Clean Boater Tip Sheet

Boat Sewage

Raw or poorly treated boat sewage is harmful to human health. Typhoid, hepatitis, cholera, gastroenteritis, and other waterborne diseases may be passed directly to people who swim in contaminated waters. People may also become infected by eating fish contaminated with viruses and other micro organisms contained in sewage discharge.

Sewage is also harmful to water quality. Because the microorganisms within sewage need oxygen, any effluent discharged to water reduces the amount of oxygen available to fish and other forms of aquatic life. Furthermore, the heavy nutrient load in sewage promotes excessive algal growth. As the algae multiply, they prevent life-giving sunlight from reaching subsurface vegetation. When the algae die they create another problem; the algae are decomposed by bacteria which further reduce levels of dissolved oxygen.

What Does the Law Say?
According to Federal and State law, it is illegal to discharge raw sewage into any body of water in Ohio. All vessels must have a means of containing raw sewage. All vessels with installed toilets must have a Marine Sanitation Device (MSD):
_ **Type I** systems mechanically cut solids and disinfect waste. They must bear a U.S. Coast Guard certification label.
_ **Type II** systems are similar to Type I systems. The difference is that Type IIs treat sewage to a higher standard and generally require more space and energy. Type II systems must also have a Coast Guard certification label.
_ **Type III** systems do not discharge sewage. Holding tanks are the most common Type III system. Incinerating systems are another option. A Coast Guard label is not required.

Vessels 65 feet and under may have any of these three types of MSDs. Vessels over
65 feet must have a Type II or III system. Type I and Type II systems are legal only in commercial waters; in Ohio commercial waters are Lake Erie, the Ohio River and the Muskingum River.

Holding Tanks

- Install a holding tank. For most recreational boats with facilities for an installed toilet, a holding tank (Type III system) is the preferable system for handling sewage on board. Only Type III systems are allowed in Ohio waters other than Lake Erie, the Ohio River and the Muskingum River. In addition, Types I or II systems should not be discharged while docked at any marina.

- Use good plumbing to control holding tank odor. Fiberglass and metal tanks are highly resistant to permeation. Specially labeled flexible "sanitation hoses" and PVC piping are also highly impermeable. Hose runs should be as short and as straight as possible. Wherever practical, use rigid pipe below the level of the holding tank and in other areas where sewage will accumulate. Keep the number of connections to a minimum and insure that seals are tight.
- Use enzyme-based products in your holding tank to further control odor. Enzymatic products use biological processes, rather than harsh chemicals, to break down sewage. Be sure to pump and rinse your holding tank prior to initial use of an enzyme product if you have used chemical-based odor control additives in the past. Chemical residues may interfere with the effectiveness of enzyme-based products.
- Avoid holding tank products that contain quaternary ammonium compounds (QACs) and formaldehyde. These products may disrupt sewage treatment plants.
- Empty your holding boat's holding tank at a pump out facility on a regular basis.

Portable Toilets

- If you have a small vessel, consider buying a portable toilet to contain raw sewage. It is against the law to dispose of raw sewage into any water of Ohio.

Type I and II MSDs

- Maintain your Type I or II MSD. Establish a regular maintenance schedule based on your owner's manual to remind yourself when chemicals need to be added, electrodes need to be cleaned, etc.
- Do not discharge your Type I or II MSD in a marina, in a swimming area, or in an area with poor water circulation. Effluent from legal Type I and Type II systems contains nutrients and possibly toxic chemicals. It may contain pathogens as well.

Use MSDs Only for Untreated Sewage

- Do not dispose of fats, solvents, oils, emulsifiers, disinfectants, paints, poisons, phosphates, diapers, and other similar products in MSDs.

Use Shoreside Restrooms When in Port.

Be a Conscientious Consumer

- Read product labels. Labels convey information about the degree of hazard associated with a particular product. For example, DANGER equates to extremely flammable, corrosive or toxic; WARNING indicates that the material is moderately hazardous; and CAUTION signals a less hazardous product. Select products that contain no warnings or which merely CAUTION consumers.
- Be wary of unqualified general claims of environmental benefit, e.g., "ozone friendly." A better, more meaningful label would read, "This product is 95 percent less damaging to the ozone layer than past formulations that contained chlorofluorocarbons (CFCs)."