

MYLAR AS SUBSTRATE

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Many of the SCIFs are familiar with the silk or tissue over Mylar method of covering. John Meany of England used to fly in and out of Los Angeles as a flight engineer on Virgin Atlantic, and visited Mik Mikkelson on many of those trips. In the late 1980's Meany showed up with a beautiful rubber ship — with red silk over Mylar. He told us that that method of finishing was actually lighter than silk and dope without the Mylar. Lots of us tried variations of this method. I believe that the weight saving comes from the fact that the dope can't get "pushed through" to the other side of the silk or tissue, so the surface is filled with much less dope.

One of the vexed questions is what adhesive you use to adhere the Mylar to the balsa framework. A fellow in England has suggested that nothing works better than Weldwood Contact cement, thinned 50% with MEK (methyl ethyl ketone). He claims it gives him a high degree of control, while allowing him to pull and stretch the Mylar in place without tangling it up. He uses a Monocote tacking iron to fix the Mylar to the airframe. He then holds a regular Monocote iron a few hundredths of an inch over the open bays and the Mylar shrinks right up. You could use 3M Spray Adhesive to put a coat of glue on the balsa frame, but the overspray glue adds needless weight, and the tacking and working life of the 3M is not as good as the thinned Weldwood.

You can get Mylar or similar plastic films in a number of places. Cottage suppliers Aerodyne (AI Heinrich) and Model Research Laboratories (Curt Stevens) here in Southern California sell it in various thicknesses. Lots of graphic arts stores sell Mylar films. Document laminating film is Mylar as well.

There's a balancing act going on here. I've had mixed results using the technique. A good doped tissue or silk (or Polyspan) surface gets a lot of its strength and stiffness from shrinking to form a "stressed skin".. A Mylar substrate adds puncture resistance to the silk or tissue, but doesn't add anything by way of stiffness across the open bays of the structure. I've had a six foot plus wing and stab for an Art Swift "Long John" nostalgia gas model covered in Mylar and heavy tissue for several years now. The surfaces are, in a word, "floppy" and have discouraged me from completing the model. I think that the completed bird would see one flight (it'll be powered by a McCoy .49 spark ignition engine) and succumb to wing flutter about 200 feet up. I crash enough of them on my own due to poor trimming to complete a model that will die from wing flutter on its first flight. Art claims that back in the day (late 40's or early 50's) people flew such ships covered with just a single layer of tissue. Maybe Art could do that, but I'm inclined to recover it with a single layer of silk before I take my chances.

But Mylar over silk or tissue certainly works for rubber ships, and the Mylar keeps the rubber lube from splattering the fuselage covering.