



## From the Captain of the Port



Courtesy USCG.mil

### Vessel Afire!

By Vincent Pica

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One of the most frightening circumstances to be caught in is a boat afire. It is loaded with high-octane fuel, creating toxic smoke, using water to fight the fire can sink the boat, and leaving the boat may entail going into another hostile environment – cold, unforgiving water. It doesn't sound like there are many, if any, good alternatives. Fire prevention professionals say that, on average, a fire will double in area every five minutes. At that rate, it wouldn't take long to engulf an entire boat. Time is of the essence and it's highly unlikely that anyone can get to you in time to assist in the fire suppression.

#### Causes of Fires

According to many studies such as those conducted by Boat U.S., surprisingly, the engine is not the most likely source of fires on boats – electricity is. More than half of boat fires (55%) start with wiring or appliance failures. Next come fires started by an overheated engine, but they are less than half as likely (24%). Less than 10% of boat fires (8%) start with a fuel leak. Of course, those can reach catastrophic proportions if the fire backs up into the tank itself. The rest is a mixed bag of “miscellaneous” – dropped match, stove spills, flare “slag” landing on the boat, etc.

An electrical fire such as the one that starts from a frayed or chafed wire is very different than one fed by a malfunctioning inverter or generator. The first is going to act like someone was smoking in bed – material is aflame but not being fed by the electricity itself. But it counts as the cause of the fire.

#### Types of Fire Extinguishers and Who Needs What

Fire extinguishers are classified into “A”, “B” and “C” types. (There is a type “D” for chemical/combustible 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 and deal with the fire.) 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

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

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

All powerboats 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.

What are the suppressants and what is best for your boat? 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 drawback: 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. Another suppressant type is “dry chemical.” It can handle type “A”, “B” and “C” fires but the chemical suppressant is corrosive in a marine environment. 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 using 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, a foam extinguisher will work just fine for your chart plotter that shorted out, but I 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!



*Safety at Sea Seminar participant Kevin Dailey practices dousing a fire.*

**Where Do I Keep The Extinguishers?**

Mount 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.

**Boat's Afire – Now What?!**

Act quickly. If you have help aboard, use it. Have someone turn the boat so the fire is downwind and proceed ahead as slowly as possible to maintain steerage. This will buy time, as the fire can't fight its way upwind easily. Have the helmsman call the USCG on VHF-16. Get the "rescue starts now" clock going. While reaching for the extinguishers, yell – "everybody into life-jackets!" If you do have to abandon ship, you are prepared. Aim the extinguisher at the base of the flame, not the flames themselves – you want to smother the source of the fire. Move the extinguisher back and forth across the source of the flame to spread the coverage. If the fire has a source, such as a flowing charge or liquid, and you can get to a shut-off valve, shut it off and starve the fire. ♦

*Captain Joe Vojvodich is the Captain of the Port and Sector Commander for US Coast Guard Sector Long Island Sound. Captain Vojvodich is responsible for all active-duty, reservist and auxiliary Coast Guard personnel within the Sector. Vin Pica, Chief of Staff for the First District Southern Region in the US Coast Guard Auxiliary, works closely with Captain Vojvodich and his staff to promote boating safety in the waters between Connecticut, Long Island and 200 nautical miles offshore. Sector Long Island Sound Command Center can be reached 24 hours a day at 203-468-4401.*

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