

Light Weight Polysapn

Here is an article via David Mills Atlanta, Georgia. (Posted here Feb 2010)

I'm primarily a glider and rubber flier and I've been using the synthetic coverings for a long time. I've settled on using ¼ mil Mylar for the tail-feathers and lightweight Polyspan (LW) for fuselages and wings. I've plenty of company locally in the use of Mylar, but I've pretty much gone it alone in the use of the LW. This is understandable because it's not as easy to use as its brawny relative, regular Polyspan, and even my best practice has still left some porosity issues, not enough to affect AE but the look scares off many. Still, I love the stuff. It's cheap, durable, and weather-proof, and done properly, light enough. However, I don't think LW should be used on any gas job.

I'm a little lazy, so I'm always looking for easier/quicker ways to do things. I bought some new LW from Larry Davidson, which happens to come with something called "instructions". Always a reader of same, it introduced a new technique that I followed to the letter with great results. Passing it on

Basically, you prep the framework as always, brushing on a good schmear of nitrate and attaching the LW by bleeding thinner through it onto the framework, shiny side out. Take care to not attach too much at a time because LW tears easily and you don't want to commit whole-hog until the entire perimeter of the section is covered and very taut throughout. So, use a small, ¼ in. brush and hop around the perimeter with thinner and hit the rib under-cambers and bottom spars last.

Here's where Larry's sage advice come in. After all the LW is attached and **completely dry**, apply a first coat of nitrate with a **small foam brush**. I use a 1 in. wide one with excellent results. (Look for the cheap, disposable kind at Michael's and other craft stores in multi-bags.) It works much better than a regular brush; who knows why, but it seems to put the nitrate on top of the LW and not push it through, resulting in much more effective sealing of the fabric. After this is **completely dry**, use the heat gun and shrink it with merry abandon because the pores don't open up any more as the nitrate locks down the fibers. Give it two more coats of the nitrate with the foam brush and you're done.

A few more tips in closing: let the nitrate **dry thoroughly** between coats; avoid the most common mistake and keep your nitrate/thinner solution **thicker than usual** to at least a 60/40 ratio; after each of the last two coats, I like to sand the surface with a small piece of 600 W/D or finer (some of the smart fellows leave the fuss alone on the first third of the upper surface); and be sure to watch your wings for warps as they dry and cure because it takes time, and if they pop up, a quick shot with the heat gun fixes it.

For coloring I like to use floral spray because of its lightness and vivid colors. Others use a thin top coat of dyed nitrate to good effect. Numbers can be made from Jap tissue, Monocote trim, or decals. LW can be patched exactly like Jap tissue or silk.

For the structural types out there, here's some numbers to crunch. I've covered dozens of wings and fuselages the last several years and my weight results are consistent. The weight of the LW and three coats of nitrate is around **3 gm. per /150 sq. in. of single surface area**. For example, covering the top and bottom of a Gollywock wing, for example, will cost you about 6 gm., not counting coloring and numbers. Also, I'm not a fan of non-taughtening dope in the LW application.