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Date: 7/22/2009 2:07:02 PM
Subject: 137 Sailplane Silking the Fuselage and Sub Rudder Installation

Comet Sailplane Project

I have been putting the second covering of orange silk on the fuselage for last two days working almost non-stop. Covering with silk for me is a slow and intense process. As such, it is important to take breaks between completing one panel and starting another in order to be able to last all day. I know most of you can apply silk equally well or better than I can, but for documentation purposes I took a number of pictures while covering the fuselage that I want you see.

Because the pylon sides were each covered with a single piece of orange silk, which included a part of the top of the fuselage on the sides, it was necessary to cover the top of the fuselage in three pieces. In the picture below, silk has been applied to the top of the fuselage aft of the pylon.



In this picture, the silk has been trimmed along the narrow longeron line and one coat of clear nitrate dope brushed on.



The 3/32" silk overlap seam just behind the pylon shows up as a darker orange as shown below.



This picture shows the 8" X 50" piece of orange silk draped on the fuselage in preparation for covering the left side.



In the picture below, the silk on the left side has been trimmed on the top and bottom along the narrow longeron lines and one coat of clear nitrate dope brushed on.



I took this picture during the trimming of silk along the narrow edge of the longeron. This is a most tedious effort in that you do want the razor blade to run off the longeron and cut into the open covered area. However, there must be some overlap to keep the bare wood from showing so there is very little room for error! If you look close, this results in not more than a 1/16" silk overlap running down the entire length of the fuselage's narrow longeron. When I started the trim cut with the razor blade, I never took a breath until I had reached the other end! Then I came back and brush Acetone over the stuck silk and carefully pull it away from the fuselage as shown below.



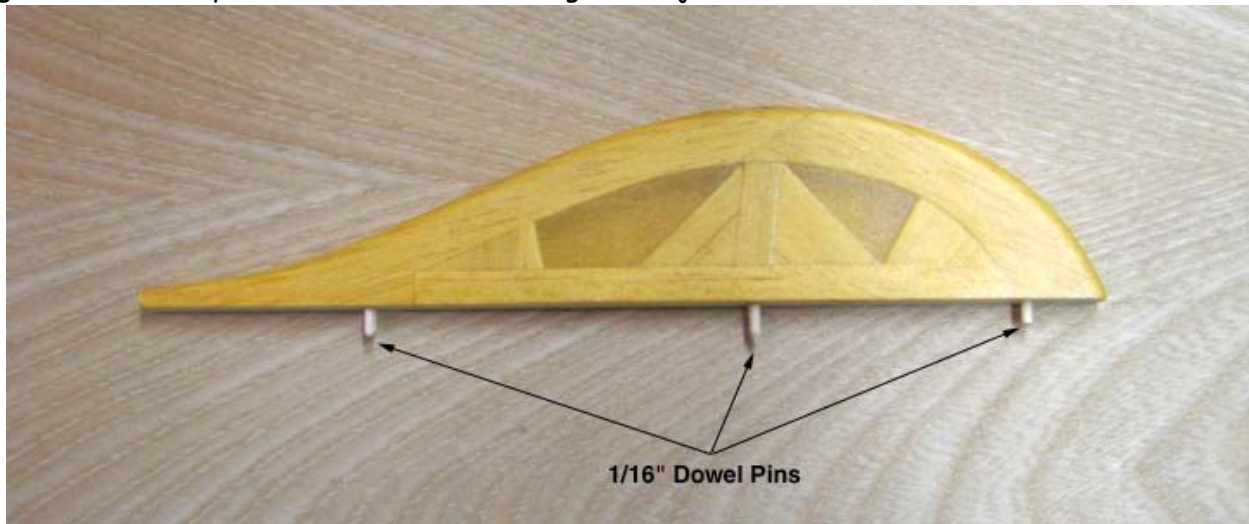
Once the fuselage covering was covered, the finished sub rudder shown below that was discussed back in Report No. 81 could be installed on the fuselage.



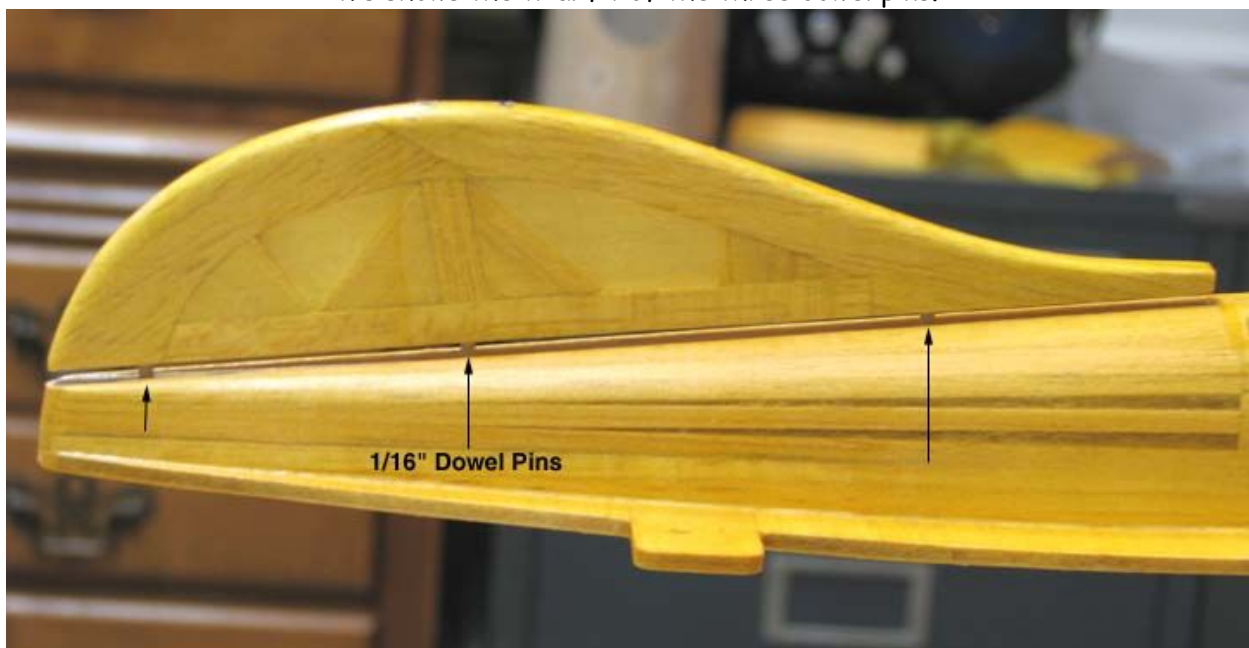
The slot at the back of the fuselage on the bottom shown below was made to received the sub rudder. Notice the three circular holes in the bottom of the slot.



Three 1/16" dowel pins were glued in the sub rudder's root chord to plug into the three holes in the fuselage's slot. These provide additional stiffening to the joint.



This shows the trial fit of the three dowel pins.



A card board square template was cut out and used to check the alignment of the sub rudder with the plane of the stab platform as shown below.



Next, a liberal amount of 15 minute epoxy was mixed up and applied to the root and bottom edges of the sub rudder. The dowel pins were placed in their corresponding holes in the fuselage and the sub rudder was pushed into the slot tightly. The excess epoxy was forced up along the sides of the sub rudder, which was then wiped clean using a Q-Tip dipped in alcohol. The alcohol of course has no effect on the clear doped silk. A

1/16" dowel was slipped into the removable tail skid receiver tube in the edge of the sub rudder and rubber bands were used to hold the sub rudder down and in place while the epoxy dried as shown below.



Once the epoxy had set up, the rubber bands were removed and the sub rudder had become an integral part of the fuselage as shown below.



I took this picture to show how little waste of orange silk there actually was.



This picture shows the completion of the double covered fuselage with the sub rudder bonded in place.



This is my favorite view showing the long slender lines of the Sailplane's fuselage. Notice the two covered hatch covers and cowl on the table in the background that has not yet been covered with orange silk (*I have the piece of orange silk cut out and set aside to cover the cowl with*). Before I cover the cowl, I am going to mix up either Z-POXY or perhaps clear Klass Kote epoxy and dope the complete interior of the cowl's wooden structure with epoxy to fuel proof it. Once this has been done, the cowl will then be covered in orange silk.



The forward ignition hatch cover and the aft radio hatch cover are shown in place on the bottom of the fuselage below.



At this point in the covering and doping of the Sailplane, my status is as follows:

COATS OF CLEAR NITRATE DOPE

Component	Wood	Polyspan	Silk
Stab	3	3	3
Sub Fins	3	3	3
Elevators	3	3	3
Fin	3	3	3
Rudder	3	3	3
Sub Rudder	3	3	3
Wing	3	3	1
Hatches	3	3	1
Fuselage	3	3	1
Cowl	3	3	

So my next step will be to mix up a large quantity of clear nitrate dope and apply two more coats to the wing, hatches, and fuselage. Then I will add a few drops of red and yellow Castin Craft dye shown below to tint the clear nitrate dope orange to bring out the rich orange color of the silk on the fuselage and give the fuselage three more coats of orange tinted dope. Similar orange and yellow dope dyeing will be done for the rudder, wing, and the stab.....Tandy



Directions:
 Puncture inner cap for drop dispensing.
 Add dye to resin drop by drop, until color suits you.
 With **Castin Craft Casting Resin**, add catalyst to resin after dye is mixed in.

Blending Chart:
 Red & Blue = Violet
 Blue & Yellow = Green
 Red & Yellow = Orange
 4 drops Orange & 1 drop Blue = Brown