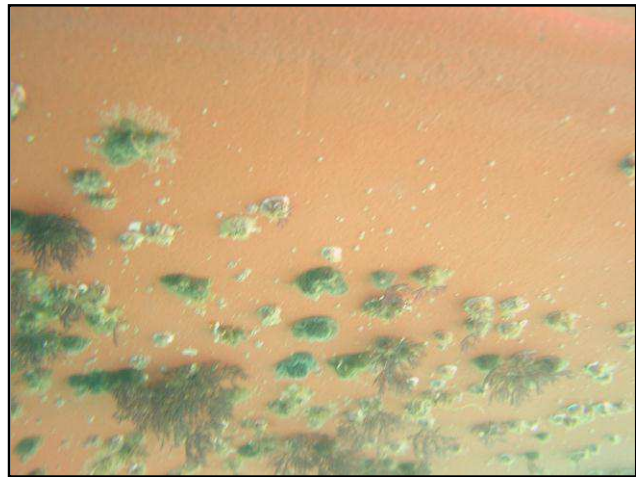


Do-It-Yourself Bottom Cleaning

Our first experience with cleaning the bottom of *¿Qué Tal?*, our Tayana 37, was pretty bad. Just a month after leaving the marina and beginning cruising, Dave and I did almost everything wrong, starting with not recognizing the signs of a seriously fouled prop and ending with almost not getting back on board because our swim ladder was too short. In between, we exhausted ourselves and became shark bait from barnacle cuts. We learned a lot that day . . . the hard way. And we've discovered that cleaning the bottom isn't so horrible, once you know a few things.

Signs the Bottom Needs Cleaning

"Look at the waterline and see if there's growth!" Unfortunately, this isn't always reliable. Where we are, oftentimes there isn't much growth for the first 6 to 12 inches below the water. This is especially true if you've extended the bottom paint above the waterline to form a boot stripe (see sidebar). Unless the water is exceptionally clear, you won't see growth on the prop from the dinghy or dock, as the prop will maintain approximately the same outline until the growth is severe. To really check, you have to put on a snorkel mask and look under the hull.



In this photo, taken in the Sea of Cortez, the growth begins at the turn of bilge and can't easily be seen from the surface.

In tropical waters, we've found that the bottom needs cleaning at least once a month, more often in the summer or in "nutritionally rich" harbors or areas with agricultural runoff. The exact frequency will depend on your paint and your location.

If the growth is sufficiently bad, you'll see operating problems:

- o depthsounder behaving erratically – often the first symptom, as you can't use bottom paint on most transducers and thus growth is worst here
- o slower speed than expected for the conditions
- o engine running hotter than normal
- o inability to develop normal RPM, even with full throttle – making you think you have a problem with a clogged fuel filter (this is particularly a symptom of a badly fouled prop)

The Tools

Before just jumping over the side, let's look at what you'll need. You don't *need* SCUBA gear or a hookah, but free diving takes longer and is much more tiring. After cleaning the bottom twice with just snorkel gear, we bought a hookah and have never regretted it. You definitely need at least a mask so you can see what you are doing and fins sure help – particularly if you're free diving.

If you are free diving, using a few dive weights – enough to make you less buoyant but not sinking – will make the job easier as you won't use so much of your energy (and air) just to stay under. You also won't be as likely to scrape your head and shoulders on the hull and accumulated barnacles.

We have hard antifouling paint and our basic tools include:

- o a metal 6" putty knife and a 4" wide piece of plexiglass for scraping large surfaces.
- o a 1" putty knife for cleaning the prop and shaft as well as tighter areas– a plastic putty knife is less likely to scrape the bronze propeller, but will wear away with use. We have to replace it every 3 or 4 cleanings.
- o a flat screwdriver to get inside thru-hulls.



Some boats also find an old carpet scrap and a small wire brush helpful. Boats with ablative paint generally substitute a soft rag or brush for the large scrapers.

A suction cup handle to keep you in one place is useful when you are cleaning a small, fussy area such as the propeller, but not absolutely necessary. It is less useful when cleaning large areas of the hull and keel.

Tie 3 feet of light line to each of the tools and the handle of the suction cup – you'll tie the other end of each around your wrist before getting in the water with it. That way, when (not if) you drop it, you'll be able to easily retrieve the item. While it's a nuisance to retrieve a tool when you're anchored in 10 feet of water over white sand with good visibility, it becomes nearly impossible if the water's murky, deep or the bottom dark and soft.

A big item to plan for: how will you get back aboard? A boarding ladder needs to reach at least one, preferably two, steps below the water for most of us to use it. Alternatively, you may be able to get into your dinghy and then get aboard your boat. This was our single biggest problem in our first bottom cleaning expedition – we put the boarding ladder over, then both jumped in. The dinghy was on deck, stowed for passage. It was only after we'd worked on the bottom for an hour that we discovered that the bottom step of the ladder was an inch above the water. Feeling stupid, we swam to a nearby boat and asked if we could not only come aboard using their swim platform, but also get a ride to our boat. A new ladder suddenly became our number one must-buy item!

“What Should I Wear, Dear?”

Not as frivolous a question as it sounds. Cover as much of your skin as possible, otherwise every time you brush against an uncleaned area of the hull you'll be cut by any barnacles there (see

sidebar). And because of those barnacles, you really don't want to wear your brand-new wet suit and possibly slice it to ribbons. Ablative paint is also likely to get all over whatever you wear.

On that same ill-fated first attempt at cleaning our prop, Dave and I wore nothing but our swimsuits. Our legs, arms and shoulders were covered with little cuts from each time we'd hit against the boat. Worst were our hands. Since we didn't have a handle, we kept grabbing the barnacle-encrusted prop to keep us in place. Not a good idea without gloves!

If the water is warm, an old Lycra dive skin or a loose pair of pants and a long-sleeve t-shirt will work. Consider this sacrificial clothing that may get cut instead of your skin. If it's colder, wear your wetsuit, but put the sacrificial clothing over it. We like to wear a Lycra dive hood to keep stuff we've scraped off the hull out of our hair. Cheap jersey gloves work well to protect your hands.

A Couple of Safety Items

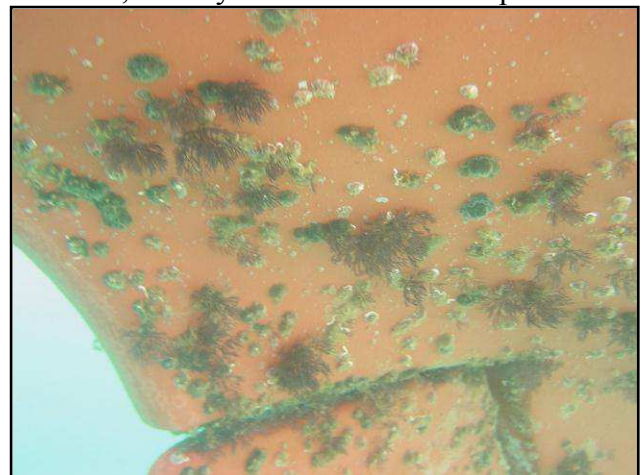
So now you're finally ready to "jump in and give her a scrub," right? Well, almost. Pick a time when there is slack current and little wave or swell action. If there is any current – or it's likely to increase before the job is done – tie a safety line off the stern to grab onto if you get can't make it back to the ladder. I've seen professional divers tie lines from stanchions and then use them to keep themselves in place when working in stronger current. To keep your hands free, tie your end of the line around your waist.

Most of us aren't used to doing a lot of activity underwater. Don't overtire yourself or allow yourself to get chilled (even "really hot" 90° water is cooler than your body temperature). Break the job into shorter sessions, spread over several days. This is even more true if you are free diving – set a time limit and stick to it. I know of a couple of boats that free dive to clean, and they work for only 10 to 15 minutes at a time, but do a little almost every day.

The Actual Cleaning

Al Winn of *Spirit*, a CT 41 ketch, uses ablative bottom paint and works hard to be gentle on the paint. He begins with a soft brush and rubs it over the hull and keel to remove the soft growth and slime. "While this takes some paint off and I see a little cloud in the water, it's a lot better than using a scrubby pad like so many professional divers do," he says. He then uses a 1" plastic putty knife to carefully flick off barnacles individually, not to scrape in large sweeps. Although the plastic knife wears away and has to be replaced almost every cleaning, Winn says that "a metal putty knife just removes too much paint."

On *¿Qué Tal?*, we have hard modified epoxy bottom paint and aren't so careful with the bottom paint when cleaning. We start by using



With this many barnacles and hard bottom paint, we don't bother to first get the soft growth off, as we'll have to scrape it all to get the barnacles.

the wide scrapers – Dave prefers the piece of plexiglass and I the 6” metal putty knife. We’re not trying to do a perfect job at this point, just get the big areas done. Some cruisers who have more soft growth than barnacles begin with rubbing a carpet scrap over the hull to get the soft growth off, then go back with a putty knife to get the barnacles.

Once an area is free of most of the growth, we go back with a 1” plastic putty knife and get the picky little parts, such as around transducers. If working on one area for a while, it may be helpful to use a suction handle to hold yourself in place.

Regardless of the type of paint, if you start near the waterline and work down, you’ll be less likely to scrape your head or shoulders on barnacles as you ascend.

For some reason, barnacles seem to really like to grow up inside thru-hulls, and have to be scraped out with a screwdriver. This has to be done carefully so that you don’t chip your bottom paint off the thru-hull (see sidebar on preventing this).

The propeller and rudder take more time and attention. There are plenty of hard to reach surfaces here! We use plastic putty knives on the prop to avoid scratching the bronze and also because the plastic flexes some and conforms better to the shape of the prop blades. Other cruisers, citing the heavier growth on the prop, go ahead and use a metal putty knife. In either case, a 1” width is best. For very tight areas, a small wire brush (about the size of a toothbrush) can work well.

Be sure to thoroughly clean the little openings between the rudder and skeg or keel, and any other areas where one surface moves against another – the “hinge” areas of the rudder assembly and a feathering prop, if you have one. The cleaner you keep these areas, the freer the parts will move. Also, any barnacles caught between two moving surfaces will grind away at them, requiring expensive repairs.

While you’re working on the prop, grasp the shaft and see if there is any play in it. If there’s more than 1/16” it’s time to think about replacing the cutless bearing. Also, check to make sure that there is no fishing line caught around the shaft. If there is, you’re likely to have to cut it away with a knife. Removing a line may disturb the packing around the shaft. Once back aboard, check the packing gland for drips and tighten it if necessary.



The prop and rudder area has lots of fussy spaces to clean, both to improve performance and to prevent expensive repairs.

Finally, check all your zincs. Any that are more than half gone should be replaced. A little cotton ditty bag is useful for carrying the zinc and tools so that nothing gets lost. But just in case, carry spares of whatever bolts and nuts hold your zincs on.

Once back aboard, rinse all your tools and dive gear off with fresh water and spray any metal surfaces with WD-40, Boeshield or a similar protectant.

You're done! Enjoy that extra half-knot (or more) of speed on tomorrow's sail!

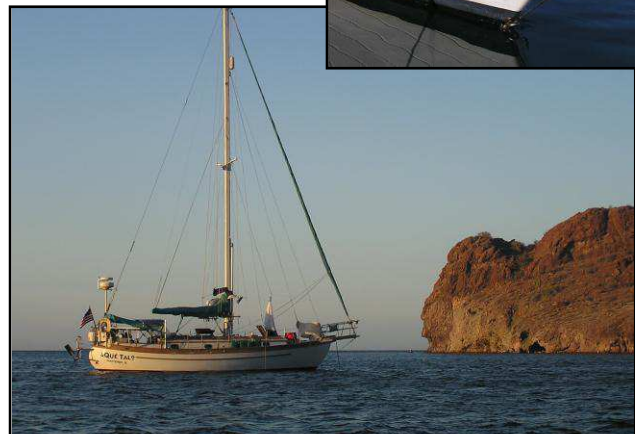
Sidebar: Keeping Bottom Paint on Your Thru-Hulls

Keeping your thru-hulls covered with bottom paint can be difficult. Water flowing in or out of the thru-hull wears the paint away and bottom paint generally doesn't stick to the metal as well as it does to the rest of the hull. Each time you clean, the paint will chip further back from the opening and the problem gets worse and worse. Alejandro Abaroa, general manager of his family's boatyard at Marina del Palmar in La Paz, Mexico offered a solution that is working well on *¿Qué Tal?*. "First we sand metal thru-hulls back to bare metal. Then we cover the area with slow-cure West Systems epoxy with no additives. Before the epoxy cures, we apply bottom paint to the area. As the epoxy cures, it binds the bottom paint to the thru-hull and there is far less of a problem with barnacles over the life of the paint job," Abaroa explained. Since we were having similar problems with bottom paint chipping off the metal housing for our cutless bearing and the attachment points for the rudder stock, Abaroa recommended they do the same there.



Sidebar: A Boot Stripe of Bottom Paint

The problem with having your bottom paint extend only to the waterline is two-fold: first, most of us load the boat beyond the design specifications and thus the "waterline" is actually an inch or more below the water surface. Second, even if you raise the waterline, a boat at anchor never sits perfectly level and water continually laps above the bottom paint. Soon, your boot stripe is growing a moustache and when you clean it, you're



At a distance, a boot stripe of bottom paint is indistinguishable from a more traditional one. Up close, it still looks good -- better than growing a moustache!

scraping away at the gel coat or topsides paint. Ouch!!

A good solution that we see more and more boats doing is to cover the entire boot stripe area with bottom paint, in effect making a boot stripe of whatever color your bottom paint is. We did this on *¿Qué Tal?* two years ago and it has been very satisfactory.

The procedure for doing this is the same as for raising the waterline – tape the new line, sand the surface to rough it up, apply an epoxy barrier coat and then the bottom paint. If you have grooves etched in the hull to resemble wood planks, like *¿Qué Tal?* does, you'll also have to fill them in with thickened epoxy and sand it fair before applying the barrier coat and bottom paint.

Sidebar: Dealing with Barnacle Cuts

Barnacle cuts can be nasty. We've heard stories that little chunks of barnacles can continue to live under your skin; I don't know if it's true or not and I prefer not to find out first hand. I do know that barnacle cuts definitely have a tendency to get infected. Thus, it's important to treat them promptly and thoroughly. Don't assume that they'll heal up if left alone. I'm not a doctor, but here is what we do:

1. Scrub out all the little barnacle particles from any cuts, using lots of fresh water and an old toothbrush. Even if you don't see any pieces, don't skip this step. It hurts a lot less to scrub the cuts out than to get an infection!
2. Pour hydrogen peroxide generously over the cuts to help bubble any microscopic particles out.
3. Use a cotton ball soaked in bleach and wipe over the cut areas. In theory, this will kill any still living pieces of barnacle.
4. Liberally cover the area with antibiotic ointment and bandage if necessary to keep the ointment in place. If needed, use Steri-Strips or butterfly bandages to close larger cuts.
5. Apply more antibiotic ointment several times a day. We keep the ointment on the counter in the head, which serves as a reminder to put more on whenever we're in there.
6. Monitor the cut areas. If you discover areas with little "bumps" under the skin, there are still barnacle particles trapped. Begin again at step 1 and scrub the bumpy areas well, then repeat the rest of the treatment.
7. If you develop a fever or other signs of an infection, seek medical treatment if possible. If not, begin taking oral antibiotics.

The best strategy, of course, is to wear plenty of protective clothing and not get cut in the first place!