

# COVERING *how to*

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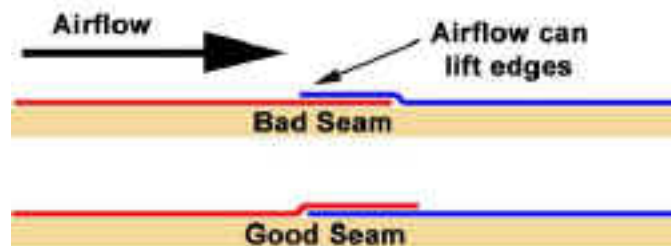
TIPS & TRICKS

## INTRODUCTION

In this how to article we're going to talk about covering. This seems to be one of those things that sends chills up the spines of people who either have never attempted it, or have attempted it with poor results. I'm not saying that it's easy, in fact it's one of my least favorite building tasks. But while I'm not crazy about doing the covering, I love having a good looking airplane. As you read through this article feel free to click on each of the pictures to enlarge them for better viewing.

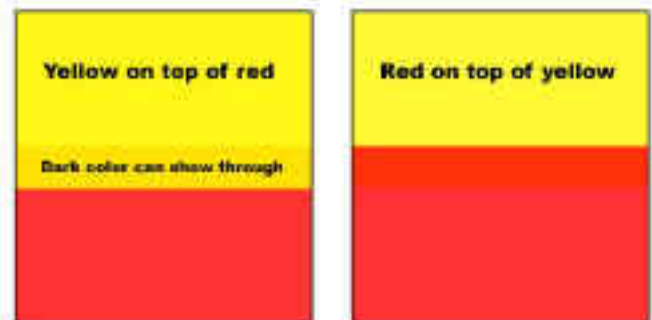
Let's start with the basics: Tools. Of course, you COULD do a covering job with a pair of scissors and a clothes iron, but here's yet another chance for your loved ones not to have to worry about what to get you for your birthday (Christmas/Chanuka/anniversary, etc.). So what do you need? I would say a straight edge, a razor blade, a covering iron, and a heat gun are all that is needed for most covering jobs. For some of the trickier jobs, you may want to invest in a trim iron as well. It's also a good idea to have a good supply of razor blades. These things get dull quickly. Sure, they're still sharp enough to slice your fingers up pretty good, but to cut a nice clean edge on a piece of covering, it needs to be SHARP!

**RULE #1:** Whenever possible, start at the back of the plane and work your way forward. Why? Because by applying pieces starting at the back, any piece of covering that is in front of another piece will be on top of it thereby keeping the exposed edges out of the airstream where the wind can lift them.



**RULE #2:** Whenever possible, use darker colors on top of lighter colors.

\*Note: There are times when one or both of these rules can not be followed. Don't worry about it, just apply them when you can.



## COVERING TECHNIQUES

### Small Holes



I usually start with the easiest things first; the elevators, rudder and ailerons. These are easiest because they are not attached to anything yet. (You didn't hinge them in place before they were covered did you? If you did, don't worry, they can still be covered, it will just be a little more hassle than if they were separate.)

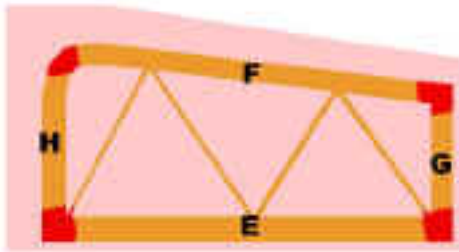
Next, prep the surface. Sand everything smooth, and wipe it all down with a tack cloth (spray adhesive on a rag works well too).

There's one more thing I like to do before I start, and that is to put a small hole in each of the cross braces, and one in the outside frame (in an inconspicuous spot). You can do this with a pin, but it's better to use a small drill bit that you can just twist through by hand. The reason for this, is that when you cover the second side, air will get trapped into each of the little pockets, and as you go over it with the iron, this air heats up and expands which inflates your covering like a balloon until it cools. This inflation can also cause the covering to lift from the structure. By putting in the holes, it gives the heated air a way out (and back in when it cools).

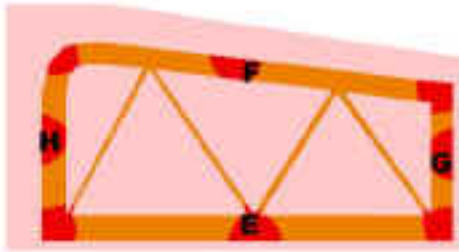
### COVERING



The first thing you want to do is to cut a piece of covering slightly larger than the piece to be covered. How much bigger? If you look at the Rudder in the picture to the left, you will see that the covering is just hanging over two of the edges with a few extra inches on the other two sides. The reason for this is that you will need extra covering near the curved corner which will be explained later.



Set your iron temperature to the manufacturers specs, and tack down corner "A". Keep the iron flat against the surface, and don't wrap the edges down yet. Next, pull the covering snug at corner "B" and tack it down the same way. Next, go to corner "C". Pull it tight, but don't over do it, You just want to pull it tight enough to smooth out most of the wrinkles. Remember, any and all wrinkles will come out later when it is shrunk. Then do the same at corner "D". You may notice that the color darkens when heated. This is normal. It will return to it's original color when it cools.



Ok, now tack the covering down at "E" and "F", keeping it taught. Then do "G" and "H". Now you can tack down the entire edge, working your iron outward from center. At this point, you could go ahead and run your iron across the structure to tack down the cross braces too, but it's really not necessary.



Outside frame completely ironed down.

## COVERING CORNERS

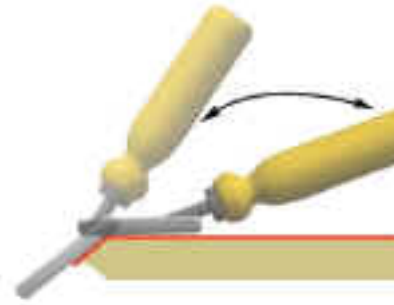
Since the round corner is in the back, we'll start there. After this one, the rest will be easy! Lay the piece flat against the corner of a table and either weight it down, or have someone hold it. Have your heat gun in one hand, and wear a glove on the other. Now, while heating the corner, pull and stretch the covering around the curve (this is where the extra material comes in handy, you need something to hold on to!) The best way to describe this is to imagine that the covering is a thin sheet of rubber that you are going to stretch over the curve.



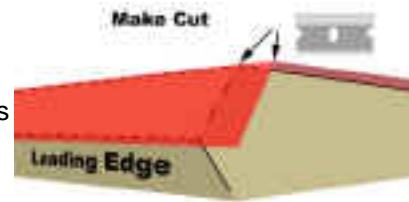
The heat will allow you to stretch the covering as well as shrink it. You only need to go just past the halfway point, as the covering on the other side will overlap it. This is definitely a tricky operation. You must pull with enough force to stretch the covering without pulling so hard that you tear it (or getting the heat so close that you melt it).

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Now take a fresh razor blade, and trim the excess covering. Next, let's do the first corner. Tack down the leading edge starting in the middle and working your way to either end. Use a rolling motion moving from the center outward.



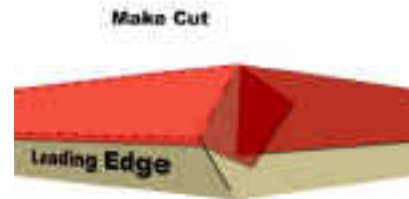
Slit the overhanging covering with a razor blade where the bend is between the surface and the LE bevel.



Next, iron down the side piece first, then iron down the front



Now the front seam covers the rear seam... See Rule #1. Repeat this on the other end of the bevel.



Finally, using a sharp blade, trim all excess covering just past the halfway point. And finish all edges with your iron. Then go over the entire surface with your heat gun to give the covering a final shrink.



Trim covering just past halfway so the other side will overlap. Now repeat the process on the other side!



## TIPS & TRICKS



Covering the tail feathers can be made much easier simply by applying 3/8 inch strips of covering to all corners before covering.

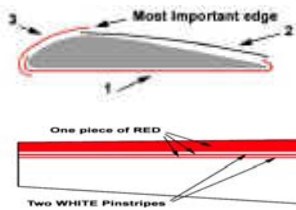


Another tricky area is an inside corner, like the aileron cutout in a wing. After the surface of the wing is covered, you must slit the covering at the corner, but now, instead of the two pieces overlapping, they will leave a gap of unprotected wood. Here I usually first apply a small piece to the corner before covering.



Now, when the edges are folded over, they will overlap the piece I applied first.

### COVERING EXAMPLE



Here we have a wing with a typical Trainer color scheme.

To do this color scheme, I would first do the tips, followed by covering the bottom with red. Then I would cover the top (from the TE to the spar) with white. And finally, wrap another piece of red around the top and LE paying careful attention to keeping the seam at the top straight.

Now instead of adding a red pinstripe and trying to keep it perfectly aligned with the red edge, I would use a white pinstripe (let's say 1/8 inch) and keep it 1/8 inch from the edge.