

The Schriebe SF33 Motor Glider

Build Document #3

Project Phase: Leading Edge Notes, Wing Ribs & Gluing

Introduction

In this phase of the project we begin to glue our wing ribs to the Leading-Edge, the bottom spar, and the Trailing-Edge.

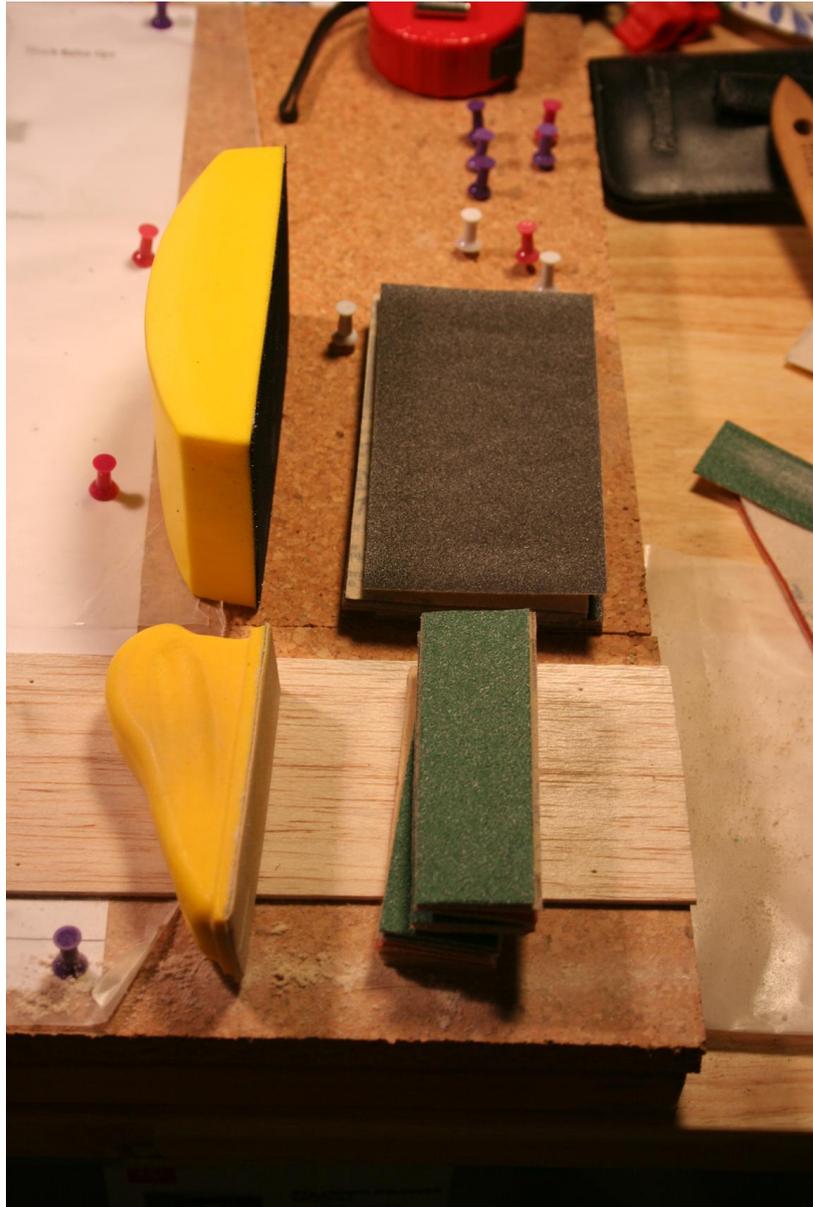
Prior to this, we have gently sanded down the slightly higher Leading-Edge backing (or False Leading-Edge) to ensure that the top of the Leading Edge is now completely level and smooth. Once completed and the Leading Edge has been reset on the plans, we begin to glue the wing ribs.

Removing & Resetting the Leading Edge

Since the Leading-Edge is not glued to any component as of yet, we can remove it to perform whatever necessary sanding is required. However, doing so should be done with care.

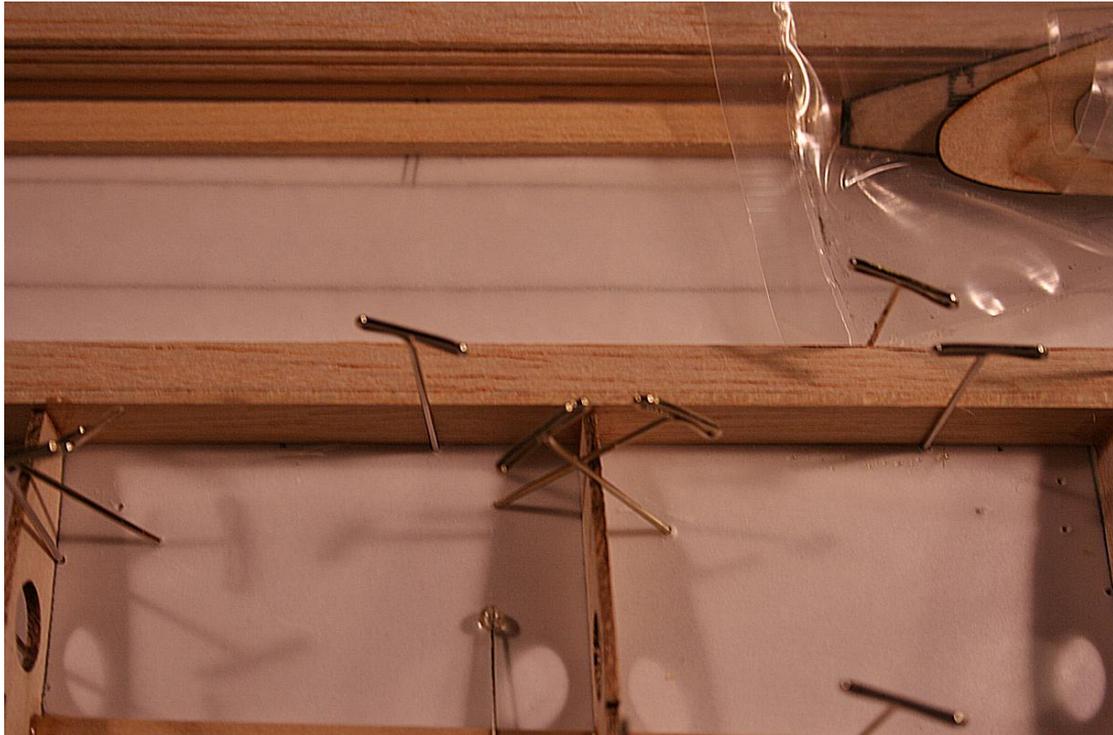
In this instance, the best way to ensure that the Leading-Edge is placed back on the plans exactly as the development of the project to this point has seen it is to follow these steps...

- Before removing any pins that are holding the Leading-Edge down on the plans by being put through the Leading-Edge itself, take a number of T-Pins and on both sides of the Leading-Edge abut them up against the front and the back of the Leading-Edge and pin them down onto the plans in as upright a position as possible. This will ensure that once the internal holding pins are removed, the Leading-Edge will still be in the same position.
- Next, remove one of the T-Pins at the end of Leading-Edge that was holding the Leading-Edge from sliding back and forth.
- Gently slide the Leading-Edge out from the rows of T-Pins that are now holding the Leading-Edge in position.
- Gently sand down whatever overlap there is with the Leading-Edge Backing so that it is now level with main part of the Leading-Edge. Good sanding tools to use for this process can be seen in the image below.



- When you have completed the sanding to your satisfaction, slide the Leading-Edge back between the rows of T-Pins that you have pinned to the plans to keep the original position of the Leading-Edge. Slide the Leading-Edge all the way in until it hits the end T-Pin that has not been removed.
- Finally, re-pin the Leading-Edge to the plans as done originally so that the pins go through the main part of the Leading-Edge. You may have to use a hammer to do this, so use it very gently.

The top of the Leading-Edge after being sanded should appear as in the image below...



Starting To Glue The Wing Ribs

For some reason I always begin gluing the wing ribs from the center outwards. In this case, I began by going towards the wing tip since the wing-root rib has some additional complexities that still have to be researched.

I only use **30-minute Epoxy** for all my work. Using this type of Epoxy ensures that I will have more than enough time to make any adjustments of corrections to the positioning of a piece. I have never been a fan of CA glues since they are not at all flexible to work with.

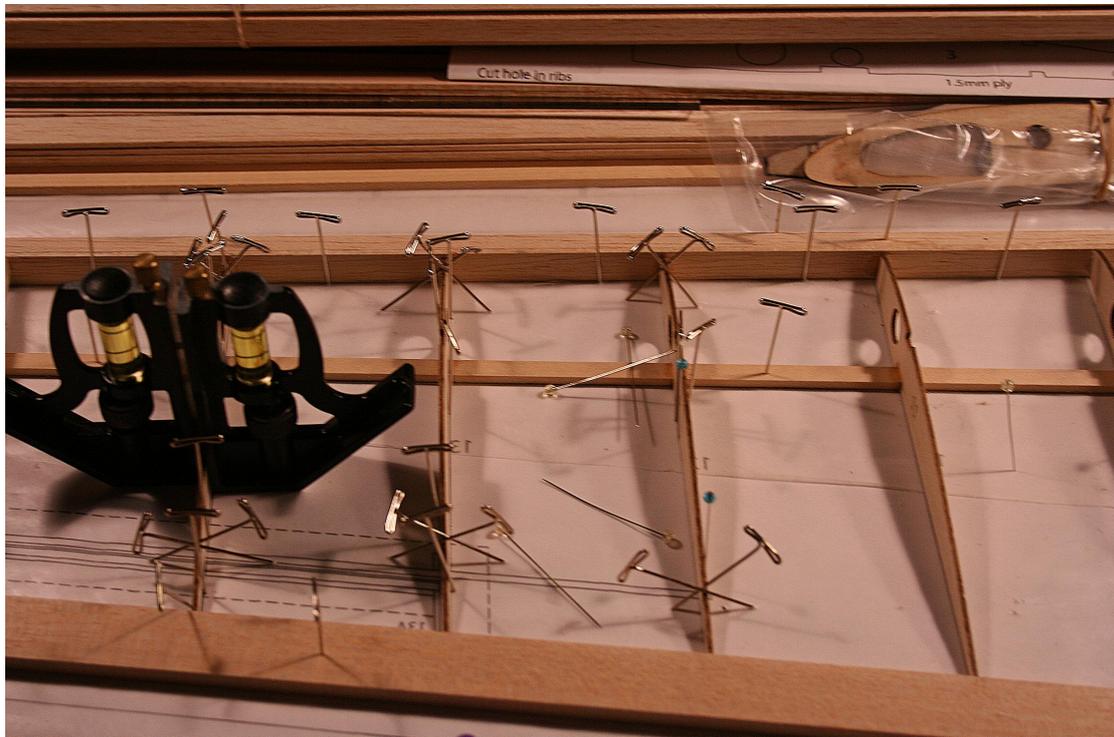
At this point, I have glued 4 of the ribs, starting with wing rib #11 and in this session ending with wing rib #14.

The way I have glued these ribs was to apply a little epoxy to the lower part of the rib's front (or the face, which will be glued to the Leading-Edge) to ensure that glue will not dry at the top where the skinning will happen later.

Glue is also applied to the lower notch of the rib and its very small rear. Again, do not use an overabundance of glue on the ribs' rears since you do not want the glue to become a problem when the skinning at the rear has to be implemented.

To set the ribs properly, I use two levelers for ensuring that the ribs are set as close to a 90 degree angle as possible when being glued. I also use a number of T-Pins to hold the ribs against within their plan-lines as well as securely down on the plans. This latter is done to ensure that the ribs do not move upwards, which can easily happen as a result of their design.

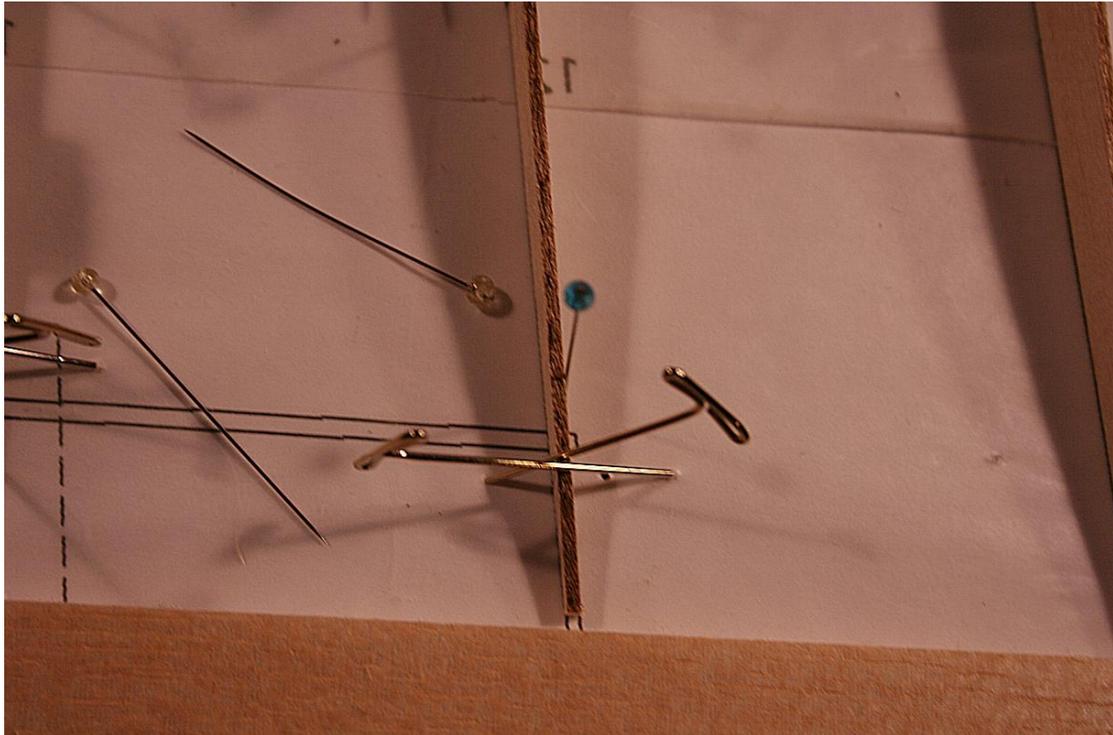
As you can see in the following image, the #11 rib has already been glued in position and has dried, with rib #s12 through 14 being glued into their own positions.



Correcting A Wing Rib Sanding Mistake (Rear)

As with any project you will make mistakes with how you measure your required woods for project completion and the sanding of various pieces. This will be especially true for building your aircraft from short-kits and the corresponding plans since it is nearly a scratch-build experience.

In this case, I made a few such mistakes when sanding the rather small rear-ends of the wing ribs for my left wing. One such mistake can be seen in the image below...



Notice the gap between the Trailing-Edge and the rear-end of the wing rib.

Don't panic! This will probably happen to you as well.

There are two ways to easily fix this...

1. One way is that when the wing rib's glue has completely cured is to add some Balsa filler to build a joint between the rib's rear-end and the Trailing Edge. The type of filler to be used can be found at the end of Document #2 in this series.
2. The other way to correct this, is to position some Balsa of just about the right length into the gap, gluing it very sparingly and then sanding it down.

Considering how small such gaps will most likely be, the best option would be to use the filler. Its not like you will have to use a lot of it. And like actual Balsa wood, it can be easily sanded to shape.