

“KEEPING PACE” - #47

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KEROSENE HEATER FIRES:

The photograph below shows a rectangular shaped kerosene heater which has a gravity feed fuel system. A fire occurred sometime after the occupant of this bedroom went to sleep. It may be observed that there are burn patterns on the wall adjacent to the kerosene heater demonstrating that the kerosene heater is at the area of fire origin. From past experience, I was reasonably sure that someone had poured gasoline into this kerosene heater's removable fuel tank by mistake.

I took the kerosene heater for chemical analysis, in which a gas chromatograph was used to test for gasoline in the carpeting attached underneath the heater. None could be detected. Then the chemist tested for gasoline in the heater's cloth burner wick. None was present. Finally, the chemist tested for gasoline fumes in the (empty) fuel tank, and this test was positive for gasoline. This proved beyond any doubt that gasoline had accidentally been poured on top of the kerosene in the fuel tank. Since gasoline is lighter than kerosene, the gasoline did not enter the burner until the kerosene was used up. This can take from one to four hours or more, in my experience.

In the garage of the home, I found the gasoline fuel containers sitting right next to the kerosene containers. The accident pouring of gasoline into kerosene heaters has caused a number of fires which I have investigated.



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FIRE DEFENSE CASE:

This was a \$400,000 fire defense case which my clients won at trial in Indianapolis. Another expert claimed that a small part, shown below after it had been through an intense fire, had been installed improperly in a thermostat during manufacture, and consequently, the thermostat had caused the fire. The expert stated he could tell this because the ends of this small thermostat part were “warped.”



To test this assertion, I put four new thermostats of the same model into a campfire and demonstrated on a video that these pieces warped as a result of the heat from the fire, when the plastic resin was consumed away from the fiberglass cloth. The real cause of the fire was that a thermostat with a 180° F. maximum temperature setting was replaced on the day of the fire with one having a 595° F. maximum setting. In addition, the new thermostat rotated in the opposite direction from the old one. The owner had accidentally set it to “HIGH” rather than “OFF.” Finally, no high temperature limit thermostat was installed when the company converted this water bath to an oil bath on the same day this fire occurred.

Sincerely,



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Forensic Engineer