

Fabric Covering

Part two: Painting!

Norm Edmunds, SAAA #4732. Chapter 20 Kyneton District. Dec 2004-April 2005.

Well the covering job was done in about six weeks, working as often as I could. So just after Christmas 2004 I was ready to begin spraying. I borrowed my brother's compressor and hose, and he also has an oil/water separator and a water trap – most important, as they **DO** trap lots of water even after just an hour or less spraying.

Tools Required:

- Compressor
- Spray gun and hose
- Oil/water separators

Materials Required:

- Polybrush
- Polspray
- Polytone
- R65/75 Reducer
- C-2210 Paint Cleaning Solvent
- M.E.K.
- 800 grit wet-n-dry sandpaper. (the book says 400, but I thought this would be too harsh)

Other items Required:

- New clean cloths, **NOT** a “Bag of Rags” as these are full of contaminants
- Galvanised steel paint mixing pot
- Small paint pot
- Paint stirring sticks
- Coffee jars for MEK “slops” from cleaning operations.
- Disposable rubber gloves
- Thick rubber gloves for spray gear cleaning (MEK really can burn you)
- “Painting Pyjamas” - disposable painting suit (to keep lint etc off your work)
- Good quality spraying mask
- Cheap goggles (if you wear glasses as I do)
- Work stands – saw horses etc

Most importantly, my advice is this:

- **IGNORE** all the “experts” who have **never** used Polyfibre! Follow the book instead.
- **DO NOT** employ a professional car or other painter to do the work, but by all means, have them show you how to use the spray gear and clean it. I did let my painter mate have a little go, and he really found it quite difficult to apply the materials sufficiently wet enough! It totally went against everything **he** knew about painting. Polyfibre system relies on the wet solvents in each layer melting into the previous layer, not sitting on top of it.

Final Preparations:

- Thoroughly cleaned up the work area and vacuumed the floor.
- Hung cheap plastic tarps around the garage walls and down over the front roller door, not to protect the walls from the painting but to protect the painting from stuff blowing in and off the walls.
- Masked up required areas using top quality “fineline” tape as the edge, and proper masking paper and tapes. A big danger with paper tapes is leaving them on too long – they will dry out inside two weeks and become virtually impossible to remove easily. Replace them often if you have to.

What to do first?

- Studied the book and watched the video to fully understand the process. The video is marvellous as it shows exactly just how wet you have to apply the coatings. So I thought I’d start on the underneath of the elevators first.
- Mixed a batch of the **Polybrush** thinned 3:1 with **R65/75 Reducer** and poured this into a new 5 litre can for easy dispensing. The Polybrush actually has settled “mud” at the bottom of the can which must be thoroughly dislodged and stirred in or shaken. I had no trouble at all just stirring it in by hand with a new wooden mixing stick.
- Cleaned down the surface to be painted with **C-2210 Paint Cleaning Solvent** to remove any oily residue. This step is *most important* every time you begin to spray a surface.
- Hopped into the “painting pyjamas”, boots and donned the mask and goggles.

Firing up the spray gun:

I’ve never really used a spray gun before, but watched my brother painting cars many times over the years so I guess a bit of an idea rubbed off.

My spray gun is a new **WALCOM HVLP** (High Velocity Low Pressure) gravity feed gun with a 1.2mm spray nozzle. We had some concerns that the small nozzle might be a problem, but as it turned out, it worked out fine. The HVLP means that there is *far less* overspray and thus wasted liquids as the gun runs at 2 bar or 28.6 psi. This gun is really a bit small for large jobs, but so what, it might have taken a bit longer is all. The top mounted gravity feed pot means you can spray vertically or horizontally with equal ease.

I fitted the small pot first, filled it with Polybrush and had a bit of a practice on an old cardboard box for a few minutes. This seemed to be working out okay so on to the elevators!

Squirting the first coats of Polybrush:

Polybrush seals the fabric and provides a base for subsequent layers. So throw caution to the wind and start spraying! My gun required to be held about 100mm from the surface being sprayed. I soon worked out the correct speed of spray pass required. Spray smoothly, watching at the correct angle and light to see what you’re doing. This stuff *really* has to go on wet.

Allowing some drying time, then a second coat was applied.

Elevators done with no problem, so ailerons were done next, then rudder and tailplane. Next day I did the other side of each. So far so good, no problems. Fuselage done next with no problems. As I still had the engine on the firewall, I had devised a way to support it front and rear so that I could rotate it 90 degrees either way. The Polybrush really turns the work pink and glossy.

What's next?

Polyfibre fabric covering expert and SAAA T.C. **Brian Turner** from Latrobe Valley suggested to me that really good results could be had if I then gave the surfaces a light wet sanding with 1200 grit paper. So this I did, but switched to 800 grit after a few passes as I couldn't feel anything much happening. What did happen was that I removed most of the tiny little specs of dust or whatever that had ended up in the work. The difference was not visible but I could really feel it. *Smooooooooooth!!*



On to the Polyspray:

Polyspray, the Aluminium U.V. coating mixed 4:1 with Reducer was done next with equal ease. The procedure is to "cross coat" (one north-south, one east-west) twice, wet sand, then a final cross coat, remembering a quick wipe down with a new cloth and C-2210 solvent before each coat.



Final Color:

I chose the base **Polytone** color of **Daytona White** rather than the “pure” white that appears to be the standard for most homebuilt aeroplanes. White is boring! Again, wipe down the surface with the C-2210 solvent before painting and spray in exactly the same way as the previous coats – nice and wet, but not *so* wet that it pools or runs. It’s not hard to judge. A light mist coat first then one good cross coat is usually sufficient – a north-south followed by an east-west. The Polytone covers over the silver base really quite well. The result is a semi gloss finish – adding another coat will not make it glossier nor cover any better. Two coats **is** enough.



Adding trim colors:

As with any type of paint, bright colors, particularly yellows and reds, need to go on top of a white base so that the colors really come alive. As my base color is not far from pure white, this has sufficed quite well. Keep this in mind when planning your color scheme.

Use “fineline” trim tape which paint will not bleed under (like paper masking tapes) for your edges and apply paper tapes onto this. Use good quality masking paper rather than newspaper.

Carefully remove all the paper and tape as soon as you can. Peel the fineline tape back on itself rather than “up” to avoid peeling any paint off with it.



Adding decals and markings:

My markings are computer cut vinyl markings, to my specifications.



Final Touches:

Fiberglass cowls, wing fairings and other panels were all primed with an automotive two-pack primer/filler called "Hi-Fill". Any pin holes were attended to with a two-pack filler. All were then wet sanded smooth and washed down thoroughly, then painted, again using the Polytone Daytona White.

Introducing... ***"Red Alert"*** No. 1 Corby Starlet of 276 Starlet Squadron.



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| First flown: | July 2005. |
| Color Scheme: | Russian "Splinter" demonstrator |
| Engine: | Jabiru 2200 (85hp) 3300rpm continuous at full combat power |
| Propeller: | Jabiru 56x45 fixed pitch timber |
| Speeds: | Climb rate 1500fpm, cruise 105kt, stall 33kt, 13 LPH |
| Armament: | 2 x AA-8 "Aphid" close combat, heat-seeking air-to-air missiles |