

# Nieuport 11 Bebe

## R/C Scale Model Instructions



### *CONTACT INFORMATION*

The Nieuport 11 Bebe was designed by  
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Manufactured and Distributed by:

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## Nieuport 11 Bebe 49"

Thank you for purchasing the Nieuport 11 Bebe model plans for electric flight.

Very few modellers can be unfamiliar with the Nieuport range of vee strutted fighter aircraft of WW1, and the Nieuport 11 is the one that got them all started. Although originally designed as a pre war racing plane, she was developed into one of the several types that brought about the end of the 'Fokker Scourge', a very dark era for allied airmen. Built both in France, and under licence in Italy, and used by most of the allied nations armed forces, there are many colour schemes available to us as modellers, and many minor variations in detail to enable each model to be slightly different. You could even build her as the more powerful N16, as used by the Belgian forces, although, because of the bigger engine, they did have the habit of diving headlong if the engine cut.

### THE MODEL

As with other models in this range, the N11 is not intended as an exact scale model. It has been simplified slightly, so that while it still conveys the 'feel' of the full size aircraft, it remains easy to build and pleasant to fly.

Designed to use a relatively inexpensive power set up, with mini servos to keep the weight down, she is an ideal entry into slightly larger electric powered scale models, without involving huge expense for the builder.

### SPECIFICATIONS

#### More than 150 laser cut parts

<b>Scale:</b>	1/6
<b>Channels:</b>	R/E/A/T
<b>Wingspan:</b>	49"
<b>Wing Area:</b>	570 sq in
<b>Weight:</b>	61 oz
<b>Power System:</b>	Speed 600BB Olympus belt drive; 2.3:1
<b>Prop:</b>	12x8
<b>Wheels:</b>	Balsa & plywood, Neoprene foam tires
<b>Airfoil Type:</b>	Flat bottomed
<b>Cowl:</b>	Built up balsa and plywood
<b>Spinner:</b>	N/A
<b>Designer:</b>	Peter Rake/M.K. Bengtson

### WINGS

To ease the builder into this model, the bottom wings are where we start construction. They are quite easy to build,

and won't take up too much space once completed. Make up the entire strut and wing plates from the aluminium strip supplied so that they are readily to hand when you need them. Roughen all gluing areas with coarse sand paper to provide a key.

### BOTTOM WING

Begin the actual construction by pinning down, over the plan, the lower trailing edge strip, the wingtip, the spar and the leading edge, gluing as required. Make up the rib doubler by notching it to accept the strut plate and EPOXY the strut rib, strut plate and doubler together as indicated on the plan. Now, using the rib angle gauge to set up the root rib, glue all the wing ribs in place. With the exception of the root rib, all ribs should be vertical to the building board. Glue in place the 1/8" balsa tip gusset, and the 1/8" ply mounting plates and allow to dry thoroughly before proceeding.

Remove the wing from the board and trim the rear of the lower trailing edge to follow the line of the ribs, before pinning the wing back over the plan. Add the upper trailing edge strip and the 1/16"x3/16" cap strips, and once again allow to dry. Repeat the process for the opposite wing panel, and then trim and sand the wings to shape. Note that the wing tip is trimmed down to mate accurately with the trailing edge. The locating dowels may be added now, or left until after the wing panels are covered.

### TOP WING

Please note that the aileron is built integral with the top wing, only being separated after the panels have been trimmed and sanded to shape.

As with the bottom wings, pin down the leading edge, lower trailing edge strip, bottom spars and wing tip pieces, gluing as required. Also pin down and glue the centre section cut out laminations. Laminate up, and trim to shape the balsa and ply wing joiner brace and glue it securely against the lower main spar. Glue all the main ribs in place; ensuring that they are upright, but DO NOT add the aileron ribs at this stage. Glue the top spars in position, followed by the vertical grain spar web pieces and the 1/8" balsa false trailing edge. Add the tip gusset, hatch blocks, ply mounting plates, doubler and wing bolt support block, and then SPOT GLUE the aileron leading edge to the false trailing edge, while gluing it securely to the aileron tip. Now, glue in place the aileron ribs and horn support piece, and allow to dry completely.

Remove the wing from the board, and trim the trailing edge strip, the false trailing edge, the aileron leading edge, wing cut out block and the wing bolt block to follow the line of ribs, before pinning back down again and adding the upper trailing edge and cap strips. Allow to dry thoroughly before trimming and sanding to shape. DO NOT add the strut plates yet!!!!

Position the built wing panel accurately against the drawing for the opposite wing panel, pin it securely in place, and build the other wing onto it, following the same procedure as before. Once this wing has also been trimmed and sanded, the strut plates and doublers should be firmly glued to the liteply strut ribs. Just remember that these ones go under the wing. Make up the servo hatches, provide somewhere for the servo leads to run through the wing and carefully and accurately drill the holes for the self tapping screws and nylon bolt that will retain the top wing. Now you can cut the ailerons from the rest of the wing, shape the leading edge as shown, and prepare them for hinging. Your wings are now ready to cover, have the ailerons hinged and the control horns fitted. Fit the servos, and with the ailerons held level with the wings, make up the pushrods. Use a z bend in the threaded rod at the servo output arm, and a clevis at the control horn end.

### SERVO LEADS

I have found it helpful to use socket-to-socket extension Y leads in the wings of this type of model, and a plug-to-plug extension lead from the receiver. By mounting the Y lead socket, into which the extension lead will plug, just proud of the lower centre section (top wing), it is possible to run the extension lead up one of the struts, disguised as a fuel line or similar, and avoid the need for a hatch in the centre section. No doubt you'll use whatever system you're used to, but this one is worth a try. Even if there shouldn't actually be a fuel line, it will still look better than a servo lead. The servos should be fixed to the hatches with servo tape, or screwed to hardwood blocks glued to the hatches. The output arm should extend through the hatch and there should be no binding in operation.

### TAIL SURFACES

These are simply built over the plan, from the pre cut parts and strip balsa. Sand overall and round off all the edges. Bend up the wire elevator joiner, and carefully drill the holes into which the joiner will fit. Cut a groove in each elevator, to enable the joiner to sit flush, and epoxy

the elevators onto the joiner. Make sure that they match the width of the tailplane, and that they are both level with each other. Glue the ply horns in place after covering.

### FUSELAGE

The fuselage of this model is built as two separate sections, a front and a rear, which are then joined, since this is the surest way of easily producing a straight structure. An absolutely vital ingredient of this type of model.

Begin assembly by building the two rear frames over the plan. Having built one side frame, allow it to dry before removing from the board, turning it over and building the second frame on top of the first. Use some clear polythene sheet between the two frames to prevent them sticking to each other, and ensure that both frames are identical. Now, once again working over the plan, join the two frames using the cross braces, and the piece of 3/16" balsa that the tail skid fits into. Make every effort to ensure that the structure is not only straight, but also totally square. Allow this assembly to dry completely before adding the 1/16" balsa fill to the underside, and the two 1/16" pushrod exit pieces. Even if you intend to use closed loop type control links, still fit the exit parts since they add a lot of strength for very little weight. Set this assembly to one side, and move on to the front section of the fuselage.

Start by joining the 3/16" balsa parts that make up the two basic side sheets and allow them to dry. Making sure that the structure remains perfectly straight and square, join the side sheet parts using formers F1A, F1B, F2 and the 3/16" ply motor plate. Take especial care to get the motor plate the right way up. Left side thrust built into your model will not help its flying qualities in the least. Allow the glue to dry, and then add the parts F3 and F4, complete with the triangular reinforcing blocks. Bend up and drill the dural c/s struts, drill the strut plates, and bolt the struts securely in place. Lock off all the nuts with a spot of CA to ensure they don't come loose again at a later date. Now, working over the plan to aid accurate alignment, join the front and rear fuselage halves.

So, now that you have something resembling a fuselage, add the 3/32" lower fill pieces, formers D1 - D7 and the 1/8"x1/4" rear piece. Follow this by the 1/16" sheet decking and the stringers. The stringers butt against D3 and the 1/8"x1/4" piece, the latter being shaped to follow the lines of the stringers. Sand the structure overall, before

drilling the holes for the u/c bindings and the lower wing retaining screws. It will result in a neater job if the bottom of the fuselage is covered before the u/c legs are bound in place and bound and soldered to the axle. Although no u/c fairings are shown, scrap balsa may be used to fair the legs.

### **COWL**

Start by laminating up the C1 parts, and while this dries glue the 1/32" ply around C2 and C3. Make sure that C2 and C3 align correctly or you'll end up with a very lopsided cowl. Glue the laminated section onto the main cowl and then trim and sand to shape. Now, tack glue the cowl accurately to the fuselage, and glue the fairing blocks to the cowl. Note that they are ONLY glued to the COWL, not to the fuselage. Remove the cowl and trim and sand the cowl fairings to shape. Thoroughly prime and seal the cowl ready for painting. The cowl may either be glued or screwed to the finished model.

### **FINISHING**

Although we all have our own preferred covering method, do ensure that you don't add too much weight at this stage. The new matt covering from Solarfilm would be a good compromise between weight and durability, but 'Tex' coverings are on the heavy side. Modelling enamels are a good finishing medium, but try to limit their use to avoid adding weight.

Since Williams Brothers supply excellent 1/6 scale model guns and pilot figures, even wheels if you don't mind the weight, obtaining a good level of scale detail is easy. However, always bear in mind that a little detail can soon add a lot of weight. Weight is the key to success with electric powered models - the less weight, the more likely you are to succeed.

### **WHEEL ASSEMBLY**

#### **Balsa Core**

Laminate the 1/8" thick balsa core to the 1/4" thick balsa core using CA.

#### **BALSA PLY SANDWICH**

Gluing the ply sides on the 3/8" balsa core makes the basis for the wheels. Use the brass hub for alignment. Epoxy the hubs in place and add the 1/8" plywood reinforcing collar to both sides. Allow to cure.

### **TIRES**

Next, CA glue the 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.

### **ATTACH TIRES**

Then attach the tires to the wheels and CA in place. A thin bead of CA around the rim makes for a secure tire.

### **MAKE PAPER CARD CONES**

Paper cones are cut out and a wedge is cut out by making cuts to the centre along one wedge of the spokes. 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. Close the paper cut outs to form cones and tape the joint inside the cone.

### **FIT CONES TO WHEELS**

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.

### **ASSEMBLY**

With the top wing inverted, carefully, and accurately, position the fuselage over it. Mark the positions of the wing mounting screws and bolt, and drill the appropriate holes. Carefully measure the lower wing screw positions, drill them and fit the wings to the fuselage. Make up the interplane struts over the full size drawing, and bolt them to the relevant strut plates. This will pull the dihedral into the bottom wing, but make sure that you haven't also pulled any twist into the wings. Now use this assembly as a guide to alignment while gluing the tailplane firmly in place. Ensure that the all moving rudder is accurately aligned, but also that the hinges are both glued and pinned for security. The last thing you need is to lose your rudder mid flight. Make up the radio hatch, using your favourite retaining method, complete the radio installation and stand back and admire your handiwork. You are now the proud owner of a miniature Nieuport 11 'Bebe'.

## **FLYING**

In common with all model aircraft, and short nosed biplanes in particular, ensure that she balances just SLIGHTLY nose down when supported at the point shown. There is no surer way of destroying your model than to attempt to fly her in a tail-heavy state.

Open the throttle gradually, holding in some up elevator until she is moving, and allow her to pick up speed. Ease off the elevator as her speed increases, and be ready to correct any swing with rudder. Once she has attained speed, gradually feed in some more up elevator until she lifts off. Allow her to climb away steadily, and don't attempt to rush things. Once you have made some height and trimmed her out, she's all yours to have fun with. Loops, stall turns and even a not very crisp roll are all within her capabilities, so just enjoy her. However, at all times - BEWARE THE HUN IN THE SUN.

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