



Talking dirty

An aeroplane is not like a car, is it. Pat Malone starts to learn something about keeping an aircraft clean

It may be a labour of love, but labour it certainly is. Aeroplanes will get dirty; oil will streak, mud will spatter, bugs will commit suicide in vast numbers on the leading edges, the windscreen, the prop and the spats – and don't get me started about the swallows in the hangar. Keeping it clean is hard work.

You can have your plane valeted, but you have to do your research; there are good valeting companies out there, but there are also some who employ work experience people or minimum wage slaves who speak no known language and who think cleaning a plane is like cleaning a car. Which it ain't. But it's essential not only for appearances sake but to preserve the aircraft and to improve performance – I heard of a Harvard that was cleaned and polished and had the rivets speed-taped, and they got an extra 35 knots out of it.

Left: keeping any aircraft as shiny as this is an unending labour of love
Right: Michael Whitley's plane-kind cleaners and soft get-round-corners brush
Bottom: who needs paint? Naked Spartan Executive looks great but needs just as much TLC



Some people are more adventurous than others when it comes to keeping planes spick and span. I met a chap who had T-Cut his aircraft; a wood and fabric Robin it was, too. "No problem" he said, "as long as you dilute it properly for the fabric bit." His plane looked a good deal shinier than mine, but I still couldn't bring myself to do it. But obviously he knew what he was doing, and that's half the battle.

Skip the page if you know all this, but I didn't until I started trying to find out and I suspect others out there are in the same boat. You're not doing yourself any favours if you use a car-cleaning kit on an aeroplane. For a start, most car polishes are silicon-based, and silicon is bad news on planes. The etch primer that's used to key paint to aluminium – a very unsticky metal for paint – gets blocked by silicon wax, and if you ever need a repair, you'll find the paint can't key very well to the metal. It's virtually impossible to remove the silicon, and it will bury the etch primer. Use a specialist water or solvent-based polish. The solvent doesn't do any harm – it evaporates quickly, but be careful what you get on your Perspex because you might never get it optically clean again. And the solvents can also attack rubber seals.

My guru in cleaning matters is Michael Whitley of Cambrai Covers, who's built a solid business on his expert knowledge of aircraft covers, paint, protection and cleaning. If you've got any questions about covers, cleaning or ground equipment, Michael will talk your hind legs off. He stocks a range of aircraft cleaning products that he swears not only do the job, but give the plane the best long-term protection. I can testify to the fact that they clean well; as to the other, ask me in five years.

Michael's complete range contains a general exterior cleaner, a Perspex cleaner and an aircraft polish, together with some get-round-corners brushes and various cleaning cloths. He gives away a free sample kit with every new Cambrai Cover, with replacements available from Michael to keep up the good work. I thought the external cleaner bottle looked a bit small, but I got four washes out of it and I could have got five or six if I hadn't slapped it around so liberally.

The window cleaner comes with specific

instructions from Michael on how not to use it. Never clean a Perspex window with a circular motion, or you'll get those swirl marks that hamper visibility. Just move straight up and down. Soak the bugs and let it stand first. The shell of an insect is made of Keratin, which is an extremely tough fibrous compound, hard as nails and a lot harder than your windscreen. The soft parts of bugs would make an excellent glue when it hardens. So what you've got sticking to your windscreen is a tiny but very effective piece of sandpaper. The longer you leave it, the harder it's going to be to get off. It's worth giving it a rubdown at the end of every flight, particularly if you're putting covers on. The cover itself won't damage the Perspex, but when it moves against the Keratin it can leave a mark. I now keep a grip spray in the aircraft for this purpose. And don't use a paper towel to do the job – wood pulp is hard enough to scratch Perspex.

Michael's polish contains something called Carnauba, a naturally-occurring substance that makes shiny plant leaves shiny. It's a by-product of a number of manufacturing processes which use such leaves, but its inclusion is not just a nod to the tree-hugger in all of us. It's good at what it does, and it's very

tough. It's this wax that not only shines your paintwork but stops corrosion. And it is so safe it is even edible – though Michael says stick to milkshakes rather than Plane Perfection – your aircraft needs it more than you do. Paint is porous and water will get through; composites are porous by nature, and keeping water out is the name of the game.

Of course, there are a lot of parts of the plane that can be treated like car parts. I'm told it's okay to use the excellent bug-shifter foam I use on my motorcycle on the fibreglass fairings and spats. (Why does my left spat always get so much dirtier than my right spat? Must be something to do with the propwash). And there's no harm in using a pressure washer on most aircraft, as long as you're careful. Obviously I wouldn't use it on the fabric, where the pressure would stretch it; Michael suggests being ultra-careful with pressure washers and using them on the lowest setting. Almost all power washer pumps are piston-driven rather than impeller-driven, so the stream will pulse, setting up a drumming that will certainly shorten the life of your fabric.

Good tip: always clean the back of the prop thoroughly. It wasn't until I was warned about



this that I had a close look – I'd run the cloth over it, but there was still a film of (mostly grass) residue that was reducing efficiency. A proper clean probably gave me a free knot.

Paint

One of the problems with polishing an aircraft is that you start to see the blemishes in the paintwork. Do you, in fact, need paint at all? It has its pros and cons. According to Michael Whitley an unpainted, blind riveted Spitfire was found to be 15 knots faster, while an unpainted 747 saved something like \$15,000 a year in fuel. "You'd still have to wax it and polish it regularly, though," says Michael.

Don't let Mick Allen near your plane if you can't face the awful truth. With his 50 years of experience of paintwork he sees everything you've missed. Mick is the guy at Turweston who does fantastic resprays – see www.allenaircraftresprays.co.uk. He says that by the time you've got two coats of primer and



Right: Mick Allen casts an expert eye over a DR400 and points out previously unseen blemishes

three coats of polyurethane paint on, you've added about 120 microns to the bulk of your aircraft. Car paint, incidentally, is thinner and lighter, so if you're having a homebuilt sprayed in a car shop you're adding less weight. But by law, cars must now use water-based paint, while aircraft can still use solvent paint because it's resistant to Skydrol, the aircraft hydraulic fluid which strips water-based paint. There's no difficulty in getting solvent paints, though – only Britain has outlawed them. But

you'll have to sign an indemnity for your supplier, promising that you won't paint cars with it. In triplicate.

Once you've got minor cracks in your paintwork, says Mick, the moisture starts getting in and degeneration accelerates. I was aware of a number of cracks on the DR400, but by the time Mick had finished inspecting it I was pleading for mercy. The solution is for me to send a panel up to Turweston for matching, then Mick will send me a half litre

of paint and a hardener, and I'll trickle it into the cracks with a two-bristle brush. Then, says Mick, you stick Sellotape over it. No kidding. As an example of what can be done, Mick presents an ex-Hamble PA28 which looked like a wrung-out dishrag when BA was finished with it. The new owner cleans and polishes it twice a week, and it will almost blind the unwary. Twice a week?

I'll let you know how I get on with the Sellotape. ■

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