

“KEEPING PACE” -#78

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BEARING FAILURE CAUSES VAN FIRE:

This van caught fire while it was being driven. When I first examined the van, I thought the driver had driven on a flat tire, which then ignited. I have seen this before in semi-truck tire fires. But the driver was adamant that he did not have a flat tire, so I removed the left, rear axle and found a failed bearing and a scored axle. The bearing is made of steel, and I have never observed the heat of a fire to melt steel, which melts at 2500° F. So there was no question that the bearing was the cause of the fire, because the fire could not have caused the bearing to fail.

NO COPPER MELT ON NEON SIGN WIRING:



TWO SMALL NEON SIGN FIRES

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One of the best learning tools for a fire investigator is fires of very limited extent. Such fires often have only one possible cause in the entire extent of the fire damage. The photographs above show two very small fires caused by short circuit arcs in neon sign wiring. I examined all the wiring in both cases, and I could find no copper melt on the wires, anywhere, even though an electrical arc had definitely caused the fire.

In neon sign wiring, the voltage is very high (15,000 volts), but the normal full load current supplied by the transformer to the neon tubing is only 0.03 amperes. Even during a short circuit arc, the current is limited to less than two amperes. This sometimes does not produce enough energy to melt copper, which melts at 1980° Fahrenheit.

These small fires prove that neon sign wiring can cause a fire without leaving any tangible evidence on the wires at all.

Sincerely,



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Forensic Engineer