

Silk and Tissue over Mylar

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For SCIFers, this one is an oldie but a goodie. John Meany of England used to come visit Mik Mikkelson on John's layovers in Los Angeles. At some time in the early 1990s, John showed up with a rubber ship covered in red silk over clear mylar. John explained the virtue of this double covering; the mylar inside was impervious to splashing rubber lube, and the two layer covering was actually lighter than doped silk alone. A SAM Talk posting of Karl Gies showing a tissue over mylar Jasco Trooper glider prompted Grant Carson to ask, "Why cover twice?"

Graham Knight of England replied as follows:

"Several reasons Grant. Mylar is impervious to moisture, so in humid conditions the combination is more stable than tissue alone, and it retains the rigidity of doped tissue covering that most modern plastic coverings lack.

Visually it's identical to traditional doped tissue so perfectly suited to vintage models. When done properly the combination of tissue and Mylar is actually lighter than tissue alone, because far less dope is required to make it airtight, dope is heavy. Though it sounds unlikely it actually takes no longer to cover the model than tissue alone, mainly due to the fewer coats of dope.

The puncture resistance of tissue and Mylar is greater than either material alone.

Complex colour schemes can be done using coloured tissue, with only a very small overlap between panels, and the break between colours can be done anywhere and not just restricted to places where there is underlying structure.

By using aluminized Mylar a completely opaque covering can be achieved for zero weight gain, great for scale models.

The use of Mylar allows lesser grades of tissue to be used. In fact some of the cheaper grades actually work a lot better than the most expensive Jap tissue. The cheaper tissues are generally more easily available and come in a much greater range of colours

Graham Knight also discussed an aluminum finish technique he uses with tissue over mylar. He starts with aluminized mylar (available from Model Research Laboratories here in the States) then covers it with black tissue. At this point, he has a completely opaque covering job. He then airbrushes on a light dusting of condensed nitrate aluminum dupe. He lets the paint stand for a few days, then carefully pours off half of the clear lacquer (the pigment in aluminum or silver dope tends to precipitate out anyway) on top of the sediment. He replaces that with an equal amount of thinner, then stirs up the mixture and airbrushes a light coat over the black tissue. Your editor thinks that this technique would be very useful for some of our SCIFers who are also FAC scale guys — lots of airplanes in WWII had natural aluminum finishes.

(Flightplug) Editors Comment: Tissue or silk over mylar is a very good technique on rubber jobs. I have my doubts about whether it is truly satisfactory for a large gas power ship unless you use something like 15 mil Mylar. I've got an eight foot wing for an Art Swift Long John Nostalgia gas ship that I covered with tissue over mylar. I didn't get much in the way of torsional rigidity. I don't know whether the single coat of tissue wasn't enough to "lock things in" (although Art claims that he flew the ship with a single coat of tissue covering in the late 1940's) or whether the underlying mylar substrate wasn't gripping the wing ribs and LE and TE tightly enough. I do know that with a honking McCoy .49 on the nose, the Long John would make just one flight — and that wing flutter would make the wing explode. I won't fly the ship until I recover the surfaces using some other technique.