

Embarrassed Nitrate or Why Dope Blushes

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To gather some material for last month's issue, I browsed through a copy of Frank Zaic's Model Glider Design, published back in 1944. In it, there were a couple of paragraphs devoted to "Why Dope and Cement Blush". (ed note: I don't know what Zaic said in his document, but it should be noted here that dope blushes when water is trapped between the surface being painted and the surface of the lacquer. The water forms when quickly cooling (drying) lacquer causes the moist air surrounding the droplets of lacquer being sprayed to drop below the dew point. Moisture trapped on the surface of the object being painted with a brush will do the same thing.) Some time ago, I covered a tissue wing for an A/2 and had a major problem which failed to disappear with the application of thinner. I finally solved the problem and the solution was exactly what Frank wrote 50 years ago. "The quality of the dope or cement determines the conditions under which blushing will occur. Good cement and dope will not blush under normal conditions, while a poorer grade will do so almost every time. Temperature and humidity of the air are the deciding factors. If the temperature is low and the humidity high, expect blushing galore. If the temperature is high and the humidity is low, dope all you can. Offhand we would say that good conditions exist when the temperature is around 75° and the humidity is 40%. "How thinner removes blushes: When we apply thinner over a blush, we can see that its action is to dissolve the dope or cement and as the dope re-dries under more favorable conditions, the blush disappears. Removing blush from colored dope is more trying as the thinner tends to spoil the surface. It might be mentioned that blushed dope or cement is much weaker than normal, so try to use the better grades which tend to blush only under abnormal conditions." The key statement is, "The quality of the dope or cement determines the conditions under which blushing will occur." Amen to that. I had it half right. I was using a quality nitrate dope (Randolph's Aircraft Finish), but I cut it with a generic lacquer thinner from Home Depot. So I got some Randolph thinner and had no more blushing. Sometimes it pays to spend a few dollars more.