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Fabric Application Instructions

Applying the fabric is quite simple. A few areas will require some attention, but generally this process is straight forward. Remember this fabric is 100% linen and it does **not** heat shrink. The dopes **will** shrink and fuel proof the fabric.

Recommended tools

1. Sharp fabric scissors.
2. New xacto blades
3. One or two inch wide bristle brush.
4. Sig stix-it or Aleene's Tacky Glue or Coverite Balsarite.
5. Sig nitrate and butyrate clear dope. It is very important you **do not** use the lite-coat butyrate dope; it **has** to be SIG Super Coat clear dope. You can also use Randolph products.
6. Steam iron and iron board.
7. Sand paper 400 to 600 grit paper.

QUICK OVERVIEW -

You will iron the fabric flat, apply to frame using the tacky glue, mist the fabric, add two coats of nitrate dope, **light** sanding after the nitrate, then add three to five coats of butyrate dope.

It is recommended that you apply the fabric to a practice wood frame, learning the process and understand the fabric. It is possible to apply this fabric with superb results, take your time

Preparing the fabric

On original aircraft the wing fabric polygons were oriented from the leading to trailing edges. Which means you would take your fabric panel and lay it from leading to trailing edge, then cut an inch or two past the trailing edge, repeating this process across the wing. Although, if desired you can lay the fabric panel from wing tip to root rib. It is up to you. If you decided to sew the fabric together for wings now is the time to do so. Note - the polygons are **not** meant to align with each other as you apply the different pieces. You use a straight stitch and regular ivory/tan color thread. It should look like the seam found in Levi blue jeans. The fabric sew line goes where ever it ends up on the wings; meaning that it does not have to be over a rib. Onto the preparation - iron out any wrinkles using steam and heat. Fabric should come out wrinkle free, if not apply some water with the spray bottle and continue ironing. All wrinkles should be removed. Iron both sides of the fabric.

The dark lozenge fabric will go on upper aircraft surfaces and the light lozenge fabric will go on lower aircraft surfaces. This is typical of wings, fuselage and tail.

General Application

Make sure all surfaces to be covered are sanded smooth and free of grease, dirt, and dust. Note - the polygons are **not** meant to align with each other as you apply the different fuselage pieces. For the fuselage, start with the sides first, then the turtle deck and the bottom last. Remember polygons do not line up. Start by applying a line of tacky fabric glue along the top and bottom longerons. You do not need any glue on the vertical supports, just the longerons. Plus do not get happy with the fabric glue, a nice thin line will work. If you're not using the fabric tacky glue apply a heavy coat of Stix-it with a brush. Lay the fabric over the fuselage side, where the fabric is extended by at least 1" beyond the longerons. Align the lozenge pulling the fabric tight. You should have pulled the fabric rather tight and no wrinkles should be present. You will notice that the fabric glue dries in about 5-10 minutes which means the fabric is basically glued to the fuselage. At this time mist some water on the fabric. When the fabric dries, it will get a little tighter. Trim the excess fabric away leaving at least 1" beyond the top and bottom longerons. **Nitrate** dope must be applied first. **Nitrate** dope from SIG is a non-taughtening dope, meaning it will not shrink the fabric, nor will an iron or heat gun work. The purpose of **nitrate** dope is to fill the fabric weave. Brush two coats of **nitrate** dope (60% nitrate and 40% thinner) onto the fabric. You might notice the fabric will get a little course and wrinkle a little bit, don't worry as the fabric **will** get tight when the butyrate dope is added. Using a new exacto blade cut the fabric **very straight** along the

frame. When you add the bottom or turtle deck fabric it can overlap the side fabric a wee-bit. When you add the **butyrate** dope it will help the fabric blend together and make a good looking overlap. You should just try to cut the fabric straight at the outer edge of the longerons. You can use fabric glue to help secure any areas that the fabric might have come loose. There should not be that many areas of this. Repeat the above process for turtle deck. You can do the bottom after you have your radio, wiring and cables done. Now the fuselage is covered, trimmed and has two coats of nitrate. The fabric will feel a little rough. You can **carefully** sand the roughness by using a 400 or 600 grit sand paper and **lightly** go sand down once on the fabric. Basically, just stroke the sand paper across the fabric once. Don't get happy and sand too much you will damage the fabric. Use a damp cloth and wipe the fuselage off. You can now add the butyrate dope. Butyrate dope by SIG (Supercoat clear) is a taughtening dope, meaning it will tighten the fabric up. It might take two coats of butyrate dope but the fabric will get tight as a drum. At this point the fabric should be a wee-bit tight and not all that saggy. Once again, you are going to thin the dope with thinner. Apply **butyrate** dope (60% butyrate and 40% thinner) onto the fabric; let dry. Add another coat of butyrate dope (60% butyrate and 40% thinner) over the fabric. Add another two to four coats of butyrate dope, until you're satisfied with the finish.

Wings and more

Realize that almost all lozenge fabric is applied to the wings perpendicular. In that, the polygon patterns will run from the leading to trailing edges. Which means you would sew the fabric together enough times to cover the wing. Some 3-views will show the sew line locations. Although, if desired you can run the fabric from wing tip to wing root. Note that the fabric is quarter or third

scale of the real fabric which was not intended to run from wing tip to wing root. So, on a Fokker D7 top wing the chord is larger than the width of the fabric, so, running the fabric from wing tip to wing root fabric will be a couple of inches short.

You want to start the wings or any other control surface on the **bottom**; if you make a mistake it won't be that noticeable. A trick used by the full scale builders is to add some wax to the top of the spars so the fabric won't stick to the top or bottom of the spar. Although, if you can apply the fabric and keep it from touching the spars then don't use any wax. If you want lightly apply some wax now to the top and bottom of the spars, just remember not to let the fabric sit in the wax as the fabric will absorb the wax and you won't be able to get it out. On Fokker wings, the spars are very close to the top of the rib cap. If the bottom wing is under chamber then you should a thin line to every other rib which will help the fabric stick to the rib caps. To locate the center of the leading edge, use a straight edge and pencil, draw a straight line down the front leading edge. This will help you trim the fabric straight as well as create a glue line location.

Using the fabric glue; apply a single line down the center line of the leading and trailing edges, wing tip outline and every other rib. Start applying the light fabric (bottom side) at the root rib (nearest fuselage) working your way to the tip. Keep the sew lines straight, if you have them. Pull the fabric straight, making it tight. Basically, the fabric is glued to the wing. Now mist the fabric with your water spray bottle and it will get tighter. Once the fabric is position add the nitrate dope. If the fabric touches the spars, flip the wing over and push the fabric off the spars. Trim the fabric straight so it stops down the center line of the leading edge. (Note that the dark fabric will butt up to this center line.) Once complete with the nitrate dope, add the dark fabric (top side) to the other side. Follow the same process as above except that you do not need to add glue to every other rib. Once complete with the nitrate dope

go ahead and start adding the butyrate dope; usually the fabric will get tight after two coats. When applying dope to any flying surface (elevator, rudder and aileron) **always** brush the dope in the same direction of the air flow. Just take your time.

Rib tapes

If you plan to use rib tapes, then the rib tapes should be applied after the wings are covered with second coat of butyrate. The tapes go down better when the fabric is tight. They should be applied with butyrate dope and some fabric glue. Put two parallel lines of glue near the edge of the rib tape. Don't get happy with the glue. Keep the rib tape straight as you apply it to the wing. The fabric glue will ensure that rib tape edges will not curl. Wing rib tape size is 1/4 inch for quarter scale planes and 5/16 inch for 1/3 scale planes. And where the dark and light fabric meets each other the "border" tape size should be 5/16 inch wide on quarter scale planes and 3/8 inch for 1/3 scale planes. Put the rib tapes on first; then add the "border" tapes. Remember the rib tapes go from the leading to trailing edge.

Rib tapes are usually different on certain planes, such as, some used lozenge fabric and some were salmon or light blue in color. Note that **none** of the Fokker tapes were pinked. If your plane needs pink or light blue tapes, you can get ribbon tape at your local fabric store and dye it using Ryte-dye.

Misc pieces

To do the rudder, stabilizer or elevator you can just follow the same process. Just realize when the fabric shrinks to drum tight it can crush your frame. Make sure your assemble rudder, elevator or stabilizer is built strong enough to deal with this shrinkage.