

# Fire In The Hold!

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Let me see – we’ve got a boat afire, carrying 100+ gallons of high-octane fuel and much of what will be burning is likely to be fiberglass, creating toxic smoke. Oh, and if I happen to have a fire hose, I’m loading the boat with water. And, wait, if it doesn’t work, I get to abandon ship into a cold and unforgiving sea. Have I got this all now? Oh, I forgot. It is highly unlikely that anybody will get to me in time to help me suppress the fire – so I am it.

This column is about dealing with that.

## Fires

Fire prevention professionals quote that on average a fire will double in area every 5 minutes. At that rate, it wouldn’t take long to engulf an entire boat. When taking the tongue-in-cheek introduction and put it together with how fast a fire can engulf a boat, it doesn’t sound like there is much hope should something develop while underway. But there are things you can do – both before and during, that will buy you time where time is of the essence.

First, they don’t start most often due to engine issues – plain old frayed wires typically create the most issues (although I suspect some of these electrical fires could be traced back to the “DIY Electrician”, i.e., the boat owner.) Industry studies pencil out this way:

<u>Cause of Fire</u>	<u>Percentage</u>
Wiring or appliance failure	55%
Overheated Engine	24%
Fuel leak	8%
All Others*	13%

\* dropped match, stove spills, in-boarded flare “slag”, etc

## Suppression Preparation

Admiral Halsey once remarked, “for 1,000 years, safety of life at sea has started at the dock.” So, before we get underway, we have to be sure that we have the right type and (minimum) number of fire extinguishers.

First, fire extinguishers themselves are classified into “A”, “B” and “C” types. The easiest way to remember what they are used for is thus:

“A” – the fire creates **ash** – paper, bedding, clothes, wood, etc...

“B” – the subject afire can **boil** – “POLs” or petroleum, oils and lubricants...

“C” – a **charge** runs through it – electronic equipment...

There is a type “D” for chemical/com-bustible metals fires such as would be created by the magnesium in a flare but I have never seen it

successfully used before the flare involved surrounding materials – get the flare off the boat [let the fish below deal with it] and then deal with the fire. But be aware – that magnesium will likely burn straight through the fiber glass hull into the sea if you don’t somehow get it off the boat and into the water. BBQ tongs anyone?

They also come in sizes (pounds of suppressant). For the private boater, size 1 (I) or 2 (II) are the most common and manageable. The question is really, “How many do I need for my size boat?” Per USCG regulations, the answers are:

All power boats, except outboards, less than 26 feet and of open construction must carry **one B-I**, U. S. Coast Guard approved fire extinguisher.

All power boats 26 feet to less than 40 feet must carry **two B-I** or **one B-II U. S. Coast Guard approved fire extinguishers.**

40 feet to less than 65 feet must carry **three B-I** or **one B-II and 1 B-I** U. S. Coast Guard approved fire extinguishers.

Larger vessels must adhere to Federal regulations about automatic fire-suppression systems in enclosed spaces.

Can you have more, Bunky? Of course. I have 3 on my 25’ Parker. Where? One on the starboard bulkhead, inside the sleeping compartment. One in the foot well leading from the pilothouse to the sleeping compartment. And one in the pilot house on the port bulkhead.

## Suppression Material

Well, what are the suppressants and what is best for my boat might be the next set of logical questions. As would seem obvious to even the casual reader, carbon dioxide (CO<sub>2</sub>) is one suppressant. It smothers the fire by withholding oxygen from the “fuel-oxygen-heat” equation. CO<sub>2</sub> has one not-so-obvious draw back. If you use it on a type-A fire, the high pressure of the CO<sub>2</sub> coming out of the canister may very well spread the fire. So, hold CO<sub>2</sub> aside for a moment.

Another suppressant type is “dry chemical.” It can handle type “A”, “B” and “C” fires but it also has a problem. The chemical suppressant tends to be corrosive in a marine environment. Yikes... So hold that dry chemical aside too.

What tends to be best, at least for “A” and “B” fires, is foam. It smothers the fire like a blanket. The foam is water-based so the use of it on an electrical fire (“C”) can be problematic as it may give a medium for the electricity to reach the salver – you! Of course, in a private boat such as found in our area, a foam extinguisher will work just fine for your chart plotter that shorted out. I just wouldn’t use it

in an environment where a generator is putting out high voltage power to a large vessel with a myriad of electronic needs such as A/C, TV, radar, microwave oven, refrigerator, etc. That much juice is clearly something you don’t want to be in the middle of!

## Where Do I Keep The Extinguishers?

As I noted above, keep them where you can get to them – plus the sleeping berths. If you awake to a fire, you may have to fight your way out of it. Every other extinguisher should be kept in a convenient place – near the galley but not in it, near the engine but not within the engine space, etc. Use common sense.

## Boats Afire – Now What!??

Time is of the essence. As skipper, take over as fire suppression lead and start barking orders. Recognizing that you will want to do all of these things at the same time, here they are:

Shout, “Fire Aboard! Everybody in life jackets!” If you do have to abandon ship, you are prepared.

Aim the fire extinguisher at the base of the flame, not the flames themselves. You are seeking to smother the source of the fire, not the flames per se. Move the fire extinguisher back and forth across the source of the flame to spread the coverage.

If the fire has a source such a flowing charge or liquid, and you can get to a shut-off valve, shut it off and starve the fire.

- Call the USCG and issue a May-Day.
- “May-Day, May-Day, May-Day”
- Vessel “name” afire, location as follows (lat/lon if you have a GPS is perfect), # of people aboard.
- Wait 10-20 seconds (you don’t have all day - but you have to let the USCG Watch Stander respond) and, if no one responds, start the sequence again. Keep transmitting until someone responds or you have to leave the boat.
- Turn the boat so the fire is down wind and proceed ahead as slowly as possible to maintain steerage. This will buy you time as the fire can’t fight its way upwind easily.

Please be sure to call the US Coast Guard – ASAP. Get the rescue-starts-now clock as soon as possible. They won’t get there in time to stop the fire – but they will task someone or something to get there in time to fish you out of the water if you have to abandon ship.

BTW, if you are interested in being part of USCG Forces, email me at **JoinUSCGAux@aol.com** or go direct to the DISR Human Resources department, who are in charge of new members matters, at **DSO-HR** and we will help you “get in this thing...”