

Ignitable Liquid Detection Canines and the Fire Scene Investigation

Ignitable liquid detection canines can be a significant tool in fire investigations if they are used correctly. In fact, Connecticut has led the way in the training and use of detection canines to assist the fire investigator in the collection of samples for laboratory analysis to determine the presence of an ignitable liquid.

As a private fire origin and cause investigator, I have investigated many fire scenes after the civil authorities have concluded their investigation, wherein they ruled out an incendiary fire through the use of ignitable liquid detection canines. On several of those occasions my investigation has turned up samples of fire debris that were confirmed by a laboratory to contain traces of ignitable liquids. Several of these investigations resulted in jury determinations of arson as the cause of the fire.

Often the positive samples were taken from beneath mounds of fire debris that I physically delayered from areas where burn patterns and other evidence indicated a potential area of origin. In many of these instances the detection canine has inspected the area but was unable to detect the presence of the ignitable liquid which was located at the bottom of the debris.

NFPA 921 Guide to Fire and Explosions, Section 16.5.4.7.6 (2004 ed.), cautions that “Canine ignitable liquid detection should be used in conjunction with, and not in place of, the other fire investigation and analysis methods described in this guide.” I believe that this point cannot be over emphasized. The fire investigator must assist the canine just as the canine is assisting the investigator. The canine should be directed to areas of interest that have been determined by the fire investigator to be potential areas of origin. When those potential areas of origin are deep in fire debris, care should be taken to delayer the debris to give the canine a better opportunity to assist in the detection of the presence of an ignitable liquid.

I have witnessed incidents where a manufacturer’s product has been wrongly accused of causing a fire after arson had been ruled out based mainly on the use of detection canines after the canines were introduced to mounds of fire debris without first delayering the debris. As a private investigator, I cannot assume that an incendiary fire is ruled out merely because detection canines were used by the authorities with negative results. This is especially true when I have made an independent determination that no effort was made by the officials to delayer the debris from the potential areas of origin before the canine was introduced to that area.

As a fire investigator, I know that the residue from ignitable liquids may still be present in “protected areas” of a fire scene even when the structure is burned to a total or near total loss. In a potential area of origin, I take samples from beneath floor molding, under doorway saddles, from between the sub flooring and the finished flooring and under the legs of furniture. These are areas that might afford protection for an accelerant that has been poured in a structure and which seeps into these areas and which may be protected from the ravages of the fire. Unfortunately, in total burn and near total burn

fires these areas are likely to be found under mounds of fire debris many feet deep. The fire debris becomes wet and compacted during fire fighting efforts making the detection of the ignitable liquid difficult for a canine to detect unless assisted by the fire investigator's delayering of the area prior to the introduction of the canine.

Accelerant detection canines are a valuable tool in the investigation of a fire scene. Just as the canine assists the fire investigator with his/her work, the fire investigator should assist the canine by delayering fire debris, when necessary, to give the canine a better opportunity to detect the presence of ignitable liquids.

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