

Nieuport 11



Belair Small Electric Scale Range

A fine flying aircraft that was popular with pilots, the Nieuport 11 'Bebe' (Baby) was used by several nations. Although only lightly armed, usually with an over wing Lewis gun, it was one of the types largely responsible for countering the 'Fokker Scourge'.

MATERIALS

Wood

1/8x3/16 balsa x 12"	4 off
leading edges	
3/32x1/4 balsa x 12"	2 off
top wing spars	
3/32x3/16 balsa x 18"	4 off
bot. wing spars/ tailplane	

3/32 sq. balsa x 18"	5 off	fuselage frame
1/16x3/32 balsa x 18"	1 off	tail ribs
1/32x4" balsa	13" off	fuselage decking
1/8 dowel x10"	2 off	locating dowels/pushrods

Wire

22 swg x 12"	1 off	pushrods
20 swg x 8"	1 off	tail skid/elevator joiner
18 swg x 12"	2 off	undercarriage

INSTRUCTIONS & GENERAL NOTES

Please note that the fuselage is built in two sections that are joined when both are at 'basic box' stage. Since there is nothing complicated about either section this is a relatively simple task that assists with ensuring a straight, square fuselage. Since alignment of both wings and tail surfaces depends on a straight, square fuselage it's worth spending a little time to get it right.

The wings are self aligning, with the centre section struts setting the incidence of the top wing and the locating dowels performing a similar task for the bottom wings. The interplane struts determine the lower wings' dihedral.

The plans show a 15 gram outrunner motor and 2S battery pack. You could use other motors but avoid having an excess of power or you simply make the model more difficult to fly. A set-up that provides around 40 Watts of power is ample for scale-like flight.

Also shown on the plan is the arrangement of parts for pushrod operation of the rudder and elevators, but this could be replaced with closed loop (pull-pull) controls. The only point you need to be aware of is that the top elevator cable passes through the tailplane.

TOP WINGS

Begin the wings by pinning down (over the protected plan) the leading edges, spars and parts TE1, TE2, CS and WT1, gluing as required.

Glue in all wing ribs except R1, ensuring that they are at 90 degrees to the building board. Glue in the pieces of scrap balsa that form the strut sockets. Allow to dry. Do not fit R1, DH or DHB at this point. Once dry, remove from board, pack up at the tip and glue in R1 using a square to ensure it is at the correct angle. Sand the leading edges, spars, trailing edges and parts CS flush with the angle of R1.

Glue together parts DH and DHB and shape DH to match DHB. Join the wing panels at the correct dihedral and once dry glue in the DH/DHB assembly ensuring it is securely glued to the spars.

Trim the leading edges and parts TE to follow the wing section shown, round off the tips, blending into leading and trailing edges and sand overall.

BOTTOM WINGS

Here you need to glue the scrap pieces to R3B and shape them to follow the wing section before building the wing panels.

Pin down, over the plan the leading edges, spars and parts TE3 and WT2, gluing as required. Glue in all the ribs except R1B and allow to dry. Pack up by the required amount for dihedral before gluing in R1B. Trim and sand as for the upper panels and then fit the short locating dowels. These are not load bearing but simply serve to ensure both lower wings go onto the fuselage at the correct incidence.

TAIL SURFACES

Begin the rudder by making a card former matching the inside dimensions of the outline. Either wax, or apply tape to the edges to prevent the laminations sticking.

Thoroughly soak the two softest pieces of 1/16x3/32 balsa. Once good and flexible, glue them together using white glue and tape them securely around your card former. By taping one end, and then pulling the strips around the former you will reduce the risk of kinks. Ensure everything is straight and flat before leaving to dry overnight.

Pin the outline over the drawing. Glue in part T1 and the 1/16x3/32 balsa 'ribs'. Allow to dry.
Remove from the board and sand overall, rounding off the edges. Fit the horn after covering.
Build the tailplane and elevators over the plan using parts T2, T3, T4, T5, T6, 3/32x3/16 strip and 1/16x3/32 strip wood. Allow to dry.
Remove from board sand smooth and round off the edges. Bend up the wire joiner, drill holes in the elevators, cut a groove for the joiner to sit into and securely glue the joiner in place. Ensure that both elevators are level. Once again, fit horns after covering.

FUSELAGE

Because the rear section of the fuselage is marginally more complicated to get straight and square we'll start with that. Build two identical side frames over the plan and allow them to dry. Glue in the pushrod exit plates ensuring that you get them in their correct side and flush with the outer face. Cut a set of cross braces to match the formers.
Now pin down the front of each side frame over the top view and pack up under the rear ends so that both frames are aligned with the drawing and square with each other. Glue the tail together and fit the cross braces, formers and part TS. Allow to dry, remove from the board and glue in place the 1/16 balsa fill flush with the outer face of the lower longerons.

On the sheet fuselage sides mark the positions of all formers and fit parts UC1 and UC2 to the inside of each side. Fit parts CSS1 ensuring they are accurately aligned with the sides and the drawing. Glue F1 and F3 to one side and attach the other side. Fit former F2, check for square and allow to dry. Securely glue in place UC1A and UC2A. Taper one part X as shown, laminate to the remaining parts and glue M to it. Glue the assembly to F1.

Paying attention to the drawing assemble parts CSS2 to form the inverted V rear c/s strut and glue it securely to the fuselage and F2.

Join the front and rear frames taking care to keep everything straight and square. Once dry fit the forward 1/16 balsa fill piece. Fit the 1/32 balsa decking and sand overall, sanding the longerons flush with the sheet sides where front and rear sections join.

COWL

Glue the strip of 1/32 ply around formers C1 and C2 and allow to dry. Laminate parts N and glue to the cowl. Spot glue the assembly to the covered fuselage and glue the laminated parts F to the cowl only. Remove from fuselage and trim and sand to shape, sanding smooth overall. The cowl may be glued back in place after sealing and painting (or covering) after your motor is fitted.

ASSEMBLY

Begin assembly by making up the wire parts and gluing them securely into their locations, then do any binding and soldering required.

Glue parts TS2 each side of TS1 and sand them to a streamline section. Bind and glue the wire skid in place and glue the assembly into TS.

Carefully glue the top wing onto the centre section struts, ensuring it is properly seated with the struts as far into their sockets as they will go. This will ensure that the wing goes on at the correct incidence.. Now glue the lower wing panels in place and set their dihedral by gluing in the interplane struts. Once again, ensure the struts are seated fully home in their sockets. Use this assembly as a guide to alignment while fitting the tail surfaces.

The model doesn't require working rigging, but it will add a lot of strength for more spirited flying and add realism to the model.

Make up the pushrods as shown on the plan and install the servos in the position shown, feeding the pushrods through the exit plates in the process. Centre the servos, slip the horns onto the pushrods and glue them into the control surfaces. Fit your ESC and receiver to the fuselage sides, making sure you still have room for battery access.

The ply hatch may either be hinged with tape and secured with small magnets, or simply held by magnets. This will be simplified by soaking and pre curving the hatch before installation.

FLYING SET-UP

Set up the model with as much rudder throw as you can get (but don't expect to need it all for most of the flight) and around 3/8" each way on the elevators. You definitely won't need more than that except during combat. Any more will just make the model overly sensitive during trimming flights. Loops, stall turns and a very interesting flick roll are all possible with this three channel model.

Balance the model to hang just a hint nose low when supported at the point shown. Don't even think of flying it if it's in the least tail heavy. The model will probably survive, but you won't enjoy the experience one bit. This is a 'safe' balance point and can be fine tuned once trimming flights are completed.

With power train shown you will have ample power for take-off, and that is the safest course with initial flights since it will show up any need for elevator adjustment before you find the model doing things you never intended. A frantic climb is acceptable, if a little unnerving, but a dive into the ground tends to be terminal.

Designed by Peter Rake - Parts Set by Belair Kits



www.belairkits.com Tel: +44 (0)1953 885 279