



Does Your Holding Tank Really Stink?

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On boats with toilets, builders install a holding tank to hold the sewage until the boat reaches a pump out facility. Some yachts come equipped with a “Y” valve, so that they can choose to pump out or discharge overboard while way out in the ocean. In most of Canada and the United States, it is **illegal to discharge overboard** and there are heavy fines for doing so. It is advisable to leave the overboard discharge valve locked to prevent accidental discharge and fines.

Most holding tanks are plastic, but there are some stainless steel tanks and even a few aluminum tanks still around.

Back in the 1960's, we were involved with the Ontario Marine Operators Association's negotiations with the Ontario Government to introduce the first Holding Tank and Pump-Out legislation in North America. This put a stop to all black water (holding tank waste) from entering the waterways.

Odor Prevention

To prevent odor, there are several things you can do.

- Make sure your holding tank system has adequate air flow. Eliminate any low spots in vent lines that would restrict the flow of air. Aerobic bacteria (the good guys) requires oxygen to live and function.
- Avoid the use of detergent, bleach, dish soap or other cleaners or odor-masking agents in the holding tank.
- If using a head chemical, use one that is formaldehyde and bromine free to allow aerobic bacteria to live and work properly in the tank.
- Change the hoses, seals, gaskets and impellers in your sanitation system on a regular basis and fix immediately if there is a problem.
- Always pump out when you can, before it is full; otherwise, it could overflow and fill the air breather or leak into the bilge and/or back up in the toilet.

All the suppliers of holding tank products, who we talked to, agreed that boaters should shock their tanks in the spring to clean out and de-scale the inside. “Head-O-Matic Shock Treatment” is one that works well for this, as well as midseason use if you notice an odor building up. It is also recommended to shock the tank when you haul your boat out for the winter. Add the Head-O-Matic Shock Treatment a week or so before the last pump-out, while still using the boat, to allow this environmental product to slosh about in the holding tank to help de-scale walls and ceiling of the tank for the winter. It also helps ensure a very clean last pump out.

Tank Management

There are four different methods for managing the waste in your Holding Tank.

Method 1- Chemical – Most common

- Chemical treatments are the most common and kill bacteria immediately.
- They are very effective at controlling odors, but are not designed to dissolve waste and are the least environmentally friendly.
- Add the recommended amount of head chemical (either granular or liquid) to kill odor and bacteria.
- Be sure to get one that does not contain formaldehyde or bromine because they are toxic to humans and the marine environment.
- The better ingredient is “Quat (Quaternary) to be more environmentally friendly.

Method 2 – Bioactive Treatment – 2nd most common

- Bioactive or biologic treatments contain live aerobic bacteria, which break down waste, reproduce and crowd out anaerobic (odor-producing) bacteria.
- They are environmentally friendly.
- Like enzymes, bioactive treatments emulsify paper and sewage completely.
- Unlike other treatments, they multiply and continue to work long after treatment is complete, eliminating the need to add more between pump-outs.

- To survive, however, the microbes require a well-ventilated holding tank, free of residuals from any previous chemical treatments.
- Although initially expensive, bioactive treatments become more cost effective over time because of bacteria propagation.

Method 3 – Enzyme Treatment

- Enzyme treatments accelerate the digestion of organic materials in waste and neutralize odors at the same time.
- They work quickly to completely emulsify paper and sewage and have extremely low toxicity.
- They must be added regularly and have a limited range of effectiveness in terms of temperature and pH.
- Since they are easily affected by chemicals, heat and cold, it is difficult to manage with accuracy.
- Enzymes require a tank free from residuals of other treatment products.

Method 4 – Nitrate Treatment

- Oxygen is vital to bacteria in the process of breaking down organic waste.
- When little air is present, as in most holding tanks, bacteria derive the oxygen from sulfates in the waste, which produces hydrogen sulfide gas (stinky).
- When nitrates are introduced, they act as nutrients for the bacteria, providing an alternative source of oxygen, which results in the production of nitrogen gas (odorless).
- Environmentally friendly nitrates speed up the breakdown process and eliminate odors.
- They require a tank free of the residuals from other products.

We believe in using environmentally friendly products, but there are times when we use a product that is not "environmentally friendly" but use it in an environmentally friendly way. We are careful to maintain our head and holding tank and use method #1 above on our boat because it is easier and works well for us. With a sealed waste system that is independent of the surrounding environment, it does not harm the lakes and rivers. It is pumped at a pump-out facility that disposes of the waste according to government guidelines. The chemical eliminates harmful odors and gases making a healthier environment for all on board. Head, holding tank and odor are never a problem on our boat nor are they a topic of discussion. We like it that way.

Note

When using biologic or enzyme treatments to promote bacterial growth care must be taken to avoid using soaps or any products like vinegar that will upset the pH balance and destroy the bacterial action that will result in odor.

The key is to **carefully follow the instructions on the container**. Use the recommended amount. You may have to add a little more in extremely hot weather if you notice an odor, and it is also a good idea to add some every Sunday Night when you leave the boat. This helps keep the bacteria in the lines from getting away on you.



With all methods, it is **recommended that biodegradable RV/Marine toilet paper** (single ply, thinner and not as soft as household toilet paper) be used so that it will break down. Regular household double and triple-ply toilet paper can cause blockages and clog up your plumbing by blocking the valves in the toilet.

Using no treatment is not an option.



If you don't use head chemical or a biologic solution, you will have a huge odor problem that gets worse with time and temperature. Nature will be happily at work creating odor. You can use all the air deodorizers and sprays but **you won't be able to get rid of the odor**.

With no chemical or biologic action in your tank, you will get a build up on the walls of the tank that won't break down but generate more and more odor and bacteria. This is not only unpleasant, it is **not healthy breathing the sewage gases** that bubble up in the bowl and fill your cabin.



You will also find that **your clothes will start to carry the odor with you** and your neighboring boaters on your dock will notice the odor from your holding tank's air breather as well as your clothes.

Adding the Treatment

Almost all treatments are added by pouring into the bowl and flushing with water to the holding tank. **The instructions on the product** will tell you how much treatment and how much water to add after a pump-out.

Simplify Waste Treatment aboard Your Boat



[The Head-O-Matic Tank-ette](#)

automatically dispenses the head chemical. You can install it in minutes in the raw water intake hose between the hull and the pump on most manufactured marine head systems.

The tankette unit is 5 1/2" long x 2 1/2" in diameter. When you add the hose connectors as shown at the left, or elbows to both ends, the overall length required is 9". Then, you have to allow a little more space for your hoses. The overall height to the top of the cap is 6 1/2".



You simply put in a “[Head-O-Matic Blue Bullet](#)” of concentrated head chemical and forget it. **It automatically controls the odor** in the bowl and with each flush treats the lines to the holding tank and adds just the right amount of chemical to work in the holding tank to keep your boat odor free.

Add a new bullet every 6 weeks or so

and You're Good to Go!

Handling a Leak

There is nothing worse than the smell of a dirty or leaky head, holding tank or hose. When any of your hoses leak or release an odor, don't waste time trying to clean or use anti-odor products. We've found that the quicker you fix/replace it, the better off you are. Once you get sewage in your bilge, it travels and spreads the bacteria and smell throughout your boat permeating your clothes, bedding--everything. It can take months to get rid of the smell. There is nothing worse.

The only way to handle a leak is to get it fixed ASAP.

The Pump Out

Holding tanks have a limit as to how much they will hold and it is advantageous to figure out how many person days your tank is good for especially if you don't have a gauge to tell you how full the tank is. To **calculate the number of person days for your tank**, multiply the number of people on board using the head by the number of days it takes to fill the tank. Then, you can use this information to calculate when future pump outs are due.



The pump-out procedure is pretty straight forward. Before the tank is full, it should be pumped; otherwise, overfilling will clog up the breather with solids and overflow into the harbor or lake and seep out through the fittings.

It is not only an environmentally friendly thing to pump your tank at a pump-out facility, it is also the law to pump your tank almost everywhere in the world. There are exceptions where overboard discharge is allowed but should be minimized. With a little planning, you can manage your tank so that you are at a pump-out facility when needed.



The marina personnel will **attach the pump-out hose nozzle to your deck fitting** and turn on the pump. (Some marinas will expect YOU to connect the nozzle to your deck fitting. It just depends where you are.) When it is just about empty, pump more water into the tank through the toilet bowl to rinse the inside of the tank, then allow the pump to empty the tank again. Some marinas allow you to fill the tank through the deck fitting with a dedicated water hose and pump the tank again thus rinsing the sticky bits from the walls of the tank.

Be sure to hose down the deck after a pump out and recharge the tank by **following the directions on your head chemical or biologic formula**. This usually requires pumping some clean water into the tank with the treatment. Then, wash and sanitize your hands and your pump out is complete.

Look after your holding tank

To eliminate holding tank woes,

Don't let your holding tank get away on you.