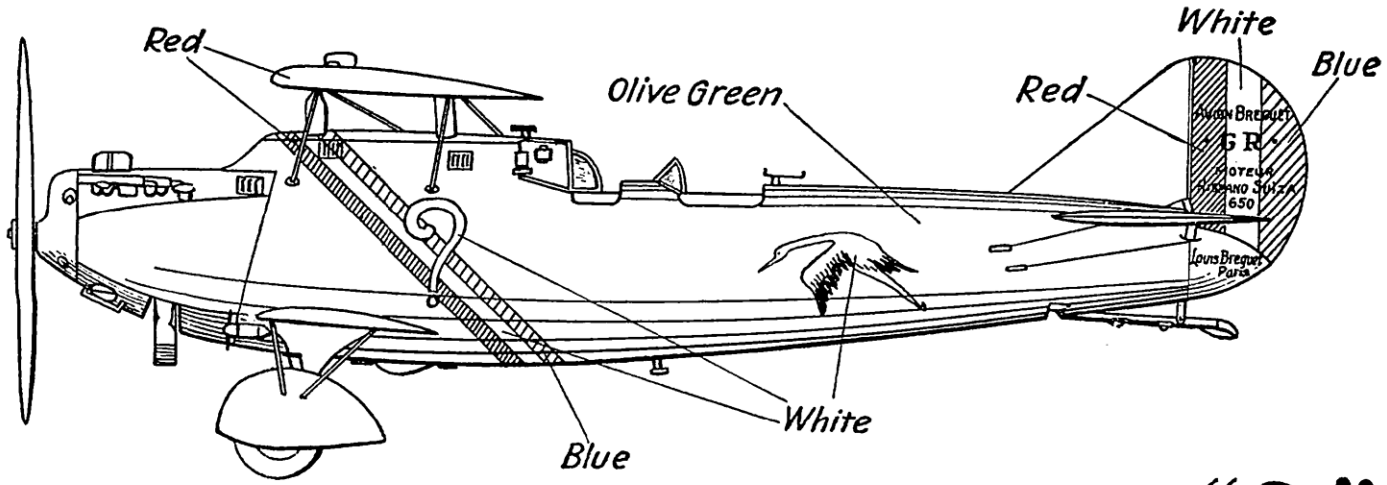

How to Build

the Trans-Atlantic "?"

A Flying Model of Costes' Famous Sesquiplane

By

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THIS model is a copy of the famous French plane, the first to make a Paris-New York flight. The *Question Mark* holds many other records besides the trans-Atlantic one and is truly a remarkable airplane.

This model, if constructed properly, resembles the original and has also many of the larger machine's good flying qualities.

Before starting construction, make sure all materials are at hand and read the directions carefully.

FUSELAGE

The fuselage is built up of formers of 1/16" sheet balsa and stringers of 1/32" bamboo. Formers F-1 to F-9, inclusive, are cut from the 1/16" x 3" x 12" sheet balsa. After this has been done, split up one of the pieces of bamboo into 1/32" strips and ambroid them to the top and sides of the fuselage, as shown in the main drawing.

The nose is shaped from the 1/2" x 1-5/8" x 1-3/8" piece of balsa with razor and sandpaper. The nose is fastened to the fuselage with dress snaps. The motor-stick of 1" x 1/4" x 12-1/4" spruce is ambroided into a slot 3/16" under the centre line. The bearing and rear hook are then ambroided on.

The cockpit former is cut out from the 1/32" x 1/2" x 8" sheet balsa and is ambroided on to formers F-7 and F-5. The windshields are cut from celluloid and are ambroided on in the position shown in the drawing. The radiator is cut from the 1/4" x 3/4" x 1-3/8" piece of balsa and is ambroided to former F-2. The tail skid and brace are of 1/16" bamboo. The centre strut carrier is a piece of 1/8" x 1/4" 2-3/4" balsa ambroided between formers F-3 and F-5.

TAIL SURFACES

The tail surfaces are of the immovable type. The outlines are of 1/16" bamboo and the ribs, shaped as shown by the dotted lines, are of 1/16" balsa. The lower part of the rudder is faired in line with the fuselage by means of fine bamboo strips. The rudder spar is shaped as shown by former F-10 of 1/16" balsa. The elevator spar is 1/8" square balsa.

UPPER WING

The upper wing is made in one piece. First cut out the twelve full-size ribs and the two

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Necessary Materials

3 pieces	1/16" x 3" x 12"	balsa	former, ribs
1 piece	1/32" x 1/2" x 8"	balsa	cockpit former
2 pieces	5/8" x 1" x 2"	balsa	pants
1 piece	3/16" x 1" 2-1/2"	balsa	cover plates
1 piece	1/2" x 1-5/8" x 1-3/8"	balsa	nose block
1 piece	1/4" x 3/4" 1-3/8"	balsa	radiator
1 piece	3/16" x 3/16" x 24"	balsa	leading edge
1 piece	1/8" x 1/4" x 36"	balsa	spar and strut
5 pieces	1/8" x 1/8" x 12"	balsa	spars
1 piece	1/8" x 1/4" x 12-1/4"	spruce	motor stick
1 piece	2-1/2" x 2-1/2"	sheet celluloid	wind shields
1 piece	9/16" x 1-3/16" x 8"	spruce	propeller
4 pieces		split bamboo	stringers, etc.
1 piece	1-1/4"	celluloid wheels	landing gear
1		thrust bearing	
2		washers	
1 foot	No. 14	music wire	
1 package		model making pins	
3 sheets		Japanese tissue	

1/4 ounce bottle banana oil
1/2 ounce can colorless glue
Artists oil color
10 feet 1/8" flat rubber

See Plans on Pages 10 to 14

"?" Model Plans

(*Continued from page* 9)

tip ribs, which are made of the 1/16" sheet balsa. Make the necessary spar cuts. The leading edge is sandpapered to the proper shape from a piece of 3/16" x 3/16" x 23-5/8" balsa. The trailing edge and wing tip are of 1/32" square bamboo. The tip is carefully bent around a candle flame. The spar is of 1/8" x 1/4" x 24-1/4" balsa.

The lower wing consists of two sections, each 71-1/16" long. Be sure to make two opposite wings, i.e., one right and one left. They are made in the same manner as the upper wing.

The center section "N" struts are made of streamlined balsa as shown in the drawing, as are also the outer bay struts.

The wheels of the model are streamlined by means of "pants". Carefully carve and sandpaper them from the 5/8 x 1" x 2" blocks. The two covers are made from the 3/16 x 1" x 2-1/2" piece of balsa. The wheels are placed into the slots and the cover plate is ambroided on.

INSERT a plain pin through the streamline and through the hole in the wheel. Do not clip off the point of the pin. The spreader bar is of streamline 1" x 1/8" x 3-1/2" balsa. The landing gear struts are of 1/16" bamboo covered with tissue.

The propeller is carved from a white pine or spruce block, 9/16" x 8" x 1-3/16". After it is perfectly balanced, insert the shaft which is made of No. 14 music wire.

The motor stick is 1/8" x 1/4" x12-1/2" spruce with the fittings attached in the usual manner.

The motor consists of ten strands of 1/8" flat rubber of the best grade.

Cover the fuselage and wing surfaces with Japanese tissue.

First glue the stabilizer between formers F-8 and F-9, making sure it is level. Then attach the rudder to formers F-9 and F-8. The landing gear is attached next. The "V's" are glued to formers F-3 and F-4 directly under the projection to which the lower wings are fastened. The "pants" are then glued to the struts. The spreader bar is glued to the pins which project from the pants. With the nose block complete with propeller snapped to the first former, the plane is balanced.

The upper wing is attached with its leading edge one third ahead of the balancing point, by means of the center section struts to the strut carrier. The lower wings are then fastened to the projections on formers F-3, F-4 and F-5. There is no stagger and the lower wing is fastened with a slight angle of incidence. The struts are fastened to points marked on the wings.

The entire plane is first doped with banana oil, then colored red except for the part forward of former F-3, which is silver; or colored as shown in the drawing.