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# Clean Boating Tip Sheet: Vessel Cleaning and Maintenance

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## Clean Boating Tip Sheet

# Vessel Cleaning and Maintenance

As a boater, you are well aware of the care your vessel requires. In order to keep your boat safe, reliable, and attractive, you must clean and maintain it. Caution is necessary because your choice of products and activities can have serious impacts on water quality and aquatic life. For example, detergents can strip natural oils from fish gills, limiting their ability to breathe. You can keep your vessel in top form while minimizing environmental impacts by following the recommendations listed below.

### Cleaning

- Wash frequently with a sponge or nonabrasive pad and plain water. This approach is very effective at removing salt. Additional “elbow-grease” is required to remove stains.
- When detergents are necessary, use soaps that are phosphate-free, biodegradable, and non-toxic. Any soap should be used sparingly because even non-toxic products can be harmful to wildlife.
- Wax your boat, if appropriate. A good coat of wax prevents surface dirt from becoming ingrained.
- Allow teak decks to fade to gray. Rinse as needed with fresh or salt water to remove dirt. Removing dirt will reduce wear and tear from particles underfoot.
- Clean teak, when necessary, with a mild soap and abrasive pads or bronze wool. This method is better for the boat than the solvents in standard teak cleaners that tend to eat away at the wood and to damage seam compounds.
- Avoid products with lye, ammonia, sodium hypochlorite, petroleum or chlorine (*e.g.*, bleach).
- Never dispose of any cleaning products down the thru-hull drain: dispose of them properly on shore.
- Try the alternative cleaning products listed below.

### *Alternatives to Toxic Products*

<b>Conventional Product</b>	<b>Alternative</b>
Bleach	Borax.
Detergent & Soap	Elbow grease.
Scouring Powders	Baking soda. Or rub area with one-half lemon dipped in borax, then rinse.
General Cleaner	Baking soda and vinegar. Or lemon juice combined with borax paste.
Floor Cleaner	One cup vinegar in 2 gallons of water.
Window Cleaner	One cup vinegar + 1 qt. warm water. Rinse and squeegee.
Aluminum Cleaner	2 Tbsp. cream of tartar + 1 qt. of hot water.
Brass Cleaner	Worcestershire sauce. Or paste made of equal amounts of salt, vinegar and water.
Copper Cleaner	Lemon juice and water. Or paste of lemon juice, salt, and flour.
Chrome Cleaner/Polish	Apple cider vinegar to clean; baby oil to polish.
Stainless Steel Cleaner	Baking soda or mineral oil for polishing, vinegar to remove spots.
Fiberglass Stain Remover	Baking soda paste.

Mildew Remover	Paste with equal amounts of lemon juice and salt, or white vinegar and salt.
Drain Opener	Disassemble or use plumber's snake. Or flush with boiling water + one-quarter cup baking soda + one-quarter cup vinegar.
Wood Polish	Olive or almond oil (interior walls only).
Hand Cleaner	Baby oil or margarine.
Head & Shower	Baking soda; brush thoroughly.
Rug/Upholstery Cleaner	Dry corn starch sprinkled on; vacuum.

Adapted from Buller, Pat. 1995. *Clean Marina+Clean Boating+Clean Water Partnership*. Seattle, WA: Puget Soundkeeper Alliance.

## Maintenance

### *General*

- When planning a project, think about where all the debris, paint chips and solvents could go: chose a method that reduces the chances of any getting into the water.
- Do as much hull work as possible inside or under cover where rain can't wash dust, dirt, paint chips and solvents into the water.
- If working outside, lay filter fabric under the vessel to capture debris.
- Use a vacuum sander to collect sanding dust as it is generated.
- If using conventional sanding equipment, wipe off sanding dust with a damp cloth.
- Contain caustic paint strippers, alkaline or acidic cleaners (*e.g.*, two-part teak cleaner), engine oil, gas, grease, waste water, contaminated bilge water and organic solvents, including paint thinners and chemical strippers. Seal containers tightly when not in use. Inquire about proper disposal of these items at your marina.
- Reuse thinner and solvent. Let contaminants in the solvent settle; decant clear solvent into a new container. Dispose sludge as hazardous waste.

### *Disposal of waste materials*

- Collect paint chips, dust, and sanding residue and discard in regular trash.
- Recycle used oil, oil filters, antifreeze and batteries.
- Bring used solvents and waste gasoline to hazardous waste collection sites.
- *If there is a web site or phone number directing people to drop-off sites, include it here.*

### *In-water maintenance*

- Ask your dockmaster what type of vessel maintenance activities are allowed in the slip.
- Limit work done at the slip to minor repairs. Take larger projects to an onshore service yard with professional equipment and pollution controls.
- For in-water projects, drape a tarp between the vessel and the dock to catch debris. Reverse your vessel in the slip to work on the other side.
- Plug scuppers to contain dust and debris.

### *Engine Maintenance*

- Keep engine well tuned. Benefits include more efficient fuel consumption, cleaner exhaust, fewer leaks, and savings on fuel costs.

- Regularly inspect lines, hoses, seals and gaskets for deterioration. Repair as necessary.
- Wipe engine with an oil absorbent pad to keep it clean, making any leaks more apparent.
- Change oil and transmission fluid with a spill proof pump or vacuum tank.
- Slip a plastic bag over the oil filter before removal to catch any drips.
- Always have an oil absorbent pad handy to wipe up any spills.
- Use propylene glycol (pink) antifreeze—it is less toxic than ethylene glycol (blue) antifreeze.
- At the end of the season, leave tank 90% full to reduce corrosion and condensation. Add fuel stabilizers to prevent stale gas.

### *Painting*

- Prevent paints, especially those with copper or tributyl tin (TBT), from entering the water and sediments.
- Mix only the amount of paint needed for the job. Mix paint on land, not on the dock.
- Use drip pans and containment trays to catch drips and spills.
- Do not spray paint within the marina.
- Don't paint in a heavy breeze.
- Leave empty paint cans open to thoroughly dry before throwing away.
- Share or reuse leftover paint and varnish (*e.g.*, for touch-ups).

#### **Types of Bottom Paints**

- “Soft” sloughing and ablative (self-polishing) hull paints are partially soluble. The active ingredient is continually leached out. As the boat moves through the water—or is scrubbed by an in-water hull cleaner—fresh antifouling paint is exposed.
- Hard finish, conventional antifouling paints hold biocides in a porous film. The toxins dissolve when they contact water. Hard paints release less toxicant with underwater cleaning than do ablative paints.
- Polyurethane and paints containing silicone or Teflon produce hard, slick surfaces to which fouling growth cannot firmly attach. These finishes contain no toxicants and do not rub off during cleaning. Most hulls painted with polyurethane can not be left in the water more than 72 hours.

### *Protection from fouling growth*

- Combine low-copper or non-toxic, hard or slick hull paints and regular underwater hull cleaning instead of high copper content paints. Regular cleaning prevents hard growth from forming.
- Avoid paints containing tributyl tin (TBT). It is highly toxic [*and illegal to use in the US on most vessels*].

### *Underwater hull cleaning*

- Vessels painted with soft sloughing or ablative paints should not be cleaned in the water because scrubbing causes toxicant and paint to be released. On these boats, clean only running gear and anodes.
- Wait 90 days after applying hard finish paint to clean. Paints release more toxicants when new.
- Clean gently to avoid creating a plume or cloud of paint in the water. Plumes indicate that paint is being rubbed off a hull.
- Use a piece of “carpet,” sponge or other soft material to clean the hull.
- Use soft nylon or similar material on rotary brush machines.
- Use more rigorous cleaning pads only as needed to remove hard marine growth.
- Use stainless steel brushes and pads on non-painted metal areas only.
- Do not sand or strip hull paint underwater.
- Bring zinc anodes back to shore: recycle or dispose properly.

### **Purchase Wisely**

- Read product labels. Look for “non-toxic” items and “phosphate free” cleaners. Avoid products with warnings such as, “do not get in eyes” and “always wear gloves.” Products that are hazardous to you are hazardous to the environment as well.