place now, and everything sanded up. I have decided to cover her with Litespan, which is a material I have mixed feelings about, but I think it will be good for this bird. It is tougher than tissue, which is a feature I may need given the plane's relatively high expected wing loading. So I spent the evening

brushing the framework with Balsaloc and getting all the little bits in place.

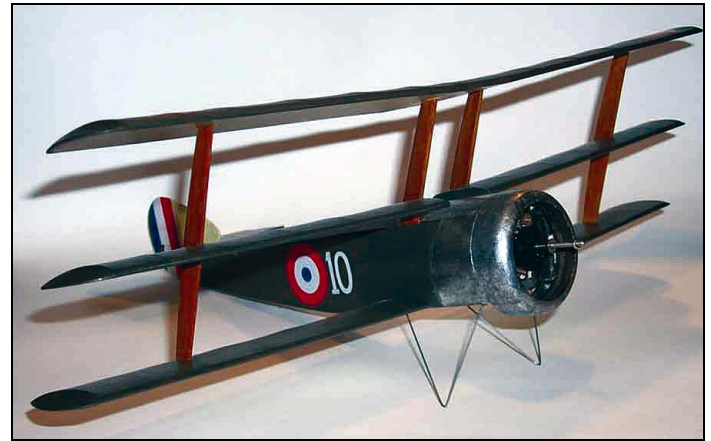


Another view. The battery will be located in bottom of the nose, between the LG. I had originally thought to use a 350mah 2S Lipoly, but I am thinking now a little smaller, to save a bit of weight. We will see how it balances....



Progress continues on the Sopwith....nearly done. I have chosen to finish her in French markings, aircraft #10 located in Dunkirk, 1917. Photo evidence suggests that this aircraft actually featured the large tailplane of early Tripes, but WTH.

I covered it with Litespan, as planned, but I wound up making tissue-and-Litespan insignias and markings, applied with Future floor polish, worked pretty well. The nose is covered with aluminium leaf.



Landing gear and wheels on.....and a paper Clerget in the nose. I plugged her in today, ran the motor up and checked all the control surfaces. A few more details and some rigging and she's ready to go!



Another view. What a great design the Sopwith Triplane was!



Another shot, in the morning sun. I just need a machine gun and a tailskid now, and to work up a hatch for the battery



Here is an excerpt from Dave's Maiden flight report:

"I got to fly the Sopwith Triplane today. Light but slightly gusty winds. First flights were unpleasantly hairy--twitchy and overcontrolled. I dialed back the servo throws and fed in a bit of exponential for the stab, and things got better, but it was still not ideal. Then I put in a larger (350mah) battery pack, which moved the CG up a bit--ahhh, now we're getting somewhere. I think I will need to drop in another 5g or so of weight in the nose. I had installed a GWS IPS-2 motor, with a GWS7060 prop. You could probably fall back to an IPS-A motor, with the same prop---I had way more power than I needed. Very sensitive to control input, especially stab. She's not for a beginning flyer, and she's too hot for indoors unless it's a big sports dome, but she sure looks neat in the air....I'm a happy camper "

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