

WARNING!

Avoid serious injury or death from a fire or explosion caused by leaking fuel or fuel vapors. Inspect system for leaks frequently and schedule fuel system maintenance with a certified marine technician annually.



INFORMATION

To find out more about making boating safer—including how you can prevent carbon monoxide poisoning on recreational boats—contact:

National Marine Manufacturers Association
10 S. LaSalle Street, Suite 3500
Chicago, IL 60603
nmma.org
312.946.6200

United States Coast Guard
Office of Auxiliary and Boating Safety
Commandant (CG-BSX-2) Stop – 7501
2703 Martin Luther King Jr. Ave., S.E.
Washington, DC 20593-7501
uscgboating.org
202.372.1062

American Boat & Yacht Council, Inc.
613 Third Street, Suite 10
Annapolis, MD 21403
abycinc.org
410.990.4460



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NMMA® National Marine
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ENGINEERING STANDARDS

MARINE FUEL SYSTEM SAFETY

BOATING SAFETY AWARENESS SERIES

A Public Service of the National Marine
Manufacturers Association

THE FACTS

Everyone who owns or operates a boat must practice fuel system fire safety. Each year, boat fires and explosions injure hundreds of individuals and cause millions of dollars in property damage.

Many of these accidents are preventable. Be alert for any deterioration or damage to the boat's fuel system. Over time, fuel system components wear out.

Inspect these components at least annually, especially near the engine where engine heat and vibration can accelerate deterioration.

WHAT TO DO

1. Schedule regular engine and exhaust system maintenance inspections by experienced and certified marine technicians.
2. Inspect fuel systems at least annually, particularly hoses, connections, filters, water separators and tank surfaces.
3. Before and during the fueling process, shut down engines and auxiliary equipment and all electrical equipment. All occupants should exit the boat before fueling.
4. Avoid gear interference: do not allow equipment or gear to contact fuel-system components. Monitor storage areas where fill and vent hoses are often located.
5. Do not store portable fuel tanks in enclosed areas, including the engine room compartment (even though the enclosed area may be "ventilated").
6. If the boat is equipped with a powered ventilation system, ensure that all blowers and hoses are operational and intact. Go to the vent outlet, typically located on the exterior of the boat. Place your hand near the vent and feel for strong airflow. This confirms that the system is properly pushing air through.
7. Take a boating safety course to learn more about fuel system safety and how to properly use a fire extinguisher aboard a boat.

CHECKLIST

BEFORE EACH TRIP:

- ☐ Make sure all passengers know where to find the fire extinguishers and how to operate them.
- ☐ Check the pressure gauge: Ensure the needle is in the green zone. If it's in the red (low or overcharged), the extinguisher needs servicing. If the boat has an automatic fire extinguishing system, ensure the pull cable safety pin at the bottle is removed.
- ☐ Bilge "Sniff Test": Before starting the engine(s), perform a manual fume check by getting down close to the bilges and using your sense of smell. Kneel down and "sniff" the area thoroughly. Your nose/sense of smell is often the most reliable detector for fuel or vapor fumes and can alert you to potential hazards that sensors might miss. Do not start the engine if a fuel smell is encountered.
- ☐ If inboard powered: operate the bilge blower for **AT LEAST FOUR MINUTES** before starting a generator, an inboard or sterndrive engine. If you still smell fumes, do not start motor—locate the source and make repairs first. **Do not start the engine with fuel fumes present.**
- ☐ Before refueling, close all hatches, ports and other openings; shut off engines, motors, pumps, blowers and all electrical equipment, and do not smoke. Fill all portable tanks on the dock. **NOTE: THESE TANKS MAY BE UNDER PRESSURE.** Be sure to relieve the pressure before opening the fill valve. See the tank manufacturer's instructions.
- ☐ Never leave the fuel pump unattended while refueling **DO NOT TOP OFF AFTER THE FUEL PUMP SHUTS OFF.** Fuel fill systems for permanently installed fuel tanks should correctly trigger the fuel nozzle shut off without spilling fuel when the tank is full.
- ☐ To effectively use a fuel stabilizer, add the stabilizer to the fuel tank before filling it with fresh fuel. This ensures proper mixing and maximizes the stabilizer's effectiveness. After filling, run the engine for 5–10 minutes to allow the treated fuel to circulate throughout the system, helping to prevent premature fuel hose degradation and other fuel-related issues. Do not add stabilizer to a full fuel tank.
- ☐ After refueling, wipe up any excess or spilled fuel, open all hatches and ports, and let the boat air out. "Sniff" your bilges again. Operate the bilge blower for **AT LEAST FOUR (4) MINUTES** before starting the engine or generator.
- ☐ On a boat with portable fuel tanks, make sure the vents can be closed and the tanks have a vapor-tight, leak-proof cap. Due to variations in how different tanks operate, read the owner's manual to ensure you are using them properly.

AT LEAST ANNUALLY:

A detailed inspection of the boat should be performed by a certified marine technician. The inspection and associated repair or replacement of components should include the following:

- ☐ Inspect all fuel hoses and components and replace if any evidence of cracking, corrosion or deterioration is found. Use only USCG-approved components.
- ☐ Inspect fuel tanks. Pay particular attention to bottom surfaces that may have contacted bilge water. Also, check for tank corrosion or damage from rubbing and abrasion. Closed compartments that contain fuel tanks and engines must be ventilated.
- ☐ Inspect all fuel system connections.
- ☐ Be sure the fuel fill is securely mounted, grounded and located where spilled fuel cannot collect in the cockpit or bilge. Dry and cracked or soft and mushy fuel fill hoses should be replaced immediately. Use only USCG-approved "Type" fuel hoses.
- ☐ Ensure fuel feed and vent hoses are secured to fittings. Dry or cracked hoses should be replaced immediately. Use only USCG-approved "Type" fuel hoses.
- ☐ Ensure the bilge blowers are working properly. Inspect the ventilation intakes and exhaust port for proper air flow.
- ☐ Ensure heating and cooking appliances on board are secured and operate properly. Refer to the appliance owner's manual for guidance on inspecting for leaks in valves and connections. **NEVER USE AN OPEN FLAME** to inspect for leaks.
- ☐ Ensure flammable items are stowed safely and cannot contact cooking or heating appliances or hot engine parts.
- ☐ Ensure fire extinguishers are USCG-approved and in good working order (i.e., gauges register and nozzles are clear).
- ☐ Repair all damaged wires and loose electrical connections that might cause a short in the boat's electrical system and start a fire.
- ☐ Do not store disposable propane cylinders or charcoal lighting fluid in any areas with components that are not ignition protected.
- ☐ When replacing starters, alternators or other electrical equipment, use only UL or SAE marine-type ignition-protected parts. **DO NOT USE AUTOMOTIVE PARTS.**

DO NOT OPERATE YOUR BOAT UNTIL THE SOURCE OF A FUEL LEAK IS IDENTIFIED.

HAVE A QUALIFIED SERVICE TECHNICIAN CORRECT THE CONDITION.

NEVER USE AN OPEN FLAME TO INSPECT FOR LEAKS.