

lower temperature a person's muscle and mental functions are affected. Someone who is exposed to cold water, and becoming hypothermic, can exhibit progressive signs and symptoms such as:

- Shivering, slurred speech and semi consciousness
- Slow and weak pulse, slow respiration, lack of coordination, irrational, confused and sleepy behaviour
- Weak, irregular or absent pulse or respiration
- Loss of consciousness

If you end up in the water, do everything you can to conserve energy and body heat. Swim only if you can join others or reach a safe haven. Do not swim to keep warm.



Extend your survival time by:

- Wearing a Canadian-approved lifejacket or PFD. Valuable energy will be lost keeping your head above water if you are not wearing one.
- Climbing onto a nearby floating object to get as much of your body out of or above the water as possible.
- If possible, adopt a heat escape lessening position: cross your arms tightly against your chest and draw your knees up close to them.
- Huddle with others and make sure the sides of everyone's chest are close together, with arms around mid to lower back and legs intertwined.

Protect yourself by wearing a lifejacket or PFD, multiple light layers of dry clothing and a water or wind-proof outer layer. Other equipment that comes in a variety of styles and names, and provides additional protection from hypothermia include:

- Floater or survival suits: a full nose-to-toes PFD
- Anti-exposure worksuits: a PFD with a thermal protection rating

- Dry suits: to be used with a flotation device and a thermal liner
- Wet suits: to be used with a flotation device, traps and heats water against the body
- Immersion suits: to be used in extreme conditions when abandoning a vessel (usually for off-shore use)

Knowing how your safety equipment works, especially in water, is a good idea. Test it in a warm swimming pool or in calm water before you may have to use it in an emergency.

If there is warning your boat may be sinking, put on as much clothing as possible beneath your lifejacket or PFD.



Fuel safety and carbon monoxide awareness

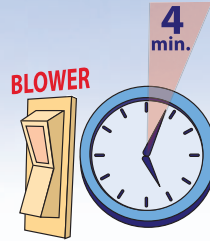
Enclosed spaces containing fuel-burning engines or appliances should be well ventilated to avoid carbon monoxide build-up. Fuel-burning engines or appliances should also be certified or designed for marine use.

Carbon monoxide (CO) is an invisible, silent and deadly danger. It is a colourless, odourless gas produced during the incomplete combustion of fossil fuels. It cuts off the oxygen supply to the body, causing death in minutes. Symptoms of CO poisoning such as headaches, nausea, and fatigue can be mistaken for seasickness or the flu because the deadly gas is undetectable.

Avoid CO poisoning:

- Do not idle your boat's engine, heat its cabin or cook unless doing so in well-ventilated areas.
- Be especially careful in modified areas such as cabin extensions and areas fitted with canvas tops.
- Use a carbon monoxide detector designed for a vessel and check the detector's batteries before every trip.
- Engines left idling in poorly ventilated areas create dangerous concentrations of CO: a tail wind can easily carry CO back on board.
- CO can build up when: two vessels are tied to each other; you are docked alongside a seawall; an improper load distribution causes the bow to ride high; or when your vessel is stationary and a fuel-burning appliance or engine is running.

Swimmers take note: CO is not just a risk to boaters. You can be overcome by the gas in minutes and drown. Areas of risk are underneath swim grids and between the pontoons of houseboats.



Engine start-up

Enclosed gasoline engine and fuel tank compartments must have a blower and an underway ventilation system in accordance with the Construction Standards for Small Vessels. The blower must be operated for at least four minutes immediately before every start-up.

Fuel-burning appliances

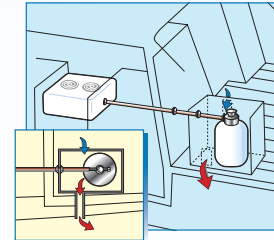
Propane and butane, often used on boats for fuel-burning appliances, can be dangerous and must be treated with care. These substances may present more risk than gasoline to use.

Gas fumes and leaking propane or butane are heavier than air and will quickly flow into the lower parts of your boat. These substances are extremely difficult to remove and are highly explosive.

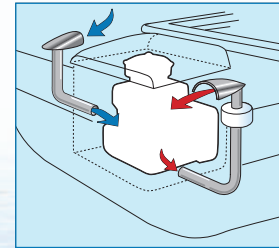
Be sure to provide adequate ventilation for gas-burning appliances, even with just a pilot light on. Ensure portable cooking or heating appliances are secured to guard against leakage due to unexpected movement of the boat. Secure gas cylinders and tanks in an area with good ventilation.

Always attend to an open flame heating, cooking or refrigeration system that uses gaseous fuel. Be sure the fuel-burning equipment installation is in accordance with manufacturer's recommended practices.

Typical ventilation system:



Typical propane installation with ventilation:





Ignition protection

Many older vessels, and even some new ones, have been fitted with converted automotive engines. If your boat is being serviced by the novice handyman or backyard mechanic, it is possible marine parts are being replaced with less expensive automotive versions.

Every pleasure craft must have ignition-protected electrical devices. Ignition-protected components are designed and constructed so they will not ignite a flammable hydrocarbon mixture like gasoline or propane under normal operating conditions. This protection uses seals and flame arrestors to prevent sparks from escaping when the equipment is operating. Most Canadian ignition-protected components are labelled.

Not sure if your pleasure craft's engine has ignition protected parts in it? Have it serviced by a certified marine technician. They can tell you if a replacement part (or related work done to the engine) has compromised the engine's ignition-protection.



Fuelling procedures

Raw fuel is extremely harmful to the marine environment and its vapours create a fire hazard. Follow these procedures, step-by-step, when refuelling. It not only makes good sense, it is the law.

1. Moor your boat securely to prevent spillage.
2. Shut off all engines.
3. Send guests ashore.
4. Extinguish all open flames.
5. Do not smoke while refuelling.
6. Turn off electrical switches, power supplies and avoid using electrical devices such as portable radios.

7. Close all windows, portholes, hatches and cabin doors.
8. Remove portable tanks from the vessel before refuelling.
9. Ground the nozzle against the filler pipe.
10. Know the capacity of the fuel tank and do not overfill it — you have a duty to prevent leakage or spillage of fuel into the hull or water.
11. Wipe up spillage and properly dispose of the cloth or towel used.
12. Operate the engine compartment blower for at least four minutes immediately before starting the gasoline engine.
13. Check for vapours from the engine compartment before starting up the engine.

Heads up! New environmental laws are affecting diesel properties. The type of diesel available at the pump will be constantly changing. Follow the safety instructions provided by fuel suppliers, and operate according to your vessel's engine and system requirements