

# SHIPSHAPE SANITATION

## msds and pumpouts

California's waterways offer boaters a variety of on-the-water experiences, from exploring the secluded coves of the Sacramento-San Joaquin Delta, to sailing the state's 1,100 miles of coastline. But the pollution of our waterways from a number of sources can spoil boating and other aquatic recreation. Unfortunately, recreational boaters add to the pollution problem when they fail to dispose of boat sewage properly.

### Are boat sewage discharges really a problem?

The 1992 Clean Vessel Act identifies vessel sewage discharges as "a substantial contributor to localized degradation of water quality in the United States." Since there are about 860,000 registered boats in California, the illegal discharge of boater-generated sewage can make a big difference in the water quality.

A single weekend boater flushing untreated sewage into our waters produces the same amount of bacterial pollution as 10,000 people whose sewage passes through a treatment plant

But this degradation is entirely preventable! All it takes is correct and consistent use of your MSD(marine sanitations device) and local pumpout station.

### Recreational boat sewage discharges--what are the effects?

Human sewage from boats can create environmental problems, especially if vessels dump wastes overboard in confined areas -- like harbors, marinas, coves or sloughs.

#### **Raw or poorly treated sewage discharge overboard can:**

- spread disease
- contribute unsightly floatables
- contaminate shellfish beds
- lower oxygen levels in water

Sewage -- polluted water can be hazardous to your health.

Human wastes can contain disease-causing organisms such as bacteria, viruses and parasites. Swimmers, waterskiers, surfers and others who come in contact with water that has been contaminated with human wastes can become ill. The most common symptoms are nausea, stomachache, vomiting and diarrhea. Other symptoms include sore throat, cough, runny nose, earaches, and respiratory problems. Contact with polluted water can also cause skin infections and rashes. More serious water-borne diseases include infectious hepatitis, typhoid and cholera.

**The sight of floating sewage is unappealing.**

It takes away from our enjoyment of time on the water.

**Untreated vessel discharges can contaminate shellfish beds.**

When boaters discharge human waste overboard in shellfish bed areas, the sewage reaches the bottom where it is taken up by the clams, oysters and mussels. These shellfish eat the bacteria from the sewage along with the tiny food particles that they normally ingest. Shellfish can convey virtually all water-borne pathogens (disease-causing organisms) to humans. When people eat raw or partially cooked contaminated shellfish, they may become ill.

**Sewage can decrease the amount of oxygen available in the water.**

It takes oxygen to decompose sewage in water. The amount of dissolved oxygen in the water required to decompose organic matter is measured in terms of "Biological Oxygen Demand" or "BOD". Although the volume of waste from a recreational boater is small, the wastes are concentrated and this increases the BOD. High BODs are often found in marinas and poorly flushed areas where boaters congregate. The result can be stagnant water and fish kills.

**MSDs -- Preventing Pollution**

A Marine Sanitation Device (MSD) is designed to keep untreated sewage out of the water. Every boat with an installed marine toilet must have it connected to an operable Coast Guard-approved MSD. Most boats have one of three basic types of MSDs. (Type III MSDs are the most common type found on boats.)

**Type I and II MSDs**

These types macerate the sewage and then treat it with chemicals or other means to reduce the bacterial count before it is discharged overboard.

A **Type I MSD** must macerate the sewage to no visible solids, and then reduce the bacteria count to less than 1,000 per 100 milliliters.

A **Type II MSD** macerates the sewage even finer so that the discharge contains no suspended particles and the bacteria count must be below 200 per 100 milliliters.

## **Type III MSD**

**Type III MSDs** are holding tanks. This is the most common type of MSD found on boats. These systems are designed to retain or treat the waste until it can be disposed of at the proper shoreside facilities.

Portable toilets are the simplest type of MSDs. They represent the easiest solution to marine sanitation on small boats because they require minimal space, and are inexpensive, reliable and easy to operate.

From the perspective of environmental impact, a Type III MSD -- when used correctly -- may be best, because it conveys boat waste into a local advanced sewage treatment system and reduces the need for on-board use of potentially toxic tank treatment chemicals.

### **What's The Law?**

- It's illegal to discharge untreated sewage into any of California's lakes, rivers, reservoirs, or coastal waters within the three-mile U.S. territorial limit.
- There are 11 federal "No Discharge Areas" in California where it is illegal to discharge any wastes, treated or untreated.
- You are not required to have an installed marine toilet on your boat, but if there is one, it must be connected to a Coast Guard-approved MSD.
- Boats 65 feet and under may use a Type I, II, or III MSD. Boats over 65 feet must have either a Type II or III MSD.
- Certification: Make sure that your Type I or II MSD meets Coast Guard requirements by looking for a certification label. A Type III MSD is not required to have a label if it simply stores sewage at ambient pressure and temperature.
- The Coast Guard can issue fines of up to \$2,000 for the illegal discharge of sewage.

### **The Y Valve**

"Y" valves are used as part of some MSD systems to direct waste overboard. If your sewage system is equipped with a Y valve for overboard discharge, and you are

operating on inland waters, in a "No Discharge Area" (see back panel), or within the three-mile U.S. territorial limit, you must secure the Y valve in the closed position. The preferred method is to use a padlock or non-releasable wire tie. If you have a thru-the-hull seacock, it must also be secured.

### Additive Advice

The chemical disinfectants and deodorizers used in many MSDs can contain chlorine, quaternary ammonia, or formaldehyde--all harmful to aquatic life. When shopping for treatment products, read labels carefully and take advantage of the many environmentally friendly products now available without these ingredients. Be sure to follow the directions for applying a sufficient amount of chemical to ensure adequate treatment.



### Pumpout Pointers

- Keep your MSD in good operating condition. Make sure all fittings, hoses and other pump mechanisms stay clean and lubricated. Keep a complete repair kit for your particular type of head on board. Use rapid-dissolving marine toilet tissue specifically designed for MSDs.
- Find a pumpout station. It only takes a few minutes to pump the waste out of a holding tank. For a free map of the locations of pumpout facilities in California, contact the Division of Boating and Waterways.
- Follow pumpout instructions. If instructions are not posted, or unclear, ask. Encourage the marina operator to post easy-to-understand instructions.
- Rinse water through the pumpout system for one minute when finished pumping. Expensive breakdowns commonly occur when the sewer lines get clogged because of inadequate rinsing. Flushing water through the system is an inexpensive form of preventive maintenance.
- Pump out only your holding tank. Pumpouts are not designed to handle bilge water or other substances.
- Turn off the pump when finished so it will work for the next boater.

- Consider using a mobile pumpout service if you prefer not to service the head yourself.

### Discharge Dos and Don'ts

- Use onshore public toilets whenever possible. If you do not have an installed marine toilet, consider equipping your boat with a port-a-potty, which can be emptied at marina dump stations.
- Never discharge raw sewage from any type of MSD into California waters.
- Never discharge treated sewage in shallow coves, near sensitive shellfish beds or swimming beaches, or areas where water contact sports are common.
- The disinfectants used in many MSDs may contain chlorine, quaternary ammonia, and formaldehyde, which can be harmful to aquatic life. Whenever possible, choose disinfectants that do not contain the above ingredients. Always use the recommended amount of any treatment product.
- Adding chemical deodorizers to your MSD does not constitute treatment and does not allow you to dump wastes overboard.
- If your boat has a Y valve for overboard discharge, you must secure it in the closed position. The preferred method is to use a padlock or non-releasable wire tie, or remove the handle entirely when traveling on any inland waters and coastal waters within three miles from shore.

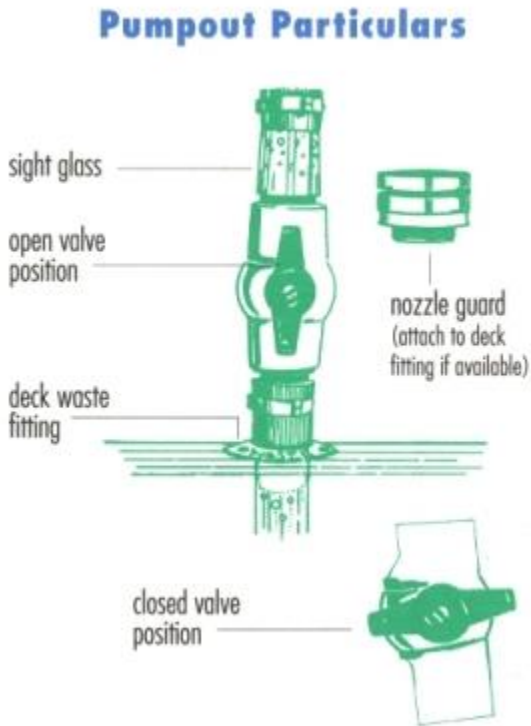
### Discharge Ins and Outs of Pumping Out

Here are some tips on how to use a typical pumpout:

Whatever the model, follow the instructions posted, and use the pumpout for holding tank waste only. Pumpouts are not designed to handle bilge water or solid material.

1. Close nozzle valve on pumpout hose.
2. Remove deck waste fitting cover from boat (attach nozzle guard to deck waste fitting if available) and insert nozzle.
3. Turn on pump.
4. Slowly open nozzle valve. (Valves can be difficult to turn--be persistent!)
5. Check the flow through the sight glass. If flow does not begin within one minute, place the nozzle in water for ten seconds. If there is still no flow, check for an air leak in the line or a plug in the holding tank air vent.
6. When tank is empty, remove nozzle from fitting.
7. Place the nozzle in water for 60 seconds to flush the line. Flushing helps prevent costly pumpout breakdowns.
8. Close the nozzle valve.

9. Turn off the pump and return the hose when you are finished so it will work for the next boater.



Look for this new national symbol to help you find local



pumpouts.

### No Discharge Areas

Remember, it is illegal to discharge untreated boat sewage into any of California's lakes, rivers, reservoirs, or coastal waters within the three-mile U.S. territorial limit. In addition, there are 11 federal "No Discharge" Areas in California where the discharge of any untreated or treated boat waste is prohibited:

1. Lake Tahoe
2. Mission Bay
3. San Diego Bay - Less than 30 feet mean lower low water
4. Oceanside Harbor
5. Dana Point Harbor
6. Upper and Lower Newport Bay
7. Sunset Aquatic Park (Sunset Bay) - Inland of Pacific Coast Highway Bridge

8. Huntington Harbor
9. Channel Islands Harbor
10. Avalon Bay Harbor
11. Richardson Bay

For a free map of where to vessel pumpout stations in California, contact:  
Division of Boating and Waterways  
One Capitol Mall, Sacramento, CA 95814  
(916) 263-1331, Toll-free (888) 326-2822