

AQUACOTE PAINTS

Revisited, again!

by Robert Ayliffe

Amidst John Holthouse has been building a very fine Gunter Sloop lain Oughtred Shearwater from one of our Stray Dog kits.

John is an experienced builder. He knows good materials. He has done a beautiful build of this kit, using our dimensioned timber and Bote-Cote epoxy products pack.

He's chosen to paint her with Aquacote Red on the bottom, Aquacote Off-White on the topsides with an Aquacote Black boot stripe, and Aquacote grey Off white and Clear on the inside. All over a fine sanded lush buildup of Bote-Cote epoxy resin, of course. It looks so fine against the hoop pine timber trim, and the old growth vintage spruce that we have supplied for the spars.

John's Shearwater is a master work.

Aquacote? What is Aquacote?

Aquacote is a water based polyurethane paint system first developed by BoatCraft Pacific's resident scientist, Dr Bruce McConkey, in the late 80's.

It promised much, but early teething problems hindered acceptance.

The problems, as I experienced them:

- Opacity (pigment) limited especially in British Racing Green, Navy Blue, Red 318.
- Fogging in the Aquacote Clear (varnish)
- No techniques available for non spray application
- Low gloss.

That put the clients, who initially liked the concept, off.

Put me off, too.

I gave up on recommending or stocking it. But I could never shake the idea.

What we liked:

A real marine water based non toxic paint, with an excellent range of colours

- A one shot application, if painting directly over faired epoxy resin. If suitably primed, Aquacote has proven to be a great coating over polyester and many other surfaces, including, raw timber, aluminium, even well prepared older paint surfaces, and concrete
- Extreme durability
- Very high fade resistance
- Australian developed, made and owned
- Its 'backwards compatibility' with epoxy surfaces means that repairs become much simpler since the epoxy bond over the sanded Aquacote paint surface is so good
- Reduced wastage. Because after four hours the 'hardening' cross linker that is mixed into the Aquacote prior to application, 'goes to sleep', so you can pour the unused paint back into the can, to use it again another day
- Very quick curing time. May be slightly increased in colder temperatures, or high humidity, or by adding more water (thinners!)
- Ability to apply in almost any weather or humidity
- No fire risk, or thinners stink
- Reduced health risk.

It's fundamental to amateur and much professional boat building that we must be able to apply our finishes by hand, inside or outside of our sheds, whether it be by brush, foam brush or foam or short nap mohair rollers. We mostly don't want to set up for spray painting, we worry about the particles in the air, we hate the collateral damage in our workshops and to ourselves of over spray and most of all, we HATE the degree of masking up that's required for spraying, especially in a shed.

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Australian Cruising Helmsman magazine likes what we like too, and gives Aquacote extremely high scoring against its solvent based 'conventional paint competition, only marking it down on its initial gloss. I say initial gloss, because I notice that after a couple of years at a mooring, the Aquacote painted boat has lost none of its relatively modest gloss, while its initially glossier cousins have become quite drab looking. Walk around any marina, and you'll see what I mean.

So back to what we didn't like:

Then: Aquacote pigmentation seemed thin, especially in darker colours.

Now: Aquacote is now as dense in its pigmentation load as any paint I've ever used, its dark colours are quite rich.

Then: Fogging in the Aquacote Clear.

Now: Thanks to Dr Bruce, no more. Clear, stays very clear!

Then: Instructions gave little attention to hand (roller brush, foam brush) application.

Now: New instructions are being written as we speak for non spray application.

Then: Low gloss levels in any colour.

Now: It's now possible to achieve excellent gloss in any of the colours, without the tedious, and surface film damaging effects of 'cut and polish' that some have resorted to.

Here's How Gloss Happened

Geoff Taylor at BoatCraft Pacific hadn't quit on it either. We knew he had been fiddling about with the clear, and had come up with a technique where he built up several coats of clear over the Bote-Cote

surface, and did the final coat with the clear heavily thinned with water, applied by fine roller sleeve, foam brush and even a clean rag.

GLOSS! Looked like 'proper' varnish! And, what's more, it continues to look like 'proper' varnish, for a long, long time.

We tried Geoff's technique on some outside furniture at home, that I'd restored, sealed and coated using Bote-Cote epoxy resin, and a similar application on Grant Flanagan's restored Cat Boat main cabin hatch. I then tried Geoff's technique, on a day of 18° and, high humidity. I'd let the Aquacote build up coats, cure for a couple of days and final light sand with a fully dust extracted random orbit sander fitted with a soft interface pad and 240 grit paper. I washed the surface with clean water and let it more or less dry out. I then applied the cross linked, well mixed Aquacote clear coat with 50% water.

And a more or less clean rag, wet with the thinned Aquacote clear.

Perfect!

Gloss! A year of sun and heavy use later, both the table AND the cabin hatch are still looking fabulous. My wife loves the table, if anything, it's now even shinier.

To reiterate:

Gloss and hand application are fundamental to amateur and much professional boat building ambition and practice.

Cured and sanded Bote-Cote epoxy resin is a perfect undercoat of itself for Aquacote. It is possible to use coloured pigment (available BoatCraft agents) in the final sanding coat prior to applying the coloured top coats to achieve the effect described.

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The colours in colour card are what you will get if you apply a build up of coats over sanded Bote-Cote epoxy resin or white or tinted epoxy primer.

Our experience is that cured and sanded Bote-Cote epoxy resin is a perfect undercoat of itself for any of the Aquacote colours. However, pigments are available (BoatCraft agents) to add to whatever you coat with prior to top coating.

SURFACE PREP

All finished paint surfaces reflect (literally) the surfaces underneath. So it's important that your sanded epoxy or epoxy primer surfaces are faired as smooth as possible, finishing off with say 180 grit with a random orbit sander, with an interface foam pad, which reduces the risk of 'digging' in on your surface with the edge of the sanding pad, and positive dust extraction. The sanding is also essential to provide a fine surface 'tooth' for the paint to adhere to.



AquaCote Varnish applied 50:50 – clean water and rag, SA.

Make sure that any acute edges, such as the turn at the lap of the planks is subtly rounded so it no longer feels sharp. Acute edges are ALWAYS the first to break down, because they are most vulnerable to knocking damage, and attract only a thin coating at the apex, so no matter how many coats you apply, surface coating breakdown will be likely here.



Gabriel Ash, architect. Kensington House bathroom. All plywood, Bote-Cote Epoxy sealing, Aquacote paint. Gabriel is also considering using BoteCote's Cop r Bote antifoul to make mock 'copper sheeting' over plywood ... sanded to expose the raw copper as for anti foul purposes, it will achieve the green verdigris of classical European buildings out in the weather, over time, making it a very low cost, lightweight, durable and easily repaired 'copper panel'.

"The bathroom is an inside out boat, when you think about it. If it's good on a boat, it will be brilliant in the bathroom. These are products with a great potential" – Gabriel Ash.

If the smoothness of your sanded Bote-Cote epoxy sealed surface is unacceptable, then a buildup up of the easily sanded lower cost water based 1:1 mix Aquacote Hi Build Epoxy Primer will be indicated.

Measure out and mix the primer thoroughly. We let it stand for 10 minutes or so before application. We use short nap mohair roller sleeves, building up coats wet on wet until the build up completely fills the surface imperfections. Let cure. About a half day in very hot conditions, one day cool to warm, and possibly two days in very cold conditions.

Then sand your surfaces as smooth as possible, finishing off with say 180-240 grit with a random orbit sander, with an interface foam pad and positive dust extraction. The 'braille' test is useful.

Wash the prepared surface with clean fresh water. Let dry. If you towel it off to hasten the drying process, be sure to check for lint residue.

Aquacote Topcoat Painting Preparation

Stir carefully, (the BoatCraft large tongue depressors are good for this, clean too!) making sure that no pigment residue is left on the bottom of the can.

Decant a quantity into about $\frac{2}{3}$ fill a clean baked bean or dog food can. Add cross linker as per instructions on can.

Cross Linker

Cross linker is what gives Aquacote is legendary hardness, during the surface drying process.

The cross linker goes to 'sleep' in the mix after about four hours, after using a mix for more than three



John Holthouse Kit Shearwater hull.
Red 318, Off White, Black Bootstripe. NICE work, John!



Alan Carson used a hair brush to apply his AquaCote Clear over Bote-Cote on his concours kit Guillemot. Note the reflection near the mudguard!

hours you MUST add another measured amount of cross linker to your working can of paint.

Because the cross linker goes to 'sleep' its fine to pour any surplus from your job it back into the original body of paint. Use it again the next day, and all the days after that.

Note: Excess cross linker causes no harm.

Thinning (Adding clean water!)

Add water as suggested below.

On days of high humidity, and 15° and below I'd probably not add any water. I'd be prepared to be patient about cure/touch dry times as well.

On days of about 20, 24° with low humidity I add about 5% water to the paint I'm about to use.

If it's much hotter I add about 10%. Helps keep the wet edge longer.

Aquacote Polyurethane Top Coat Application

This is fabulous paint to use in a wide range of conditions. In hot weather, you can sand between coats sometimes within 20 minutes of application. This fast cure also prevents the suicide bomber insects from getting involved, and means that ambient dust is barely an issue.

Paint Trays

I don't use them!

The Aquacote splashes on the side of the tray may set and the resulting skin will drop back into the paint body, giving the effect of blobs on the brushes and roller sleeves, and thoroughly spoiling your surface. (This has also caused problems when using spray painting equipment).

Have a bundle of scrap plywood or other more or less clean pieces about 200, 300 square, and pour from your tin onto them, and charge your rollers and brushes from there. Works a treat, means you can't overload your roller or brush and keeps you on your toes(!)



The toughest, lightest coolest accordion case in the world?



George Sutherlands' magnificent kit built Fulmar.. First time AquaCote user.

You can use the garboard or bottom board of the boat you are painting as a sump, works brilliantly. This is the method on the new Armfield's glued clinker plywood St Ayles Skiff.

For the sheer plank British Racing Green application, they used the ply palette, as you will see Andrew is using in the picture on page 34.

In cooler or moister conditions cure may be slower, but touch dry will come surprisingly quickly.

When painting clinker plywood hulls, we suggest using a 25mm foam brush to paint into awkward spaces where a roller won't easily go, such as under the plank lands. It's good to have a helper painting along before you, with the foam brush.

Then, as she or he gets ahead of you, get them to drop back and check where you have been for any runs, lightly smoothing them along the run with the tip of the foam brush. You'll find that by the time you have been around the boat once, the first areas will be touch dry. You may also see shadowing through your first thin coat. Don't worry about it. Subsequent easily applied coats will fix that.

Provided that you don't leave the work for more than 4 hours, no sanding is required between coats.

Rinse brushes and rollers under a fast flowing tap, then store in clean water.

Have a cup of tea.

Now go over your work, lightly wiping the surface with a green scourer to smooth any nibs or wayward insects off.

Go lightly with the scourer, especially on any acute edges. Dry your rollers and brushes carefully. Too wet, and drips may become runs ...

Recoat again, and again, as the shadowing dictates. Once you are happy that you have good cover, leave for an hour or so. Smooth the surface again



Armfield's Slip, kit St Ayles Skiff sheer plank. Incidentally this can had been partly used, then sat on my shelf for about 10 years! Worked a treat. Note: Andrew is using the scrap ply palette to load his Unipro Mohair blend HDHD75 roller sleeve, which you can find in Bunnings OR much cheaper from BoatCraft Pacific agents around Australia. This is also by far the best epoxy resin roller sleeve I've ever used. Doesn't seem to break down even with prolonged use. May be washed out with white vinegar if using epoxy resin.

using fine paper (say 240 grit) on a soft rubber pad. Wash resulting dust off with liberal water and rags.

Once you are satisfied that have 100% opacity; ie NO shadowing mix a new batch of paint, but his time add an equal volume of clean water.

Apply with a wider foam brush. You will get the hang of it pretty quickly. Work quickly and thoroughly, taking care to leave no 'holidays', or runs. After waiting for each coat to be touch dry, you may do this a couple of times.

Stand back and admire your good work.

You WILL have gloss! Not only that, it seems to get shinier in the ensuing days.

No idea how that happens, but it does. And tough as old boots as well.



Clive's big river cruiser. Aquacote Blue 412 and AquaCote Off White above.

Armfield's Slip

The Armfield's Slip Mob, here in Goolwa, have done a great job with their kit build, Iain Oughtred designed St Ayles Skiff.

They were VERY sceptical about this 'water based polyurethane stuff', and I expected an uphill battle to get them aboard with this one. So I offered to come down and do a demo.

There was a good roll up, always is, when the sneaky feeling is that this might be a stuff up.

I only stayed for about 20 minutes. Once I saw how they did the masking up, and then got going with the roller and foam brush, a team of two down each side, I could see they were doing a cracker job. I informed them that they were now on their own, and I'd be back in a 90 minutes and they'd have the first two coats on in that time.

I came back in a little under that, to find them all having morning tea, and a gleaming hull behind them.

Initial scepticism had been quickly replaced by the ease of application, speed of cure on what was a cool day, the fact that they still had saws and thicknessers running, and yet the finish was just fine. The 6m hull was fully painted in four hours, including masking time and the two coats of British Racing Green on the sheer plank.

And, best of all, no stink!

Nice one, team!

These first time Aquacote painters in my, and the unanimous opinion of the steady stream of visitors that morning, had produced a wonderful result in two colours on a 6m hull in just four hours.

During the morning calls went out to friends and associates to come and 'see how this Australian made Aquacote stuff works!'

The last I heard, a decision had been made to finish their signature 'raffle boat' with Aquacote products (another of Iain Oughtred's designs, 'Guillemot') which has been the major fund raiser centrepiece of Armfield's slip for for the past two decades.

Several major projects round Goolwa have picked up Bote-Cote AND Aquacote as a result of the Armfield experience.

Clive Harris' substantial 10m medium draft power cruiser restoration in Goolwa is one of those.

Clive was one who came round to have a look at the St Ayles Aquacote paint job in progress, and at the finish.

And there are so many others.

Bote-Cote Epoxy Resin Systems, and the Aquacote range of finishes are now proudly commended, supplied and very successfully used by almost all of our kit building clients.



Damian Devlin with the Taroona Community Kit St Ayles Skiff, prior to final coat.

Damian Devlin at the Taroona Community School St Ayles Skiff building project in Tasmania had also decided to use Bote-Cote products, and Aquacote paints.

Since they are first time builders, I'd offered, with support from BoatCraft Pacific to travel down and help them with the painting, as I did with the St Ayles that the Armfield's slip crew in Goolwa are doing such a fine job with.

Damian informed me that he had decided to save me the trip, and with the Cross Linker and 5% water stirred in they were already painting!

I was concerned.

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Specifics

To my surprise, workshop environments, cold, hot, humid, dry, even dusty seem to have little effect. Armfield's had saws and thicknessers running 4m away from our painting. No problem. Touch dry times alter, runs may be more prevalent in cold and humid conditions.

We are continually grateful for and impressed by the community of knowledge that is coming from individual painters, from the cold and humid of Tasmania, to 50° and crispy dry in direct sun of summer in Adelaide.

Please let us know what works (and doesn't) for you. If you do get flummoxed, please call. We can even stay on the phone while you get back in the (painting) saddle.

Most of our builders have used foam brushes for the lands, and 75mm Unipro Mohair blend (HDHO75) roller sleeves on the same roller frames that we use for epoxy application for the major flat areas.

These same roller sleeves are also fabulous for epoxy application, MUCH better than the neoprene or other foam sleeves that we have all used for so long. And they don't fall apart, even after eight hours of rolling epoxy or paint. Though there are some other white fine foam roller sleeves that may be worth trying. Unipro make these too.

On Ali's accordion case I used the major flat face of the top and bottom lid as the palette, foam brushes, exclusively, and about 10% water to prevent curing streaks, and to hold a good wet edge. It took three coats to get the cover I wanted. I waited about 10 minutes between coats. The final coat was 50% water.

The ultimate test: "Gorgeous!"



Grant Flanagan's 'Trim' was roller painted with Off White Aquacote two years ago, and has Aquacote Clear over Bote-Cote epoxy resin on the main hatch, which has also been in the sun for two years. 'Trim's' cockpit floor is 'Sand' TredGrip, also from BoatCraft Pacific.

I knew the humidity was 60%, temperature at 15° - 18°, and a 50km breeze blowing around the shed. I thought that the paint might go off too slowly, that they'd have runs and it might all end in tears.

The portents were not good.

I need not have worried.

Two hours later Damian said it had gone really well. Even in those conditions the paint was touch dry in 20 minutes, and while another coat was called for, it looked great already and they were now all really confident with the product.

It was easy to use, cured quickly even in our chilly Tasmanian conditions and no thinners to stink us out!

I've been finishing a new piano accordion case for my wife Ali. It's Bote-Cote epoxy sealed and glued together of course. With its Aquacote Red 318 finish and a 50mm foam brush it was all painted and cured in about an hour, in about 20°C, moderate humidity and wind. Painted outside, just by the chook yard. Touch dry in 20 minutes.

Which is when Bruce Kronborg dropped in.

After close inspection of the accordion case, and an invitation to try and scratch it, he's decided to paint his kit Tammie Norrie 15 in Aquacote, as soon as he finishes fairing his epoxy surfaces.

Marcel Keivits Kit built Iain Oughtred MacGregor Sailing Canoe ACT

Recent Aquacote Honor Roll

- Dr Bruce McConkey, for dreaming it up in the first place. (Qld)
- Geoff Taylor, for not quitting! (Qld)
- Ian Phillips and BoatCraft Pacific, keeping the flame alive. (Qld)
- George Sullivan Fulmar Dinghy Kit – Off White (Vic)
- John Holthouse Shearwater Dinghy Kit – Off White, Grey, Red 318 (NSW)
- Paul Cleaver Tirrik Double Ender Kit – Off White, Sand, Clear (SA)
- Armfield's Slip Crew St Ayles Skiff Kit – Off White, British Racing Green, Clear (SA)
- Clive and Janne Harris, Heavy Cruiser restoration, Goolwa (SA)
- Marcel Kievits (two!) MacGregor Kits – Black, Clear, White (ACT)
- Ron Watson, and Barb, Jarcat, Stansbury – Yellow (SA)
- Damian Devlin Taroon Community, St Ayles Skiff Kit – Off White, Clear. (TAS)
- Alan Carson Guillemot Kit – Clear, conventional brush (WA)
- Award winning Architect Gabriel Ash. Kensington Park House bathroom – Royal Blue, Off White (SA)
- Gary Adam heavy 12.2m River Cruiser restoration (SA)
- Gail Dawson and Bill Trenow NIS 31 – Off White (WA)
- Kel Gowans, NIS 35 – Navy Blue (NSW)
- James Dyer, 16ft Clinker Ski Boat, Clear Deck – Aquacote Clear (SA)

All these builders are recent Bote-Cote/Aquacote enthusiasts, and have kindly provided unique and extremely valuable thoughts, criticisms, photographs and ongoing advice on the application and potentials of all the BoatCraft products, in real life situations, over many years.

There are of course there are many others who have contributed so much over the years, for whom we don't have the room here.

We thank all of you.

Want to know more? Want a full colour reprint copy of this article? Contact Boatcraft Pacific, BoatCraft Pacific agents, or this writer.

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NEXT ISSUE: Using Aquacote on aluminium, over older paint surfaces, over raw timber, polyester and more.



Ron Watson Jar Cat AquaCote Yellow six years old. Roller application. Stansbury SA.



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