



# **FIRE & ARSON INVESTIGATOR**

JOURNAL OF THE INTERNATIONAL ASSOCIATION OF ARSON INVESTIGATORS, INC.

July 2020 • Volume 71 • Issue 1

## **What's Inside:**

**A Methodology for the Identification and Interpretation of Damage on Electrical Wiring**

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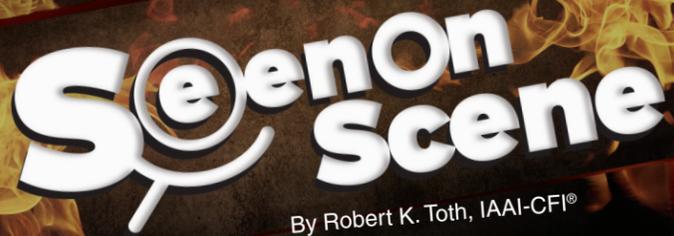
**Fire Cause Classification**  
**How the proposed changes to NFPA 921 may impact your courtroom testimony**



# Fire Cause Classification

## How the proposed changes to NFPA 921 may impact your courtroom testimony

By Thomas Ost-Prisco, Deputy District Attorney, Chester County, PA



By Robert K. Toth, IAAI-CFI®

### “Hand”y Lights

#### These are “Hand”y Lights

I believe I have reached a new height in “Geek Chic,” but my lovely wife thinks I may have reached a new low; I will let you be the judge.

Jay Leno collects cars, Imelda Marcos collected shoes; I tend to collect apps and lights. I collect apps and lights, not because I have such an affinity for these items, but I am always searching for little improvements. Searching for what is the next best thing and what will ultimately improve our service and product to our clients.

There can be no debate that lighting at fire scenes is essential in so many ways, from improving your safety to being able to document the scene with photography and video adequately. But alas, there are moments in most investigations where the light fails to reach the dark recesses of your scene. Shadows created by the debris in the room or the physical location within a structure does not allow adequate illumination. Sometimes proper lighting can't be achieved because casting light on an area with a flashlight prevents you from operating your camera, carrying a tool, or



Figure 1: These gloves from MNJ Gadgets, put bright light at your fingertips.

will fit over the latex gloves you wear and are also very (non intended) for lab exams and looking closely at fingerprint means without

### Fire Cause Classifications Removed from NFPA 921, 2021 Edition (Part II)

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salient points relevant to OSAC's stake in the development of

## A Methodology for the Identification and Interpretation of Damage on Electrical Wiring

In order to identify damage to electrical wiring, investigators must look for the characteristics of arc melting, melting by fire, and arcing that are presented in NFPA 921: Guide for Fire and Explosion Investigations (NFPA 921). The importance of correctly identifying damage to electrical wiring cannot be overstated. If an investigator cannot correctly identify this damage, the data collected may be of little use to the investigation.

This paper will present a methodology for the identification and interpretation of damage to electrical wiring using the characteristics detailed in NFPA 921, building on the methodology for the examination of the electrical system from a previous article.

By Cameron Novak, PE, AFT

#### INTRODUCTION

An arc, as defined by NFPA 921: Guide for Fire and Explosion Investigations (NFPA 921), is “a high-temperature luminous electric discharge across a gap or through a medium such as charred insulation” [1]. Arcs can easily produce temperatures in excess of 1649 (3000 ), which readily melt copper and steel. As fire impinges on electrical wiring, the insulation can degrade, allowing an arc to occur by conducting electricity through the charred insulation, by contact between the conductors or by contact between a conductor and an adjacent surface. Arcing can also occur from insulation breakdown independent of fire impingement. These arcing events result in characteristic damage that can often be easily observed after a fire. This damage may be helpful in defining an area of origin, determining the direction of fire spread, determining a sequence of events, or all three. The process of using the evidence of arcing in this manner has been called arc mapping, arc fault

