



## Carbon Monoxide California State Parks, Division of Boating and Waterways

[www.BoatCalifornia.com](http://www.BoatCalifornia.com)

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Exposure to carbon monoxide (CO) in large amounts or for a long duration results in death. CO is an odorless, colorless gas in the exhaust produced in gasoline engines. Boats release CO through the exhaust ports of vessels that are either idling or underway. When inhaled, CO replaces oxygen in tissues.

### What are the symptoms of CO poisoning?

Symptoms of CO poisoning may include nausea, dizziness, confusion, headache and fainting; however, people often mistakenly attribute these symptoms to too much alcohol, sun, and noise, or to motion sickness from the water or exhaustion.

### How are people exposed to CO in a marine environment?

Traditionally, CO poisonings have occurred on houseboats, vessels with overhead canopies or other vessels that have poor ventilation. CO also accumulates onboard a vessel through a process known as the 'station wagon effect.' This occurs as air moves around a boat and forms a low pressure area immediately behind the broad, flat transom. CO from the exhaust system enters the low-pressure area and is fed back into the cockpit and into the cabin.

Many cases of CO inhalation have involved a recreational activity known as 'teak surfing'. 'Teak surfing' involves holding onto the swim platform or transom of an underway vessel to bodysurf on the wake of the vessel. As of January 1, 2005, 'teak surfing' and other similar recreational activities are against the law in California.

### How common is CO poisoning in a marine environment?

Nationwide, between 1990 and 2004, there were 571 reported boating-related CO poisonings, including 113 deaths; 43 in California alone. CO poisoning is only recently receiving attention, it is likely that many other deaths have been attributed to drowning or heart attack in years past may have been caused by CO poisoning.

### How can I protect my family from CO?

There are many ways to protect your family from the dangers of CO. Several of the different precautions a boater can take are listed below.

- *Use a Marine Carbon Monoxide Detector*
- *Ensure Proper Ventilation*
- *Inspect Exhaust System Regularly*
- *Avoid the Transom*
- *Educate Children*
- *Avoid Other Idling Vessels*

### Are there any specific boating laws relating to CO?

- As of January 1, 2005, 'teak surfing' and other similar recreational activities are against the law in California.
- As of May 1, 2005, a set of carbon monoxide warning stickers must be placed on the transom and helm of all new and used motorized vessels sold in California.

### How can I get California-approved CO warning decals for my boat?

Boaters can visit their local Department of Motor Vehicles for the decals or visit the DBW Online Ordering System to place an order:

Link: [Online Ordering System](#)

Tutorial: [Guide to Ordering Publications](#)

### How can I get more information about CO?

To learn more about the dangers of CO, view DBW's brochure online. For a copy of the pamphlet and a CO warning decal for your boat, visit [www.BoatCalifornia.com](http://www.BoatCalifornia.com) or call (888) 326-2822. You may also write to Division of Boating and Waterways, One Capitol Mall, Suite 500, Sacramento, CA 95814.