

# Onboard Fires: Lessons Not Learned

by Steve D'Antonio

Three years ago, I created a folder on my computer desktop for stories of fires aboard recreational and commercial small craft. Today, it contains 11 files, each a different scenario. While we've covered fire and fire detection in *Professional BoatBuilder* in the past, onboard fires, although infrequent, persist and often involve serious injuries or death. It's worth reminding ourselves how fires start and how avoidable they are.

I share the following three stories for the lessons they offer.

**Island Lady** is a 72' (21.95m) cold-molded passenger-carrying vessel used as an offshore casino. On January 14, 2018, off the west coast of Florida, an onboard fire caused 15 injuries and one fatality. It started with an overheating engine, for which the captain received an alarm. Instead of shutting the engine down, he throttled back and allowed it to idle while returning to port. The National Transportation Safety Board (NTSB) report concluded that exhaust gases from the idling engine lacked cooling water and ignited a section of fiberglass exhaust pipe in an "uninhabited" lazarette that, compliant with U.S. Coast Guard rules, was not equipped with smoke- or fire-detection devices. Also cited as contributing to the fire's severity were fuel-tank sightglasses made of plastic tubing, and valves that did not automatically close. The captain was credited with intentionally beaching the vessel, allowing those onboard to abandon ship near land, and bringing the vessel closer to first responders. As far as I can determine, the vessel was not equipped with high-temperature-exhaust alarms, a feature found on ABYC-compliant recreational yachts. The NTSB noted that proper preventive maintenance of the engine's raw-water pump might have prevented this cascading failure.

**Andiamo**, a 120' (36.58m) fiberglass motoryacht, caught fire and burned while dockside in Miami in December 2019. There were no injuries or fatalities, but the \$6.8 million vessel was a total loss. An unattended open flame caused the fire. Because of a fault in the vessel's

computerized automated lighting system, lights in the guest cabin were inoperative, so a crew member lit candles in preparation for a guest's arrival. They were placed on a wood-veneer dresser top near a porthole with curtains. The NTSB report concluded that the fire started as a result of the candles' proximity to those flammable materials. The onboard fire-detection system was also out of commission at the time and was reported to have been so for two months. Representatives of the American Bureau of Shipping, the classification society that had classed the vessel until June 2019, inspected the system the day before the fire and noted that it was not functioning. Indicating how quickly the fire started is this passage from the NTSB report: "When the chief stewardess went down to the galley to get refreshments for the guest—she estimated about 3 minutes later [after lighting the candles]—the second stewardess and chef told her that they noticed 'a funny smell' in the main salon. The chief stewardess then opened the door to the main salon and saw a plume of black smoke about 4 feet high from the deck."

**La Dolce Vita**, a 100' (30.48m) fiberglass motoryacht valued at \$3.9 million, caught fire and burned to the waterline in March 2021 near Marquesas Keys, Florida. The crew and guests evacuated uninjured. The mate detected the fire, which started in the starboard generator enclosure. From the NTSB report: "Between 1700 and 1730, the mate detected an unfamiliar smell in the main cabin that he described as 'like plastic was burning.' He immediately proceeded to the engine room.... Inside, he noticed smoke coming from the sound-deadening enclosure that surrounded the starboard generator." Two dry-chemical fire extinguishers and the engine room fixed fire-fighting system were discharged, to no avail. About 40 minutes elapsed from the time the fire was detected to the time of the abandon-ship order. The generator had been replaced in April 2019, two years prior to the fire.

The NTSB report cites multiple factors contributing to the fire and its inability to

be extinguished, including [120VAC] engine room forced-ventilation fans controlled only from within the engine room [true of the generators as well], no dampers on engine room intakes [the report cites equipment noncompliance issues with the yacht's Cayman Islands registry], and failure to maintain generators in compliance with the manufacturer's requirements. "The genset manufacturer documentation recommended against using the unit in an area of high humidity for long periods and warned that oil, dust, and moisture were harmful to its units." High humidity? It was a seagoing vessel, making that a somewhat unrealistic requirement. The generator manual also recommended maintenance to keep the unit free of oil, dust, and moisture, and inspecting the voltage regulator (within the screw-secured metallic junction box) periodically to make sure electrical connections were tight and free of moisture and dust. Having encountered many overheated and charred wires in genset junction boxes, I believe that advice is sound.

There are multiple lessons to be learned from these events; most are obvious, and none are new. But *lessons are learned only if acted upon*.

Prevention is key, as is early detection. While firefighting capabilities are also important, seconds truly count, because onboard fires spread rapidly—particularly on fiberglass vessels. Every boat should be equipped with a functioning smoke-detection system, including in engineering spaces, behind electrical panels, and above electric thrusters and battery banks.

That is as essential to safety afloat as life preservers. **PBB**

**About the Author:** For many years a full-service yard manager, Steve now works with boat builders and owners and others in the industry as Steve D'Antonio Marine Consulting. He is an ABYC-certified Master Technician and sits on that organization's Engine and Powertrain, Electrical, and Hull Piping Project Technical Committees. He is also technical editor of *Professional BoatBuilder*.