

GEARHEAD

PORTABLE FIRE EXTINGUISHERS

Fire is a topic that should grab every boat owner's attention. Few onboard emergencies compare with this one, and with good reason. Boats typically are a collection of highly flammable materials, from fuel and fiberglass resin to joinerwork, insulation, and upholstery. To make matters worse, boats have relatively poor ventilation, so the smoke and fumes emitted by onboard fires are especially noxious.

The rapidity with which a shipboard fire can spread is alarming indeed. Some studies suggest that fires double in size every minute, particularly in the presence of highly flammable materials. Therefore, the best defense is prevention. Avoiding the most likely causes of onboard fires makes good sense—topping the list are non-ABYC-compliant shorepower and DC electrical systems, galley/stove mishaps, and engine exhaust system malfunctions or design flaws.

Classifications for portable fire extinguishers can be confusing; these extinguishers typically are divided into two categories. USCG marine fire extinguisher classifications include B-I and B-II. The suffixes "I" and "II" refer to the size of the extinguisher, which is dependent on the type of agent used. A Type B-I extinguisher, for instance, holds 2 lb. of dry chemical agent and 5 lb. of carbon dioxide. (The dry chemical agent may be ammonium phosphate, a yellow powder often referred to as "tri-class" or "ABC" that is corrosive and harmful to electronics and other gear; or it may be sodium bicarbonate, a white powder that is not corrosive but is less than ideal for contact with sensitive electronics and running engines.) UL/ANSI ratings simply indicate the class of fire that an extinguisher is designed to fight. "A" indicates wood, cloth, paper, and



Portable fire extinguishers are available in a variety of configurations, each with its own intended use. For small electrical or electronics fires, a unit like the one shown here—a 5BC that contains 5.5 lb. of FM-200 clean agent—is ideal.

fiberglass/plastics; "B" is fuel, oil, thinners, paints, etc.; and "C" is energized electrical equipment. Once electrical equipment has been de-energized, a "class C" fire becomes a "class A" fire. Any fire extinguisher you purchase for your vessel should carry a USCG approval and rating.

The requirements established by the USCG and ABYC for portable fire extinguishers used aboard recreational vessels should be considered nothing more than the minimum. Of the two, the ABYC's requirements are more stringent, calling for four portable extinguishers for vessels between 40 and 65 feet. The USCG regulations are a bit more complex, as they make allowances for

fixed fire-fighting systems (ABYC guidelines make no such distinction). If no fixed system is installed, the USCG calls for three Type B-I extinguishers or one B-II and one B-I for a vessel in the 40- to 65-foot range. If a USCG-approved fixed fire extinguishing system is installed, a vessel of this size may have two Type B-I extinguishers or one B-II. That's right; it's possible for a 40- to 65-foot vessel to meet USCG requirements with a single portable fire extinguisher—if it is equipped with a fixed engine room system.

ABYC guidelines also make it clear that a portable fire extinguisher should be installed near the galley. It should be located opposite the stove, rather than next to it or above it. The guideline goes on to say that a user should not have to travel more than half the length of the boat to reach a portable extinguisher, or

more than 33 feet, whichever is less. Imagine how long it would take you to cover 33 feet when a fire is raging—a veritable eternity. Considering their reasonable cost, I would prefer to see a portable extinguisher in every cabin and compartment, as well as outside the engine room access hatch or door. With this approach, you can never be trapped in a space without some means of fighting a fire.

Up to this point I've discussed several worst-case scenarios: a fire that rages in your galley or engine room, or one that prevents your egress from a compartment. Such fires must be extinguished at all costs. While all fires are cause for alarm,

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there are other types of fires that are relatively easy to extinguish and, provided they are extinguished quickly, cause little initial damage.


A few years ago, I was aboard a vessel that was moored dockside when a fire started. The owner had been flushing the potable water tanks using the boat's water pump, and the pump or its associated wiring overheated, igniting the wire's insulation. A portable dry chemical extinguisher was aboard, and the owner used it to good effect, extinguishing the fire quickly. However, the pump was located in the engine compartment, and the engine, which was running, ingested the dry chemical. While I can't be sure, I suspect this caused the valves to stick open, allowing them to be struck by the pistons,

causing thousands of dollars' worth of engine damage.

Another time, I dealt with the aftermath of an inverter fire that had been extinguished using a dry chemical agent. The cause of the fire was an un-fused conductor that had overheated, igniting insulation. The technician who was aboard when the fire occurred successfully doused the flames with the dry chemical, but in his exuberance, he also dusted the inverter for good measure, damaging it beyond repair.

Clean-agent fire extinguishers, like the fixed units that are routinely installed in engine rooms, are well suited to extinguishing such minor electrical fires. Portable units are designed specifically for use on "class C" fires; they leave no residue or powder, and their agent is

nonconductive and noncorrosive. (I use FM-200 series units from Sea-Fire, which are available in three sizes; see www.sea-fire.com/SF/ProductsSeaFire/Portable/FireExtinguisher/FireExting.html.) Had a portable clean-agent fire extinguisher been available in either of the aforementioned cases, it could have been used to extinguish the blaze, effectively reducing collateral damage.

Keeping a portable clean-agent fire extinguisher aboard, preferably in a central location near the electrical panel and primary electronics, makes good cruising sense.—Steve D'Antonio 

For more information on ABYC fire extinguisher guidelines, visit this issue's Web Extras at www.passagemaker.com.



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