

## “KEEPING PACE” - #85

(Page 1)

### \$1 MILLION FAST FOOD RESTAURANT FIRE:

On October 1, 1996, a deep fat fryer caught fire in a fast food restaurant near Louisville, Kentucky. The fire destroyed the restaurant, with a loss of roughly one million dollars. With another expert's assistance, I used ohmmeters to measure the electrical resistance of the contacts in the deep fat fryer's control relay, as shown below. I determined that two of the three contacts in this relay were stuck in the "On" position, because they had welded together over a long use. The stuck contacts had left one of the three heating elements in the fryer continuously energized, and that caused the grease in the fryer to ignite.



The fryer was so old that it did not have the re-design accomplished in the industry about 1980. At that time, deep fat fryers were re-designed so that both relays had to stick in the "On" position before a fire occurs.

I represented the servicemen who were sued simply because they had serviced the fire extinguishment system in the restaurant. At my deposition, I opined that there was no defect in this system, and that no fire extinguishment system has a 100% chance of preventing a fire. For the actual cause of the fire, I blamed the servicemen who had worked on this deep fat fryer. They had replaced one relay about three months prior to the fire without also replacing the other very old relay (\$40). After my deposition, this case settled, with my client insurance company paying about 1.5% of the loss.

## “KEEPING PACE” - #85

(Page 2)

### WE NEVER COOK ON THAT RANGE!

That's what his insured told an expert, so the expert blamed the microwave oven whose bottom surface is shown below. This microwave had been mounted above the range, and the fire was confined to the general area above the range. However, when I saw the intense burn pattern on this bottom of the microwave, I was convinced it was attacked by fire from below. The severe rusty coloration was not repeated anywhere inside the microwave. Neither was the white coloration, which indicates even more heat than the rusty coloration does.

In addition, a glass lamp bulb in the bottom cavity shown by the arrow had melted. After I pointed out these burn patterns, and because we could find no evidence of a malfunction inside the microwave, the plaintiff experts ended up agreeing with me that the microwave oven was a victim of a cooking carelessness fire on the kitchen range. It was not the cause.



Sincerely,



Frederick F. Franklin, P.E.  
Forensic Engineer