

Human Waste Disposal

MARINE SANITATION DEVICES (MSDs)

Anyone that spends a day on a boat with a head has the dubious pleasure of using the "onboard facilities." Whether you are on a 16' outboard or a 40' ketch, the "call of nature" is a regular part of our boating experience. So what's the big deal about using the water as a big bathroom?

The primary environmental concern with your sewage is not the urine (which is basically sterile) , but the feces. Human feces contains bacteria, pathogens, and nutrients. The idea behind federal regulations concerning sewage on boats is to keep untreated sewage out of our inland and coastal waters, so we don't have to swim in it or drink it. Read on for the regulatory details...

Sanitation Regulations

In most inland and coastal waters, boats with installed toilets are required to have a sanitation system on board in order to control pollution. Standards have been set by the Environmental Protection Agency, and regulations have been issued by the Coast Guard, covering the certification and use of Marine Sanitation Devices. Sanitation systems consist of an installed head (toilet), a waste-treating device (MSD), and/or a holding tank.

As with most Coast Guard Certified equipment, there are different classifications to cover most every marine application.

Type One MSDs typically discharge treated waste directly overboard.

Type One MSDs are treatment systems that reduce bacteria and discharge no visible floating solids.



(Not legal in some state boating areas as well. Check local laws before installing. Type One MSD systems, such as a head coupled with a Lectra-San, are legal on vessels less than 65 feet that boat in an area not declared a Federal No-Discharge Zone.

Type Two MSD systems are similar to type one systems, but are more powerful, and do a better job of treating waste. These are typically installed in boats over 65 feet because of the power demands, but can be used on any vessel outside of a no-discharge zone.

Type Three MSD system:



This system uses a head connected directly to a holding tank. Some systems use "Y-valves" that allow waste flow to be diverted directly overboard. (outside 3-mile discharge limit) Holding tanks can be emptied at many marinas or state run pump-out stations.

Portable Toilet:

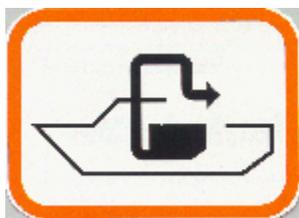
A commonly used and cost effective alternative is the portable toilet. This system is fully self contained. The upper section of the unit holds water used for flushing the bowl. Treated water, plus the wastes, are flushed into the bottom each time the unit is used. The toilet can be used for several days before pumpout is needed. Though these are not considered to be MSD's as they are not permanently installed, they are legal to use on all waters.



Sewage System Options

Options for your boat's sewage system, depending on where you boat:

	<i>Inland</i>	<i>Coastal</i>	<i>Ocean</i>
Type/Cost	Inland Lakes and No Discharge Areas*	Rivers, Bays, Sounds, Etc.	Coastal and offshore areas (3 miles or more)
Installed toilet w/USCG Certified Type I MSD Cost: \$1200+	Not Legal. Type I + II MSD's treat the waste and discharge it overboard.	Legal Option. Reduces bacteria, but not nutrients, in waste before discharging overboard.	Good option for boats <65'. Not dependent on finding onshore pumpout stations. Treats waste before discharging overboard.
Installed toilet w/USCG Certified Type II MSD Cost: \$4000+			Good option for larger boats. Not dependent on onshore pumpout stations. Treats waste more effectively than Type I and discharges is overboard.
Installed toilet with a USCG Certified Type I or II MSD and a Type III holding tank Cost: \$1400-4200	Offers the most flexibility for use anywhere. Requires more space & more equipment. While in No Discharge Areas or inland, can treat waste and keep in holding tank for onshore pumpout. In coastal areas, can use pumpout if onshore facilities are available or discharge treated waste overboard. While offshore, can treat waste and discharge overboard.		
Installed toilet w/Type III MSD. Cost: \$500+	Good option. Keeps waste out of water. Relies on having adequate onshore pumpout facilities.		Not practical for offshore without "Y" valve as a way to divert waste from holding tank.
Installed toilet w/Type III MSD and "Y" valve Cost: \$500+	Good option. Keeps waste out of water. Relies on having adequate onshore pumpout facilities. While offshore, "Y" valve can be open to legally discharge directly overboard (3 miles or more offshore--oceans only). While not offshore, "Y" valve must be closed.		
Portable toilet Cost: \$70+	Good option. Keeps waste out of water. Can use available onshore dump stations or dump in onshore toilet.		Need more capacity to be a practical option.
*States with lakes capable of interstate navigation may allow the use of Type I or II's.			



What It All Means...

This national symbol is used to show boaters where onshore pumpout services are located. You'll need to know this symbol if you use a portable toilet or Type III MSD (holding tank) on your boat.

Federal law says that untreated sewage (even if it's been dosed with a deodorant product) can NOT be discharged in inland or coastal waters. This means the sewage from a portable toilet or a Type III holding tank can not be discharged unless you are in the ocean more than 3 miles offshore.

Federal law also states that if you have a holding tank with a "Y" valve allowing direct overboard discharge of untreated waste, it must be secured in the closed position while operating in all inland and coastal waters. Using a non-releasable wire tie, padlock, or removing the valve handle is considered adequate securing of the device. Click here to get more details and an illustration of a Y-Valve. (This goes to a new panel with the "Why a "Y" Valve?" page from CVA template notebook.)

Operating in a federally designated "No Discharge Area" further restricts what sewage you can discharge overboard. In these areas, there is no treated sewage discharge allowed from boats. That means if you have a Type I or II MSD, you are not allowed to discharge it while in those waters. There is a trend towards more local waters being designated as No Discharge Areas, so if you rely on using your Type I or II MSD, check a cruising guide before venturing into new waters.

What about grey water?

Grey water is the water discharging from your sink and shower, while black water is the sewage/water discharging from a toilet. In the United States, there are no federal requirements for the containment of grey water. However, in Canada, and in some inland lakes, there may be additional restrictions. Please check your local cruising guide or with your local state boating agency for more details. Are You In Compliance?

<i>Equipment on Boat</i>	<i>Legal?</i>	<i>Restrictions and Comments</i>
Installed toilet without MSD	No	
Installed toilet with macerator	No	USCG regulations require that all installed toilets have an attached MSD. Macerator does not count.
Installed toilet with Type I MSD*	Yes (But not ok in No Discharge Areas)	Ok on boats <65'. Discharge is <1000 per 100 milliliters of fecal coliform bacteria with no visibly identifiable floating solids.
Installed toilet with Type II MSD**	Yes (But not ok in No Discharge Areas)	Ok on any size boat. found on larger boats because of electricity and space requirements. Discharge is <200 per 100 milliliters of fecal coliform bacteria with <150 milligrams of suspended solids per liter.
Installed toilet with Type III MSD**	Yes	Keeps waste out of water by using a holding tank. Discharge at onshore pumpout facility or via "Y" valve while more than 3 miles offshore in the ocean.
Portable toilet	Legal on any boat.*	Does not fall under USCG regulations of MSD's.
No installed toilet	Yes	Remember No Discharge Area rules.
Note: Some states have additional restrictions. For example, in Florida, houseboats may only have a Type III MSD or a permanent sewer line to shore. Check on your state's laws.		
** Must be USCG certified		
* Not legal in the province of Ontario		

