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

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**Endnotes**

Salient points relevant to OSAC’s stake in the development of the 2021 edition.

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**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 arcing, melting by fire, and alloying 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 as detailed in NFPA 921, focusing on the examination of the electrical system from a previous article.

**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 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. These arcing events result in characteristic damage that can often be easily observed.

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**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

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**“Hand”y Lights**

I believe I have reached a new height in “Geek Chic,” but my lovely wife thinks I may have relapsed 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 shortcomings 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 will extinguish you from operating your camera, carrying a tool, or working with your gloves. We need a light that is “Hand”y.

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**Interpretation of Damage on Electrical Wiring**

This distinction is reflected in a 2017 edition revision to NFPA 921 (NFPA 921 TC) to remove fire cause classifications from the NFPA Standards Development Process that NFPA 921 is part of. This is the second Part of an article that explores the important changes to NFPA 921, 2021 Edition.

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**Fire-Induced Melting of Materials**

Fire-induced melting of materials is a critical factor in the investigation of electrical fires. The process of using a high-temperature electric arc to melt materials can create characteristic evidence that can be observed and interpreted post-fire. Fire-induced alloying, also called eutectic melting, is a process that occurs when a material is melt by a high-temperature electric arc.

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