



Dealing With Mold

Paul Esterle has been building or repairing watercraft, of all descriptions, for longer than he cares to admit, from hovercraft to power and sail boats. Paul specializes in boat improvement and repair projects utilizing wood, epoxy, and fiberglass. If you have any questions about your boat project, contact Paul at pesterle@comcast.net.

by Paul W. Esterle

My daughter and I are in the process of restoring an older fiberglass boat, *Daydream*, for her use. One of the first things I found aboard was mold as well as mold and mildew stains in the interior. The old tarps that had covered *Daydream* when we first acquired her leaked and the wet environment was perfect for mold and mildew growth. A new tarp has eliminated the source of moisture aboard and *Daydream* has dried out.

Knowing that breathing mold spores isn't a particularly good idea, both my daughter and I wore respirators while working aboard. These allowed us to keep working safely on stripping the interior while researching mold remediation procedures. Unfortunately, by the time we decided on a course of action, the weather had turned cold, limiting work aboard *Daydream*.

I started my search for mold remediation options on the Internet. Thanks largely to hurricanes Katrina and Rita, there is quite a bit of information about mold remediation available on the web. While much of it is focused on mold in homes, the information is also useful in remediating mold in boats. The EPA has the booklets "A Brief Guide to Mold, Moisture, and Your Home" and "Mold Remediation in Schools and Commercial Buildings" available for free downloading on their web site at: <http://www.epa.gov/mold>.

That site also has a great deal of other information available, including a Mold Resource page. That page has basic information, an introduction to molds, an online mold course and a list of related links.

The Centers for Disease Control (CDC) also has a section of their Web site devoted to mold, its effects and remediation. A section of Frequently Asked Questions (FAQs) can be found at: <http://www.cdc.gov/mold/faqs.htm>

So what's the big deal about mold? Well, mold spores can trigger asthma attacks or allergic reaction in persons exposed to them, especially the young and the old. Some mold spores produce toxins that are also dangerous. Long term exposure to mold spores can cause health problems in healthy people. Mold has even been known to cause lung infections. In short, it's not a pleasant thing to live with.

Mold remediation involves killing the active mold colonies, disinfecting and cleaning the affected surfaces and preventing reoccurrences of the mold infestation. This, of course, is after the source of moisture has been eliminated. On a boat, that usually means sealing the leaks and keeping the interior dry. Once that is done, the mold colonies are killed, the surfaces cleaned and then sealed or protected from future mold infestations. Be sure to wear appropriate personal protection while doing this remediation. This means gloves, eye



The mold solution activated and ready; v-berth, here we come!

protection and a respirator rated at N-95 or above.

One often-used solution for killing the mold is common household chlorine bleach, mixed with no more than one cup of bleach to each gallon of water.† Surfaces are wiped down or scrubbed with the bleach solution and then rinsed with water and dried.

Another solution often used is hydrogen peroxide. This isn't the common 3% solution found in most drug stores, rather it is anywhere from a 10% to 35% strength solution, depending on the source doing the recommending. Hydrogen peroxide of this strength is harder to find; try beauty supply companies or swimming pool chemical suppliers.

A third method is to use one of the numerous proprietary chemicals on the market for mold remediation. Many of these contain chemicals to kill the mold, additives to aid in stain removal and cleaning and other additives to prevent mold regrowth. After looking at a number of these products, I selected one called Mold Avenger, largely based on the recommendations of friends who had successfully used it (<http://www.dtep.com/moldavenger.htm>). To quote their web site:

"Mold Avenger is the cost-effective solution to remove mold and mildew and prepare a surface to be painted. Mold Avenger performs multiple functions simultaneously, and takes less time to mix and apply than inferior bleach-based products. Mold Avenger is harmless to plants and animals and is safe for you. Mold Avenger has a residual effect which saves the expense of having to treat an area more than once. In just one application, Mold Avenger can clean, remove mold, mildew, and organic growth, abate odors, and neutralize PH. Mold Avenger is the best way to make sure a surface is clean and free of organic growth before painting."

Mold Avenger comes as a dry powder in a spray bottle. Just prior to use, water is added to the bottle to dissolve the powder. After mixing, I sprayed the mixture on all the interior surfaces of *Daydream* affected by the mold. After letting

it set for an hour or so, I started scrubbing the surfaces to clean up the mold residue and stains.

This is the point at which I really appreciated the benign character of the solution. Lying on my back in the V-berth scrubbing the overhead was no place to have a bleach solution or concentrated hydrogen peroxide running down my arms and dripping on my head. I did appreciate my goggles, hat and gloves, though.

The Mold Avenger did its job well (although I hate to sound like a commercial for the product.) It removed the stains and, after a freshwater rinse, left the surfaces ready for refinishing. Some of those surfaces will be painted, such as the overhead and the V-berth and settee berth tops. Others, such as some of the veneered plywood bulkheads and cabinets will be covered with almond Formica laminate.

I have found that the laminate is a quick,



For safety's sake, wear an appropriate respirator when dealing with mold.

cost-effective method for refinishing many flat surfaces aboard a boat. The veneered plywood in question is sun-bleached and/or water-stained. As such, it couldn't be brought back to a presentable shape without extensive sanding and staining. After a quick sanding with 80-grit sandpaper, I can contact cement a piece of laminate in place. The result is a waterproof surface that lightens up the boat interior and is extremely easy to clean.

The insides of the storage areas and cabinets will be painted with white Interlux Bilgekote paint. I have painted the storage and bilge areas of all my boats. It seems to seal off any remaining "boat smell" and makes the boat smell almost new again. The fresh white paint makes the compartments easier to clean and easier to find things.