

That Was A Little Scary

By Chris Edmonston

Our team discovers that using a fire extinguisher is not as easy as they thought

Whether it's because of the tight quarters on a boat, or the sense of isolation and distance from help — fire has to be one of the greatest fears for mariners. Yet many boaters, including nearly half those involved in reported boating accidents, don't even have a fire extinguisher aboard. Foundation Findings #46 set out to revisit the topic of fire extinguishers, first examined back in 1988, to shed light on this important topic.

Marine-rated fire extinguishers are designed for the marine environment. Extinguishers are further rated by the amount of chemical and by the type of fire they're designed to fight. A simple rule of thumb is that class A fires are solids, class B fires are liquids, and class C fires are energized electrical fires. For example, a 'BC' extinguisher is designed to fight either a liquid or electrical fire.

Since our original testing in 1988, little has changed in fire extinguisher technology. So one of our primary goals in this round of testing was to focus on how an extinguisher is used, and to relay that information using videos, which may be found on the Foundation web site at www.BoatUS.com/Foundation/findings/46.

Our testing involved the observation of both experienced and inexperienced volunteers attempting to put out various types of fires. Volunteers were presented with a typical boating scenario consisting of either a class A or class B fire, and an extinguisher, and told to put the fire out — with no preliminary training. The scenario instructor told the volunteers to imagine their boat was on fire, and that they had to use a fire extinguisher to save their guests, their boat, and themselves. What we found was that in the heat of the moment, reading the directions on the extinguisher was often an afterthought, particularly for the inexperienced

users. One tester, Rhett, stated that he “was in such a hurry” that he didn't read the instructions. Another tester, Jackie, said she “was panicking” and likewise didn't read the instructions. She went on to say, “I just did what came naturally.”

As a result, improper technique was the norm. This occurred despite the fact that manufacturers do a commendable job of placing easy-to-understand instructions on their product, along with a clear listing of the types of fires the unit is designed to fight. Improper technique often occurred right from the start — with some volunteers not even realizing the need to pull out the safety pin, with one tester, Shonda, exclaiming, “I can't get the thing to work!” in exasperation.

There were 18 volunteer testers, of whom only two, James and Jose, had ever used a fire extinguisher in a real-life fire. Only a handful of testers knew the differences between an A, B or C type fire. One question asked of all the testers was to estimate the amount of time one could expect a fire extinguisher to discharge chemicals. Estimates ranged from 10 to 15 seconds up to five minutes, with one tester stating that she hoped that an extinguisher would last “until the fire was gone.” All of the units tested were designed to last for approximately 10 seconds of use — a far cry from five minutes.

How did the expectations of our testers affect the testing? Surprisingly, only one tester used the entire contents of the extinguisher. Most testers simply stopped using the extinguisher once they thought the fire was out, which led to frequent flare-ups. One tester stated that he'd “use what was necessary and save some to see what happened next.” Perhaps this is the perfect example of human nature. But time after time, it proved to be the wrong way to put out a fire.

The primary method of fighting small fires with a portable fire extinguisher is called the PASS method (Point, Aim, Squeeze, and Sweep). While the proper method is to sweep back and forth at the base of the fire, it was common to see volunteers aim at the top and work their way down. When volunteers were asked where they were aiming, comments ranged from “at the base” to “center of mass” to “just above the fire.” Depending on the size and type of fire, improper aim can make firefighting more difficult. Despite the small stature of the tested fire extinguishers, they all created large billowing clouds of chemical. This frequently made aiming more difficult and also obscured flare-ups.





Lessons Learned

The size and type of your boat is the determining factor for the quantity, type, and storage of your fire extinguishers. Coast Guard requirements, which are only a minimum, (available at www.BoatUS.com/foundation/guide/equipment_8.html), call for relatively few extinguishers — vessels under 26 feet in length need to carry only one portable, while vessels between 27 and 40 feet in length only require two. Extinguishers must be capable of fighting B or C class fires which, according to BoatU.S. marine insurance statistics, account for over 80 percent of fire claims. Not too coincidentally, most of the fire extinguishers available for purchase are BC rated. So having a BC rated unit is all you need, right? Well, yes and no.

As we discovered, the type of extinguisher you have really does matter. A unit rated to fight a liquid or electrical fire might be just fine for the engine room, but might be inadequate for the galley or cabin. During our tests, type A fires, when fought with a BC unit, almost always flared back up, particularly when a tester used an improper firefighting technique. That's why the American Boat and Yacht Council (ABYC) recommends that boats under 65 feet use ABC-rated extinguishers. Having an adequate number of fire extinguishers is just as important. Having a single unit kept in the engine area will do no good if you can't reach it because the area is already on fire. Preparing to fight a fire might not be common practice, but with a little foresight and the right equipment you can be ready for just such an emergency.

To Learn how to put out a fire properly, visit www.BoatUS.com/Foundation/findings/46. Our educational videos will take you through the steps necessary to effectively fight a fire on your own boat.

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