

## TOTAL BURNS

Lately we have been called to several fire scenes involving what could be described as a “total burn.” The discussion of “total burns” in Chapter 17 of *NFPA 921* at Paragraph 17.9 indicates that total burn fire scenes can present unique problems to the investigator. However, it has recently been my experience that some investigators often have no apparent difficulties identifying the origin and cause of a fire, despite those clearly-established unique problems.

The typical situation involves one party’s expert and counsel arriving at the fire scene, and the opposing expert quickly attempting to have everyone agree on an area of origin. The investigator first on the scene routinely points to the area of “greatest damage,” or to various burn patterns, in support of his or her conclusion on the area of origin.

If faced with this situation, stop. Decline to agree with the opposing expert, and point out that virtually all combustible material within the structure has been completely burned. Explain that each fuel package produced its own maximum heat release during the fire, and that the “area of greatest damage” simply reflects the relative fuel packages present and has no temporal relationship to the initiation of the fire. In a total burn scenario, burn patterns are rarely relevant as it is impossible to determine when during the fire the patterns were generated.

This typical scenario continues with one expert pressing the opposing side to agree that a suspect product lies within the prescribed area of origin of the fire. Rather than simply agreeing with such a proposal, counsel (who should always be present at the scene and involved in the investigation) should question the investigator as to how other areas of the fire scene can be *ruled out* as the area of origin.

Additionally, when eyewitnesses to a fire are being relied upon to help define the area of origin, all investigators and/or attorneys should immediately speak with those witnesses and obtain written statements for themselves. Statements taken by only one side of the litigation usually lead to one-sided versions of events, either intentionally or not.

As an example of this type of situation, I recently participated in an examination of a warehouse fire scene. The investigator for the potential plaintiff advised me when I arrived at the scene that local fire chief had used thermal imaging to identify the early stages of the fire as being in the southeast corner of the building. When the fire chief arrived at the fire scene, at my invitation, he showed all the parties where he stood when using the thermal imaging camera.

Interestingly, the fire chief stood at the front of the building and described detecting fire from left-to-right across the building. He then said that he went to the side of the building and observed fire exiting through the side wall, however, he did not use the thermal imaging camera from the side of the building and, thus, had no information as to how deep into the building the fire was burning at the time of his arrival. Although the usage of thermal imaging was of no actual value in identifying the area of origin for that total burn scenario, that usage was being relied upon heavily by the potential plaintiff's expert. Had we agreed to the area of origin based on the faulty information conveyed regarding the use of the thermal imaging device, the truth may have never come to light.

In another situation involving a total burn of a garage, one expert relied upon the "area of greatest damage," as well as eyewitness accounts of the early stages of the fire, to arrive at an area of origin. Despite the fact that the "area of greatest burn" has limited value in a total burn fire scene, the expert chose to place weight on the burn patterns and on the observations of the witness who had the *least* opportunity to observe the initial stages of the fire.

In fact, two other witnesses with better vantage points contradicted the one witness relied upon by the opposing expert. Despite that fact, the opposing expert explained to the parties at the fire scene examination that the witnesses had placed the initial fire at a particular product. While the goal of that one expert was to convince his opponents to agree on the area of origin, thus limiting the focus of the cause investigation to an area where a particular product was located, locating and speaking with all three eyewitnesses disclosed weakness in the expert's position.

My advice to experts and attorneys who are defending a product in a total burn or near total burn fire scene scenario is to thoroughly document the scene using photographs with a view toward supporting the conclusion that the fire could have started in any number of locations. If time and money allows, thorough arc mapping of the scene might further support the position that the fire's origin was distant from the subject product. Eyewitnesses should be sought out and statements obtained as soon as possible.

In summary, never agree to the area of origin in a total burn or near total burn fire scene unless the evidence of the origin is irrefutable.