



“No Smoke? Time to use the TIC”

By: Carl Nix

With the recent addition of the integrated TIC on our SCBA's, I thought everyone could gain a vital lesson on how important this tool really is.

When you can see smoke and flames from a building on fire, it can help guide firefighters to areas that require immediate attention. Firefighters can quickly locate the fire and go to work extinguishing it. Most structural fire calls are from neighbors, bystanders, or occupants who see smoke coming from a structure. If we can see the fire, we can size it up and extinguish it.

What about the fires we don't see? These are the calls that come in from concerned citizens reporting a smell or funny odor in their house or place of business. When responding to some of these calls, we can often quickly see where a fire is smoldering by identifying paint that is blistering or smoke coming from a wall. Those clues are vital to identifying the fire and combating it. Sometimes, however, we don't have any clues, and that's when the thermal imaging camera (TIC) can be the most valuable tool.



Call #1

A few years ago, a call came in from a commercial business to investigate an odor in the building. A section of the business was being renovated, and the construction crew had been working on site all day. When the firefighters entered the building, they could smell an odor but there were no visible signs of smoke or smoke-related damage. They used the TIC to scan the areas where the construction crew had been that day, and it showed a hot spot in the ceiling. The crew removed the ceiling panel to find a smoldering fire and quickly extinguished the fire with water.

Using the TIC in this situation not only saved the firefighters a great deal of time but it also helped them to extinguish a potential fire that could have significantly damaged the plant. One of the most challenging fire conditions to control is the one we don't see. This fire was hidden and would have eventually ignited. The TIC most likely saved this manufacturer thousands of dollars in damage.

Call #2

Another call where smoke was not visible but harder to detect occurred late at night in a residential neighborhood. Several neighbors had called reporting a smoky smell in their neighborhood but couldn't identify specifically where it was coming from. When firefighters arrived on the scene, neighbors were outside but there was no smoke or flames coming from any of the houses. The firefighters grabbed the TIC and started scanning the houses, hoping to find any clues that might lead them to a hidden fire. While scanning the houses, they eliminated those that appeared gray on the TIC, but one house showed an area in an attic that appeared bright white. The firefighters now had something to investigate and found an attic fire. Had this fire gone undiscovered, the homeowners could have lost their home to a fire that would have eventually ignited through the roof. Smart thinking by neighbors to report an odor in their neighborhood and smart thinking by the firefighting crew to use the TIC to scan the houses prevented a significant fire and loss of property.

Both calls are perfect examples of why a TIC is critical to use when you don't see smoke or flames. Remember that a TIC does not see through most materials. What it does show is how warm the surface material is compared to the rest of the structure.

When scanning the interior wall and ceiling surfaces of a structure for signs of heat, stand at least 10 to 15 feet away. Most TICs can focus on objects three or more feet away from a surface, so scanning at this distance provides better results.

Notice that the two calls above used the TIC in interior and exterior environments. This is important to remember, because environmental conditions will affect your TIC. For instance, in bright sunlight, an exterior wall can often look to the TIC like a problem area when there is none. Similarly, multiple layers of a built-up roof can help hide the location of concealed fires underneath.

Also keep in mind when using a TIC to scan the interior of a structure to always rely on your firefighting experience and knowledge. Your TIC might identify a hot spot on a wall, but investigate first what might be behind that wall before you open it up. Using good judgment can save time and lessen property damage.

At some point, all firefighters will respond to a fire call where the fire is not visible. Finding hidden fires is challenging and can be costly if not detected early. The TIC is a great tool in a fire department's arsenal to help locate and control hidden fires. Use the TIC when you don't see smoke.



Carl Nix is a 32-year veteran of the fire service and a retired battalion chief of the Grapevine (TX) Fire Department. He serves as an adjunct instructor for North Central Texas College and a thermal imaging instructor for Bullard. Nix has a bachelor of science degree in fire administration and is a guest instructor for Texas A&M Engineering Extension Service's (TEEX) annual fire training in Texas.

Thanks, and Have a Great Month!
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