



Cleanliness is Next to Godliness, Part 2

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Last week, we wrote about this topic with respect largely to the things we drop in the water (*see SSP, "Cleanliness is Next to Godliness", 12/5/12.*) But what about the things we bring out there, like our copper-oxide bottom paint? This column is about that.

Painting With Poison

Yes, if you really think about it, we paint the bottoms of our boats with poison. Intentionally. We're trying to kill barnacles, algae, slime and other stowaways who can clog our intake valves, foul our running gear and, as a consequence, actually create another bio-hazard as we have to apply more power (meaning burning more fuel and creating more exhaust) to move the boat at a given speed. So, our intentions are not necessarily ignoble – but if we start to address some of the collateral damage, we can make them noble.

The history of the War of the Barnacles goes back to the Phoenicians. They used many substances – including lead and tar – to battle the speed-killing and weight-adding stowaways. It wasn't until the Romans realized that shields of battle work at sea too – and shielded their ships with copper sheathing – that something effective began to turn the battle in favor of the mariners. This technique lasted for millennia. History tells us that Nelson had an inherent 20% speed advantage over the Spaniards at the Battle of Trafalgar because of copper sheathing.

A lot of dangerous things don't reach the tipping point until there is a lot of something acting on the environment. By the 1950s, boating had begun to be popular enough that scientists started to notice that shellfish were being affected by these bottom paints. This started the process that a half-century later is showing up in various alternatives.



Two Pounds a Year

A 30' boat, painted with copper-oxide anti-fouling paint, leaches two pounds of copper into the waterways. Now, before you dry-dock your boat, scientists note that Nature naturally leaches 250,000 tons of copper into the sea each year – compared to the ~15,000 tons that all the sea-going vessels add. But the ocean is one thing – a marina with 100 vessels closely packed is another. And that is the rub, so to speak.

States and municipalities are starting to notice and are taking action in two ways – restricting boat owners from using certain bottom paint mixtures and keeping marina owners from draining their waste water into the sea. Connecticut banned marina owners from doing so last year, requiring them to collect the water and bring it to a treatment plant. Sounds expensive, which just ends up in dockage fees or, worse, fees so high that boaters start to drop out... Eventually, the Feds will bring a suit under the Clean Water Act and then the game is afoot.

But the regulators aren't just throwing (your) money at the problem. They are sponsoring "bake-offs" where boat owners and paint companies can try different formulas to address the issue. San Diego both passed a law that requires the amount of copper

pollution in the Port of San Diego to be reduced by 75% in 15 years – and has created test beds for various formulas. And they have found that not only are different chemicals effective (such as zinc) but also paints can be made more "slick" so those stowaways can grab a toe-hold (or whatever they hold on with!)

The paint companies haven't sat on their hands and have developed a number of alternatives – but getting approval from the EPA to add a chemical to the equation takes considerable time too. Will the solutions cost more? They already do and they will continue too. Not sure there is any way around that one...

A Primer of Sorts

There is a lot of material out there and you can always discuss it with your dock master, who is certainly interested in the health of our waterways. The largest anti-fouling paint company, InterLux, maintains a lot of material online (www.yachtpaint.com.)

For the more scientifically inclined, the stowaways are not attaching to our boats for a ride. They attach to eat. When you put anything in water, tiny electrical charges develop. This was discovered by Johannes van der Waals 1873 (getting the Nobel Prize in 1910.) Via the "van der Waals" force, free-floating objects are attracted to the surface of that object. In waterways, these objects are decaying matter – a very attractive food source to our stowaways. The table is set. All it needs is hungry guests, which Mother Nature serves up readily.

BTW, if you are interested in being part of USCG Forces, email me at JoinUSCGAux@aol.com or go direct to the D1SR Human Resources department, who are in charge of new members matters, at DSO-HR and we will help you "get in this thing..."

Carmans River Watershed Preservation Approved

A key parcel of land located within the Carmans River watershed was approved for acquisition at last Tuesday's Suffolk County Legislative meeting in Hauppauge. The property owner, New Hope Revival Church, approached Legislator Kate Browning in 2011 as a willing seller after attempts to build a house of worship on the sensitive land were delayed. Legislator Browning and Councilwoman Connie Kepert (D-Middle Island) worked together to secure a partnership between Suffolk County and Brookhaven Town to purchase the 12.75 acre property.

The 12.75 acre parcel is located at the headwaters of Yaphank Creek, which is the largest tributary to the Carmans River, and is directly across from the Wertheim National Wildlife Refuge. Community residents have been advocating for the preservation of the property for years.

"This is another important piece to the larger puzzle of protecting the Carmans River," stated Legislator Kate Browning. "It is a great example of the town and county working together for the betterment of the environment and surrounding community."

"This purchase of environmentally sensitive land is a wonderful way to close out 2012," stated Marty Van Lith, Brookhaven Hamlet Historian. "It is located directly



adjacent to the Wertheim National Wildlife Refuge in the headwaters of the still pristine Yaphank Creek, the largest tributary to the Carmans River. Congratulations to Kate and Connie for saving this ecologically valuable treasure."

The purchase is being paid for through a partnership between Brookhaven Town and Suffolk County. The county is contributing 75 percent and the town is covering the remaining 25 percent. The total purchase price is \$630,000.

"Protecting the Carmans River and the surrounding watershed area has been a priority of mine since my days as a civic leader," stated Councilwoman Kepert. "As elected officials, it is our job to preserve this wonderful natural resource that is an asset to our town and region. I am especially pleased

that the Town of Brookhaven and Suffolk County share this goal of preserving vitality of the Carmans River and have joined forces to invest in this valuable parcel which will be enjoyed by generations to come."

Suffolk County has aggressively pursued the preservation of land in the Carmans River watershed as well as other nearby waterways including Beaver Dam Creek. With dwindling funds for the program every purchase is a victory for Brookhaven Hamlet and the third legislative district will continue to be a priority.

"By far, the most effective and least expensive way to protect the Carmans River is to preserve the watershed. This type of land purchase is exactly what the public wanted when they overwhelmingly

supported the county program to buy and preserve land. Preserving this river is a legacy that will always be cherished," said Adrienne Esposito, Executive Director of Citizens Campaign for the Environment. "A giant congratulations to Legislator Browning and Councilwoman Kepert on this purchase!"

"Friends of Wertheim thanks Legislator Browning and Councilwoman Kepert for making this happen," stated Clair Goad, Friends of Wertheim. "It is a big step forward in helping to protect not only the Carmans River, but also Yaphank Creek and Little Neck Run. Our hope is that the Carmans River Watershed Plan will soon be adopted to help us protect the entire river."

"We are so delighted to know that this environmentally sensitive land in the Carmans River watershed is now protected," stated Tom Williams, Post-Morrow Foundation, & Co-Chair of Carmans River Partnership. "These 12.5 acres will enhance the ecosystem along the river that now supports the recent return of a nesting Bald Eagle family, the first seen here in recent memory. Congratulations and thanks to Kate Browning and Connie Kepert for protecting this beautiful river."

Suffolk County will need to conduct a final survey and the property should be closed on in early 2013.