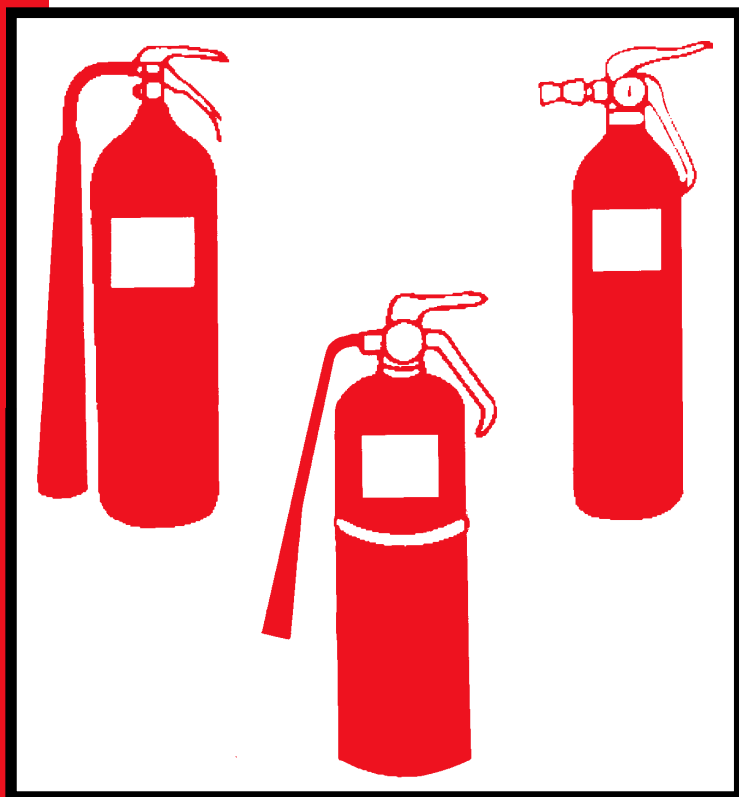




safe boating hints for

Fire Extinguishers



STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF BOATING AND WATERWAYS

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Fire Extinguishers

Fires and explosions are two of the leading causes of property damage to pleasure boats, according to Department of Boating and Waterway accident statistics. Gasoline misuse causes most boat fires. An unchecked fire in a plastic or wood-hulled boat will burn the boat to the waterline or result in sinking the boat. A quick response with a fire extinguisher may save your boat—and your life!

The Law Concerning Extinguishers

All motorboats shall carry fire extinguishers accepted by the U.S. Coast Guard. Exceptions are outboard motorboats less than 26 feet in length, not carrying passengers for hire, without permanently installed fuel tanks and which do not have spaces where explosive or flammable fumes can collect. The size and number of fire extinguishers required for marine use on motorboats depends on the size of the boat and whether or not there is a fixed extinguishing system installed aboard your boat. (See Table A for specific requirements.) Fire extinguishers are classified as a B-I or B-II (Coast Guard classification system) or 5-B:C or higher (Underwriters Laboratories classification system). A B-II is equivalent to a 10-B:C extinguisher. The minimum size approved for use aboard pleasure boats is the B-I or its equivalent, the 5-B:C size extinguisher.

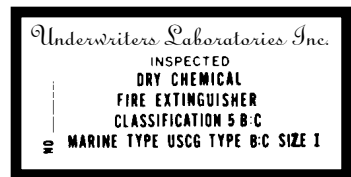
Table A
Fire Extinguisher Requirements

boat length	without fixed extinguishing system in machinery space	with fixed system in machinery space
Less than 26 ft.	1 B-I	None
26 ft. to under 40 ft.	2 B-I or 1 B-II	1 B-I
40 ft. to 65 ft.	3 B-I or 1 B-II and 1 B-I	2 B-I or 1 B-II

All extinguishers must be readily accessible (preferably not stowed next to common fire sources), and they must be kept in a serviceable condition. REMEMBER, the number required by law is the minimum. Extra extinguishers provide additional safety.

Look for the Label

Not all fire extinguishers available to the public are acceptable for use aboard recreational boats. An extinguisher is suitable for marine use when, in addition to any other markings, the extinguisher bears **either**:



1. A label identifying the extinguisher as listed with Underwriters Laboratories (UL) and of a type described in Table B. UL listed extinguishers for marine use must bear a UL rating of 5-B:C or higher, **or**
2. A label of a recognized testing laboratory that indicates the extinguisher is Coast Guard approved or specifies "Marine Type United States Coast Guard" (see sample label).

Types of Approved Portable Extinguishers

There are currently three types of fire extinguishers approved and available on the market for marine use: Carbon Dioxide (CO₂), Dry Chemical, and Halon. Foam extinguishers manufactured after 1965 have not been approved for marine use. Foam extinguishers that were made prior to 1965 and were Coast Guard-approved still meet the legal requirements as long as they are in serviceable condition.

Dry Chemical



Carbon Dioxide



Halon



All carbon tetrachloride extinguishers and others of the TOXIC vaporizing-liquid type, such as chlorobromomethane, are not approved and are not accepted as required fire extinguishers on any motorboats.

In choosing a fire extinguisher, you should become familiar with the characteristics of each type and determine which would best suit your particular boating needs. Table B will provide you with information about the different types of extinguishers.

No matter which extinguisher you choose, its success in putting out a fire will depend on whether the extinguisher is:

- In good working order. In addition to regular maintenance, check frequently for leakage, tampering, corrosion, or damage. Recharge or replace after any use.
- Properly located. Put an extinguisher in a place where it can be found quickly in an emergency. Also, place it a safe distance from potential sources of fire (engine, stoves, etc.).
- The proper type for the fire. (See Table B.)
- Used before the fire becomes too big. Portable extinguishers are designed to put out small fires, not large ones. The discharge time of many extinguishers is 8 to 15 seconds. Be aware that deep seated fires that appear to be out may start up again (reflash), if there is sufficient heat below the surface. The possibility of reflash and the short discharge time of an extinguisher are important reasons for carrying extra extinguishers on board.



Photo by the Napa Register






Fire Prevention

The best time to become concerned with fire is before it happens. Almost everyone knows something about fire prevention, but many boaters have a false sense of security with all of the water around. Remember, **MOST FIRES ARE PREVENTABLE**. Here are a few easy checks and precautions:

1. Keep your entire fuel system in good condition. Check tanks, lines, connections, fuel pump, and carburetor periodically for leakage. If a leak is spotted, stop the flow, wipe up the spill, discard the cloth in a safe place, ventilate the area until the smell of gas is gone...then get under way. **LISTEN TO YOUR NOSE!**
2. When fueling your boat, turn off all electrical and internal fuel systems (heaters, stoves, refrigerators). Pilot lights and galley stoves have caused many deaths at the fuel dock. Before leaving the fuel dock, all boat spaces should be ventilated. If your boat is equipped with a blower, make sure to run it for five minutes before you restart an engine after fueling.
3. **KNOW HOW TO USE YOUR EXTINGUISHER.** All hands on the boat should read the instructions for use printed on the extinguisher. If a fire occurs, quickly locate its source. Do not discharge the extinguisher merely in the general direction of the fire, but rather at the base of the fire, in sweeping motions. This is the most effective action to suffocate the fire at its source.
4. Develop a fire plan so that everyone knows what needs to be done to fight a fire in any part of the boat. A fire plan should include how to use the radio and the recognized distress signals needed to get help.

In the event a fire does break out aboard your boat, immediately have everyone put on a life jacket. (Life jackets should be easy to get to and stored away from potential fire sources.) Remember, your best chance for survival is to stay with the boat and put the fire out. In those cases where the fire cannot be put out or there is a high risk of explosion, you should be ready to leave the boat, but only as a last resort.

Table B
Approved Fire Extinguishers

	Carbon Dioxide	Dry Chemical	Halon
Fire Suitability	<p>①</p>  	<p>Ordinary Dry</p>  <p>Multipurpose Dry</p> <p>②</p> 	<p>③</p> 
Extinguishing Effect	<ul style="list-style-type: none"> • Smothering, some cooling 	<ul style="list-style-type: none"> • Smothering • Chemical reaction interferes with combustion process 	<ul style="list-style-type: none"> • Chemical reaction interferes with combustion process
Suggested Maintenance (Consult maintenance suggestions on extinguisher labels) ④	<ul style="list-style-type: none"> • Weigh and tag , semi-annually (if 10% weight loss, recharge) • Hydrostatic test, 5 years 	<ul style="list-style-type: none"> • With visual indicator: check pressure gauge, monthly • Without visual indicator: weigh and tag , semi-annually • Frequently invert and solidly hit the base to loosen extinguishing agent • Hydrostatic test, 5 years 	<ul style="list-style-type: none"> • Check pressure gauge, monthly • Hydrostatic test, 12 years
Corrosive/Residue	<ul style="list-style-type: none"> • None 	<ul style="list-style-type: none"> • On class C fires clean up promptly to prevent corrosion 	<ul style="list-style-type: none"> • None
Operating Precautions	<ul style="list-style-type: none"> • Do not touch discharge horn when in operation. • Use caution in unventilated areas - depletes oxygen supply 	<ul style="list-style-type: none"> • Irritating if breathed for long periods • Use caution in closed areas - reduces visibility, causes disorientation • On small flammable liquid or greas fires, initial discharge at close range may cause spreading 	<ul style="list-style-type: none"> • Avoid high concentrations • Do not touch discharge horn when in operation (models available with out discharge horn) <p>⑤</p>
Additional Characteristics	<ul style="list-style-type: none"> • Not as effective in open areas when there are winds or drafts 	<ul style="list-style-type: none"> • Suitable for use in open areas 	<ul style="list-style-type: none"> • Strong wind currents may disperse the extinguishing agent too rapidly

Notes:

- ① Limited Use on Class A fires.
- ② Less effective on deep-seated Class A fires.
- ③ Intended for use mainly on B:C fires. Some may have class A rating.
- ④ On all fire extinguishers: check for leakage, tampering, corrosion or damage. Recharge after use.
- ⑤ Products from decomposition relatively toxic. Normally, only small quantities of the by-products are formed. Unpleasant, acrid odor serves as a warning of presence of toxic by products.

Classes of Fires

Portable fire extinguishers are classified by number and letter. The number indicates the size of fire the extinguisher could put out. The higher the number, the more fire it will extinguish. The letter designates the type (class) of fire it will put out.

Ordinary Combustibles:



Flammable Liquids:

Gasoline, solvents, grease, oil, some paints



Electrical Equipment:

Wiring, fuse boxes, energized electrical equipment



BOATING SAFETY CLASSES explaining required and recommended equipment for small boats and offering training in good seamanship are conducted throughout California by the U.S. Coast Guard Auxiliary, the U.S. Power Squadrons and certain chapters of the American Red Cross. For information on Coast Guard Auxiliary and Power Squadron classes, call (800) SEA-SKIL (732-7545) or (800) 368-5647. The Department of Boating and Waterways offers a free home study course entitled *California Boating Safety Course*. For more information, e-mail us at pubinfo@dbw.ca.gov, or phone (916) 263-1331 or tollfree (888) 326-2822, or write: Department of Boating and Waterways, 2000 Evergreen Street, Suite 100, Sacramento, California 95815-3888. Visit our Website at www.dbw.ca.gov.