

# SOPWITH STRUTTER

# 11/2

by Belair Kits

Belair Small Electric Scale  
Range

The 1 1/2 Strutter proved to be one of the multi-role workhorses of WW1. Not only a good observation aircraft but also a bomber, home defence fighter and a shipboard aircraft. That it was relatively easy to fly was an added bonus. The model is also an easy to fly floater.



## FUSELAGE

The fuselage is built as two, separate, basic box structures which are then joined over the plan. The front, sheet sided section forms one, while the rear, built up section is the other basic box. There are no curves in the longerons, just a single break, as they taper to the tail post so to do it any other way doesn't make sense. This way a straight, square fuselage is almost guaranteed.

Before starting the actual build bind and glue wires C and D to ply formers SM1 and SM2. Use the drawing on the plan to ensure accurate alignment of the wire parts. fit doublers D to the inside of parts FS.

Assemble parts F1 and BT, ensuring the assembly is square. Use this assembly and F5 to join the two sides (FS). Ensure all is square and glue and allow to dry. Glue SM1 and SM2 securely in place taking particular care to get them accurately positioned. If they aren't, nor will the centre section struts.

Glue part UC securely into parts D and to the fuselage sides.

Build the two rear frames over the drawing and join them (again working over the plan) using cross braces of 1/8 sq. balsa. Use hard balsa for the longerons. Note that parts TS form part of the side frames.

Still working over the plan, join the front and rear boxes and trim the longerons flush with the sides FS.

Add the remaining formers, any balsa fill areas, the sheet balsa deckings and the stringers, including SS1 and SS2. It may be wise to wait until you have the lower wing panels to ensure that the laminated parts WS fit accurately against them. Trim and sand parts Ws to follow both the line of the side sheeting and the line the covering will take over them.

Bind in place the u/c legs A and B, solder them to the axle and glue the bindings.

Assemble the cowl by wrapping 1/32 ply around formers C2 and gluing in place the laminated parts C1. Sand to shape.

If you want to make the cowl removable for motor access I suggest locating pegs and rare earth magnets.

## TAIL SURFACES

These are simply built over the plan using the laser cut parts and strip wood of the sizes shown. Allow to dry, drill and groove the elevators for the wire joiner and sand overall, rounding off the edges. Epoxy the joiner into the elevators, ensuring they remain the correct distance apart and level with each other.

## WINGS

Assembly of both upper and lower wing panels is essentially the same and is pretty much self explanatory if you study the plans. Use very hard balsa (or bass) for the leading edges and use the dihedral angle guide (DHG) to set R1B and R1T at the correct angle for dihedral.

Parts CS should be shaped to follow the wing section and the top wing panels joined using dihedral brace DH.

## ASSEMBLY

I would suggest you cover and finish the individual components before assembling the model, but some people are able to cover a fully assembled model.

Begin by making up some thin brass P-clips to secure the top wing to the centre section struts and solder them onto the strut stubs. Now carefully mark plates SP with the positions of the small screws that will retain the wing. Drill these hole (pilot holes only) and screw the wing in place, ensuring it aligns correctly.

Trim the covering from where the lower wings butt against the fuselage, install the locating dowels and glue the lower wings in place using 30 minute epoxy. This allows time to fit the interplane struts which will set the dihedral of the lower wing panels.. Check that the wings align correctly and that the lower panels fit snugly against the fuselage sides before allowing the glue to set.

The locating dowels are not load bearing, they simply ensure that both lower wings go on at the correct incidence angle.

Now glue in place the ready hinged tail surfaces, once again checking for accurate alignment.

Make up and fit the wheels and glue in place the tail skid.

Whether you use pushrods or lightweight snakes for the elevator linkages is entirely a matter of personal preference. Arrangements on the plan are for closed loop controls for both elevator and rudder. Much the lightest form of linkage.

Make up the 1/32 ply access hatch and retain it in your favourite fashion.

How much, or how little detail you add is again up to you. However, I would suggest at least pilot, observer and guns. That said, versions of this model have been built, and successfully flown, with far more detail than that. Just don't make it too heavy.

## FLYING

As intimated, the model is not difficult to fly, but it is not a trainer by any means.

Ensure the model balances slightly nose down (very slightly) when supported at the point indicated on the plan.

A 2S battery pack is more than enough for this model, so don't be tempted to try more cells. All you will achieve is to make the model heavier and more difficult to control. It may be a fighter, but it isn't supposed to fly at the speed of an F-16.

When taking off, don't be tempted to rush the model into the air. Deliberately hold it on the ground until plenty of speed has built up and then, once you stop holding it down, it should lift off of its' own accord.

Loops, lazy rolls and stall-turns are all well within the scope of this model, but once airborne beware the Hun in the sun.

## Bill of Materials

2 lengths of music wire 14 swg

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6 off 1/8 x 3/8 basswood spars

1 off 1/16" x 4" med balsa - sheeting and outlines of fin

1 off 1/8" x 4 med sheet for tailplane outlines

1 off 1/8" sq med balsa

6 off 1/8" x 3/16" hard balsa - leading edges

6 off 1/8" sq med/hard balsa

4 off 1/16" x 1/8" hard balsa - stringers

small amount of block for scale details and cowl area

6 inch length of 1/8 dia ramin dowel



*Designed by Peter Rake - Parts Set by Belair Kits*



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