



NFPA 921: Past Present and Future

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ABSTRACT

The National Fire Protection Association has issued an edition of NFPA 921, *Guide for Fire and Explosion Investigations*, and every three years since 1992. However, there will not be a 2007 edition. Instead, the next edition of this document will be sometime in 2008.

The group of people responsible for much of this document is the Technical Committee on Fire Investigations. Membership on this committee gives an opportunity to be involved in the development of the only peer-reviewed, consensus document that addresses both the science of fire investigation and the methodology employed to properly perform the function.

The document had its initial edition issued in 1992, with subsequent editions coming in 1995, 1998, 2001 and 2004. Each of these editions brought an expansion of the document and in many instances angst to the fire investigation community. While this was happening, the legal community was keeping pace with the landmark cases of *Daubert* and *Kumho*.

This paper will serve to describe the development of NFPA 921 from “its only a guide” to “a gold standard” in fire investigation methodology. Throughout this process, the group of people that made up the Technical Committee was forced to make significant decisions that impacted the entire fire investigation community including the members themselves. Whenever these truly important issues have developed, the right choice has been made and the profession has benefited by them.

The paper will end with a description of what may be changed or added into the document for the upcoming 2008 edition.

INTRODUCTION

The investigation of fires has developed over the years with the pace of development increasing since 1992. In that year, the National Fire Protection Association [NFPA] issued the first edition of NFPA 921, *Guide for Fire and Explosion Investigations*. This paper will discuss what has transpired with this document and what one may expect in the upcoming edition.

MEMBERSHIP

In 1984, the NFPA Standards Council formed the Technical Committee for Fire Investigation [TCFI] with the charge of developing a NFPA document to address fire investigation. As of 1988, there were only sixteen principal members of the TCFI with two alternates. These members worked in relative obscurity and were the primary authors of the first edition. Of the original members, only three still serve: Patrick M. Kennedy, representing the

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National Association of Fire Investigators [NAFI], Richard L. P. Custer, the original Chairman, and Daniel L. Churchward, the present Chairman. As of the 2004 ballot, there are twenty-eight principal members with nineteen alternates and one Member Emeritus. Representatives of several organizations are members, including the International Association of Arson Investigators [IAAI], National Association of Fire Marshals [NAFM], American Society of Testing Materials [ASTM], National Institute of Standards and Technology [NIST], the Society of Automotive Engineers [SAE], and the International Fire Service Training Association [IFSTA]. Persons who have applied for appointment to this technical committee number in the hundreds. The increase in interest and participating membership are a measure of both how the significance of the document has grown, and the recognition of the document's standing in the fire investigation community.

Membership in the TCFI is not a prerequisite to participation in the TC's activities. The NFPA rules allow for non-members to participate as long as they follow a prescribed protocol. The TC Chairs have both taken a more relaxed view in that anyone who wishes to be heard may speak to the TC without previous notice as long as the discussion is not disruptive. This relaxed attitude has resulted in non-members attending the TC meetings [they are referred to as "Friends of the TC], sitting on Task Groups [TG], receiving information as it is distributed to the members, and participating in most of the decisions that need to be made at every meeting. The only thing they cannot do is vote. The ultimate consequences of the Friends' participation are improved communication with the fire investigation community, and technical input for text development.

BACKGROUND AND HISTORY

The initial work of the TCFI in 1985 was to review an existing NFPA document, NFPA 907M, *Manual for the Determination of Electrical Fire Causes*. This document had initially been prepared by the Technical Committee on Investigation of Fires of Electrical Origin. The years from 1985 when the TCFI first met through 1987 were spent re-writing NFPA 907M and submitting it to the Standards Council for acceptance. The 1988 edition of NFPA 907M was issued on 8 June 1988. In the 1995 edition, NFPA 907M was absorbed into NFPA 921.

From 1988 when the TCFI completed their work on NFPA 907M, until the present, the primary work has been on the development of successive editions of NFPA 921. The document was said to be on a "three-year fall cycle" which means a new edition every three years. This schedule has held from 1992 until the 2004 edition. At that point, the NFPA dropped their fall meeting and transferred all meeting votes to the Annual Meeting held each summer. Since the NFPA 921 document had to either shorten the cycle window of time to fit into 2007 cycle or extend the cycle to fit into the 2008 cycle, the TCFI requested and was allowed to "slip a cycle" and issue in 2008. With the amount of work planned by the TCFI for the 2008 edition, the delay of the document one year was imperative.

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1992 EDITION

The original edition of NFPA 921, issued on 17 January 1992 in Montreal, Quebec, Canada consisted of thirteen chapters covering the basic aspects of fire investigation. These chapters were:

1. Administration
2. Basic Methodology
3. Basic Fire Science
4. Fire Patterns
5. Legal Considerations
6. Planning the Investigation
7. Sources of Information
8. Recording the Scene
9. Physical Evidence Examination and Testing
10. Safety
11. Origin Determination
12. Cause Determination
13. Explosions

The TCFI choose to include these specific chapters because of the amount of time between when the committee was formed and when the first edition was issued. Much work and expense was incurred in getting to the point where the initial material was ready for print. Consequently, the feeling was to go with what the TCFI felt were the basic chapters for a fire investigation document. Other chapters that were nearly complete were forced to wait until the next edition. Although the NFPA did not put pressure on the technical committee to produce the first edition in 1992, the committee felt that they needed to get something out that reflected the extent of their work. If any pressure was brought to bear on the TC, it was from the individual member's employers, who had suffered the cost to attend and loss of productivity of that member.

Scientific v. Systematic:

One significant issue arose in the 1992 edition and it has come up in several subsequent editions. That issue was the use of the word "scientific" in the document. In the first edition, the second chapter was devoted to the basic methodology recommended by the TCFI for how to do a fire investigation. This methodology was the Scientific Method. However, there were committee members who objected to the use of the word "scientific" and urged the use of "specialized" or "systematic" as alternate choices. The argument was that fire investigators were being unduly burdened by asking them to conform to the perceived greater standard associated with scientific investigations. Although several members felt strongly that "scientific" should not be used in the document [to the point where one member resigned], the consensus of the TCFI was to include it. The correctness of this decision ultimately was confirmed in the United States Supreme Court¹ and has had substantial impact on the document and the profession as a whole.

In 1993, the U. S. Supreme Court issued the landmark decision, *Daubert v. Merrell Dow Pharmaceuticals*, known to many as just "Daubert." In this case, the Court addressed the question of expert witnesses and the manner in which they may be permitted to testify. From this decision, the Court set precedent for experts to be required to address the methodology used to reach their

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opinions, “This [the trial judge’s determination to allow the expert to testify] entails a preliminary assessment of whether the reasoning or methodology underlying the [expert’s] testimony is scientifically valid and of whether that reasoning or methodology can be applied to the facts in issue.” The discussion of the Court paralleled the discussion in the Basic Methodology chapter of NFPA 921 and was on the streets just one year after the 1992 edition was issued.

The impact of the TCFI’s decision to address fire investigation methodology as a scientific endeavor was to give the document instant credibility within the legal community and to allow the document to go forward without any substantive changes to bring it in line with the Supreme Court’s related decisions.² Several amicus briefs were filed by entities arguing against the Court’s ultimate decision, including one from an organization representing a large segment of the fire investigation community.³ This perspective, which did not prevail, has caused the opponents of the legal precedent to reverse their opposition, accept the Court’s decision and begin to support NFPA 921 as it relates to this matter.

Other court decisions have followed in both state and federal venues that have accepted NFPA 921 as authoritative and have cited it in their decisions.^{4, 5, 6, 7} The TCFI made an often-stated decision that nothing would be put into the document that was not scientifically valid. Starting with a foundation built on science has proven to be the most important means to begin such a measure.

1995 EDITION

The 1995 edition of NFPA 921, issued on 13 January 1995 in Toronto, Ontario, Canada consisted of nineteen chapters covering fire investigation. The added chapters were:

14. Electricity and Fire
15. Investigation of Motor Vehicle Fires
16. Management of Major Investigations
17. Incendiary Fires
18. Appliances
19. Referenced Publications

As previously mentioned, this edition included absorbing NFPA 907M, *Manual for the Determination of Electrical Fire Causes*. The existing text was expanded to discuss developments in electrically-related fire investigations such as “arcing through char” and static electricity and lightning. The old section on appliances was separated out and expanded into a stand-alone chapter.

By 1995, membership on the TC was at twenty-eight principal members and nine alternates.

Reaction to the ’95 Edition

The 1995 edition had a greater impact on the fire investigation community than did the 1992 edition. By 1995, the legal community began to learn of the existence of a peer-reviewed, consensus document that discussed both the science and the methodology of fire investigation. Since lawyers recognized the significance of an industry-accepted, how-to manual on fire investigations, they began to utilize it to challenge, and in some instances disqualify, fire

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investigators. The relative experience level of these fire investigators being challenged included many who had been doing fire investigation for years.

The two primary organizations representing fire investigators had members on the TC. The IAAI organized and conducted multiple seminars on how to avoid being disqualified.⁸ These seminars were designed to both encourage attendees to read the document and educate them on how they can get around the document's precepts. The terminology recommended was: "It is only a guide. It is not a standard." While this was happening, NAFI took a different course. NAFI embraced NFPA 921 and began to teach the science and methodology described. The business side of NAFI offered resolutions to its members for vote that formally accepted NFPA 921 as the preeminent document in fire investigation methodology. Meanwhile, both of these organizations, as well as most of the fire investigation and legal communities, realized that this document would have a profound impact on the business.

1998 EDITION

The 1998 edition of NFPA 921, issued on 16 January 1998 in Kansas City, Missouri, consisted of one additional chapter. In addition, there were significant changes and additions made to the existing chapters. The added chapter was:

19. Building Fuel Gas Systems

During this cycle, the TC became aware of an issue on the use of accelerant-detection dogs, known as "Canines." The issue about these animals was the validity given to their alerts when they detected odors they had been trained to recognize as ignitable liquids. Dog handlers had been allowed to testify that ignitable liquids were present on the fire scene when laboratory analyses did not detect them. The argument that the dog's nose was more sensitive than the state-of-the-art chemical equipment used to analyze debris samples was compelling and welcomed by the attorney wishing to use the alert as proof that the fire was incendiary.^{9, 10} The TC solicited input from the fire investigation canine handlers¹¹, recognized the emergency nature of the issue, and issued a tentative interim amendment [TIA] to the document. The TIA stated that canine alerts are a useful tool to determine good locations where debris can be taken for laboratory testing. At the same time, the document stated that laboratory confirmation was required to validate the claim that the sample was positive for ignitable liquid residues.

Another significant addition was the added discussion in Chapter 12 Cause Determination that addressed for the first time in the document the concept that fire investigations may be used to determine other aspects than just cause. These aspects include fire spread, bodily injury or death factors and human interaction with any of the causal factors. This discussion was a prelude for the addition of chapters addressing these issues in later editions.

By 1998, membership on the TC was at twenty-nine principal members [effectively full roster] with thirteen alternates and one non-voting member. Also, during this cycle, the NFPA Standards Council decided to limit the chairmanship of all technical committees to either three complete cycles or ten years maximum. Since Richard L. P. Custer, the original Chairman, had served since 1984, he had to step down. Daniel L. Churchward was named the new Chairman and began his duties on 16 January 1996.

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Reaction to the 98 Edition

During this time frame, much of the fire investigation community remained opponents of NFPA 921. The seminars continued to advise attendees to avoid using the word “scientific” in their reports and advised them to continue to characterize the document as a “guide.” The number of court cases where NFPA 921 was cited grew and the number of attorneys that learned of the document grew as well. Legal organizations, such as the American Bar Association [ABA] and the Defense Research Institute [DRI], began to organize and conduct seminars that specifically addressed NFPA 921 and its value to the Bar.

2001 EDITION

The 2001 edition of NFPA 921, issued on 13 January 2001 in Orlando, Florida, had considerable changes to the '98 edition. The document was re-organized into three basic sections and the existing and new chapters were grouped under these three categories. The document now had the following order:

1. Administration
2. Basic Methodology
3. Basic Fire Science
4. Fire Patterns
5. Building Systems *
6. Electricity and Fire
7. Building Fuel Gas Systems
8. Fire-Related Human Behavior *
9. Legal Considerations
10. Safety
11. Sources of Information
12. Planning the Investigation
13. Recording the Scene
14. Physical Evidence
15. Origin Determination
16. Cause Determination
17. Failure Analysis and Analytical Tools *
18. Explosions
19. Incendiary Fires
20. Fire and Explosion Deaths and Injuries *
21. Appliances
22. Motor Vehicle Fires
23. Wildfire Investigations *
24. Management of Major Investigations
25. Referenced Publications

The first nine chapters were categorized as background knowledge that an investigator should have before conducting investigations. Chapters Ten through Seventeen addressed specifically conducting the investigation. Chapters Eighteen through Twenty-Four addressed specific incidents that can be encountered in fire investigations. Furthermore, there were five new chapter added to the document [denoted with an asterisk in above list], and the Safety chapter was substantially re-written.

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Membership on the TC remained at a full roster with thirteen alternates. The NFPA rules require that any TC member that changes employment must resign from the TC and re-apply. With the movement normally found in the fire profession, the TC on Fire Investigations was no exception. The change in membership of the TC from the 1992 edition was nearly 100%.

Scientific v. Systematic II

During this cycle, there was another effort to remove the word “scientific” from the document. This effort developed due to the IAAI’s expressed concern that the document was exceeding the skill set of their members and because one of their members in good standing had been disqualified in an arson trial under a Daubert challenge. This “grassroots” effort produced the submission of scores of public proposals that were duplicated photocopies of the basic argument to change scientific to systematic. The TC addressed this argument, initially, by developing a new definition of the Scientific Method, in an attempt to address the fire investigation community’s concerns. This attempt failed to carry a majority on the TC’s ballot and the issue was resolved by leaving scientific in the document. Again, the TC stood their ground [with the support of the NFPA membership] and made the proper decision. Confirmation came when, ultimately during this cycle, the U. S. Supreme Court decided the issue for the fire investigation community by their ruling on Kumho.¹²

Technical Committee Procedures

Also during this cycle, an improved method of developing the document was instituted. This method was the use of “Task Groups.” In the past the TC would have someone who was interested in taking on the task to draft a large section, typically a complete chapter. The TC would then word smith the entire submission including each word. Although this original process produced an excellent document, the process was simply ponderous. With the new process, Task Groups [TG] were formed by the Chairman with a TC member serving as the TG Chair. The membership consisted of both TC members and non-members who had interest in the subject matter. All TG members were given equal “status” on the TG in developing the draft materials. The TG’s first duty was to bring to the full TC an outline of what they were proposing to do. Once the TC accepted the outline, the TG would produce text. The draft was then brought to the full TC for their acceptance. The TC still process each TG report in a meticulous fashion, but major changes by any member of the full TC had to be submitted in writing. This allowed for much of the argument for or against the specific wording to be done in a small group while other small groups were working on other topics. Once the full TC accepted the TG report, it was submitted to the NFPA as a TC Proposal/Comment.

This different approach to developing the document allowed for the TC to produce five new chapters and re-write another simultaneously. It also allowed for greater participation by non-members who were interested in participating. In one instance, Wildfire Investigations, the only member on the TG was the Chair. The remaining members were those entities and persons who routinely investigate wildfires. No member on the TC professed the knowledge to develop the draft of the chapter so this input was the only means to get the chapter done.

Reaction to the '01 Edition

Possibly one of the most significant changes to the document was the inclusion of the “Process of Elimination” discuss in the Cause Determination chapter.¹³ This was an attempt to

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address a problem known as “negative corpus” which equates to the elimination of all recognized potential causes meaning that one specific cause was proven. The cause generally “proven” can vary, but deliberately set fires are the ones most frequently encountered. This investigative process has also been found to “prove” that some electrically-powered device caused the fire.

Ranking up there in the significance scale with Process of Elimination was the addition of a spoliation discussion in the Legal Considerations chapter.¹⁴ Prior to the addition of this discussion, the courts had begun to address the manner in which fire investigations treated evidence and allowing other interested parties the opportunity to participate in the investigation. When the TC took up the issue, there was a perception that the NFPA was responsible for raising this issue to prominence. However, the TC addressed the topic only because it was becoming prominent in the courtroom. The final wording was an excellent example of how differing groups could address a contentious subject and reach a consensus on how to address it.

By the end of this cycle, many within the fire investigation community [including the IAAI] recognized that the document was not going away, that it has been correct in the contentious positions it has taken, that the legal community was embracing it, and that it had a lot of good to offer those that read it and followed its recommendations. The shift in feeling within the community began to move towards acceptance and reliance from the position of hatred and ignorance that was commonly encountered in the earlier editions. There were [and still are, unfortunately] those investigators that simply refuse to accept the document and thereby improve their craft. These persons are rapidly making themselves irrelevant to the profession.

The general trend toward acceptance of the document did not quell the development of contentious issues.

2004 EDITION

The 2004 edition of NFPA 921, issued on 16 January 2004 in Reno, Nevada, underwent another re-organization from what was done in the '01 edition. The NFPA began to enforce the NFPA Manual of Style which required that all NFPA documents conform to one format. That format required that NFPA 921 have its chapters re-ordered and that all paragraphs within the document be numbered. The three basic sections that the TC had separated the document into remained, but the chapter numbers within each section shifted. Furthermore, a new chapter was added to the document and several contentious issues were addressed. The new chapter was:

19. Analyzing the Incident for Cause and Responsibility

The re-organization of the document and subsequent numbering of all paragraphs was an excellent change. Prior to the requirement that all paragraphs be numbered, referring to sections within the document was tedious and hard to follow. With the new numbers, anyone can make reference to a specific area in the document without a concern that someone will be unable to keep up with the discussion.

Cause v Classification

The new chapter addressed the need to differentiate between a determination of a fire cause and a determination of the fire's classification. The cause determination involves the identification of three factors: source and form of heat [ignition source], first material ignited

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[first fuel] and ignition sequence [how the first two combined to create a hostile fire]. Likewise, the classification of a fire cause addresses the intent of the fire, or why did the fire start. The traditional classifications include accidental, natural, incendiary and undetermined.¹⁵ Additionally, this chapter addresses causes related to property damage, bodily injury or loss of life and determining responsibility. The confusion found in both the fire and the legal community surrounds the concept of an undetermined cause and an undetermined classification. These are different determinations and need to be explained in the investigation.

An example of an undetermined cause would be a case where the first fuel and heat source are known, but the ignition sequence cannot be determined. Such a case might be where a clearly defined origin yields the knowledge that an electrical outlet ignited cellulose insulation in a wall cavity, but the damage precludes determining if the fire began due to a high resistance connection or plug failure for a power cord that had been plugged into the outlet. An example of an undetermined classification would be a case where the cause components are known but why the fire began is not. Such a case might be where a pan of oil was left on an energized range burner. The cause is the oil igniting from the heat of the burner due to the pan having been left unattended. The classification, however, often cannot be determined by the fire scene analysis because the evidence does not determine if the pan was left unattended accidentally, due to falling asleep, or deliberately, due to the desire to get a new kitchen. These subtle distinctions need to be pointed out to those who believe that the fire cause was “arson” or “electrical.”

Analyst v Investigator

Another issue developed when a public proposal added text that included “fire analyst.” The document has included the fire analyst terminology since the first edition. It was included in the first edition because several public agency representatives raised the concern that they may not be able to do some of the more technical fire investigations steps. To accommodate those concerns the TC added the term fire analyst to allow for those fire investigators that were concerned with qualifying as an expert to claim they were fire investigators and not fire analysts and did not need to know the level of technology beyond fire origin and cause that an analyst might routinely address.

However, when this proposal came up for discussion in this cycle, the public agency representatives on the TC objected to the characterization that a fire analyst knows more than a fire investigator. The result of the discussion was the particular proposal was not accepted by the TC. However, the concept of fire analyst remains in the document and remains a good way to address the initial concerns of the public agencies.

Ignitable Liquid Pattern Recognition

A significant discussion arose when a proposal was submitted that requested language in the document stating clearly that ignitable liquid pattern recognition in a post-flashover compartment cannot be done to a sufficient level of certainty unless there are confirming laboratory results of the presence of the accelerant. This debate got considerable attention by both TC members and the guest attendees. The ultimate end action by the TC was to make the discussion in the document even more limiting by dropping the qualifier that the patterns must be inside a post-flashover compartment. The final wording remained consistent with the other locations within the document where this topic is discussed.

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2008 EDITION PREVIEW

The National Fire Protection Association has issued an edition of NFPA 921, *Guide for Fire and Explosion Investigations*, every three years since 1992. However, there will not be a 2007 edition. Instead, the next edition of this document will be in 2008. Although no one can [or should] promise what will be in the next edition, there has been considerable work performed by the TC and others to develop the document. The following discussion will address what has happened to date and what *may* happen in the future.

Changes to NFPA 921 in the upcoming edition *may* happen in the following sections:

Chapter 6:	Fire Patterns
Chapter 17:	Origin Determination
Chapter 25:	Motor Vehicle Fires
Chapter 27:	Management of Major Investigations
New Chapter:	Marine Fire Investigation

Chapter 6, Fire Patterns, has a re-write revision that the TG developed by researching the scientific literature for applicable references to pattern generation and analyses. From that research, the TG has generated text that splits the chapter into two aspects, fire effects and fire patterns. This chapter revision *may* be seen in the Report on Proposals [ROP] as a TC Proposal.

Chapter 17, Origin Determination, has a re-write revision by its TG. This re-write consists of putting the existing 2004 text in a style that better conforms to the sequence of events found in the Scientific Method. This chapter revision *may* be seen in the ROP as a TC Proposal.

Chapter 25, Motor Vehicle Fires, has received considerable input from the Society of Automotive Engineers [SAE] that recently had a representative appointed to the TC. From the TG and the SAE committee, the entire chapter has been reviewed with considerable discussion added regarding alternative fueled vehicles as well as other revisions. This chapter revision *may* be seen in the ROP as a TC Proposal.

Chapter 27, Management of Major Investigations, is a complete re-write due to an evaluation of the chapter's applicability to real-world situations. Considerable input was given by the TC, including lawyers and investigators experienced in major fire losses. This chapter revision *may* be seen in the ROP.

A new chapter, Marine Fire Investigation, has been developed as a result of a group of Australian fire investigators that have marine fires and wanted guidance from the document on aspects of that effort. This new chapter *may* be seen in the ROP as a TC Proposal.

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Schedule for 2008 Cycle

By the time of publication of this paper, the initial deadline for public proposals will have passed. However, to provide a clear picture of what the schedule for the 2008 cycle [technically know as “Fall 2007 cycle”] will be, the complete schedule is listed below:

- | | |
|---|------------------|
| • Proposal closing date: | 26 May 2006 |
| • Report on Proposals published and posted: | 22 December 2006 |
| • Comment closing date: | 2 March 2007 |
| • Report on Comments published and posted: | 24 August 2007 |
| • Intent to Make a Motion [ITMAM] Closing Date: | 19 October 2007 |
| • Standards Council issuance for doc’s w/o ITMAM: | 25 January 2008 |
| • NFPA Annual Mtg for doc’s w/ITMAM | 2 June 2008 |
| • Standards Council Appeal closing date: | 26 June 2008 |
| • Standards Council issuance for doc’s w/ITMAM | 31 July 2008 |

The NFPA has done more than just drop the Fall Meeting schedule. There is another change that has been implemented to improve the efficiency of getting the documents updated and issued. This change allow for any document beginning in 2008 that has no arguments against the respective TC’s actions in the ROP and ROC to be issued by the Standards Council in January of 2008. As a consequence of not receiving any argument, the document will not be brought to the floor at the Annual Meeting for membership vote. In the case where there is argument on the TC’s action, the original submitter of the disputed proposal or comment can ask for resolution on the floor of the Annual Meeting. This resolution requires that the submitter or designated representative submit an intent to make a motion notice [ITMAM] to the Standards Council. Once the Council agrees that resolution is necessary, they will schedule the document for a floor vote. Any documents that are brought to the floor of the Annual Meeting will be issued in August of that same year.

Participation in the NFPA process as it relates to NFPA 921 requires that one adhere to the schedule. Failure to follow it may mean that the argument will not be heard for the 2008 cycle. Along that same discussion, the NFPA provides forms [in the rear of every copy of NFPA 921 and available on the NFPA web site, nfpa.org] that can be used to submit public proposals/comments. These forms set out what the submitter should do to make his or her intentions known to the TC. Use of these forms is not mandatory, but they are encouraged.

CONCLUSIONS

NFPA 921 has been on the streets for fourteen years. It has generated considerable discussion, much of which has been negative of the document and the TC. At the same time, the document has been supported by judicial decisions that are in step with the precepts offered. The TC has been ever changing in membership and all relevant organizations have had or continue to have representatives on it. The TC membership has made tough choices that were clearly anticipated to cause difficulties with the fire investigation community. Throughout this, the TC membership has voted to do the right thing.

The investigators that wish to improve their craft have accepted NFPA 921 and have worked hard to both adhere to its recommendations and to improve the document as well. Those investigators

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that have refused to accept that NFPA 921 is the means to a better fire investigation are gradually being weeded out by the fire investigation and legal communities.

So, what has come of all this process? In the beginning, the NFPA was asked to develop a document that described a proper way to do a fire investigation. NFPA 921 is truly that document. Furthermore, and maybe the most significant result of the document, the quality of fire investigations from 1992 until the present have increased by an immeasurable extent.

BIOGRAPHY OF AUTHOR

Daniel L. Churchward is a charter member of the Technical Committee on Fire Investigation, responsible for the development and maintenance of NFPA 921, *Guide for Fire and Explosion Investigations*. He has served as Chair of the Technical Committee since January 1996 and has overseen the development and issuance of the 1998, 2001 and 2004 Editions. Aside from his involvement in the NFPA, he is a practicing fire investigator, specializing in electrically-related aspects of fires and methodologies associated with fire investigation. His company, Kodiak Enterprises, Inc., is located in Fort Wayne, Indiana, and has four technical personnel serving the legal, manufacturing and insurance industries.

¹ William Daubert, et ux., etc., et al., Petitioners, v. Merrell Dow Pharmaceuticals, Inc. 509 U.S. 579, 113 S.Ct. 2786

² Kumho Tire Company, Ltd. v. Carmichael, 119 S. Ct. 1167 (1999)

³ News from the Executive Office of the International Association of Arson Investigators, *Fire Investigation Not Junk Science IAAI says 'Daubert' Ruling Doesn't apply to Fire Investigators*, Fire & Arson Investigator, March 1998

⁴ Fireman's Fund Ins. Co. v. Canon U.S.A., Inc., No. 03-3836 [8th Cir. Jan.12, 2005]: cited NFPA 921 as "qualifies as a reliable method endorsed by a professional organization." and continued to reference the document in later discussions.

⁵ Taepke v. Lake States Insurance Co., Charlevoix County, Michigan Circuit Court, No. 98-1946-18-CK (1999): unpublished decision [in which the first cite was used related to Kumho] whereby the challenged expert admitted to authority of NFPA 921

⁶ Michigan Millers Mutual Ins. Co., v. Janelle R. Benfield, 11th Circuit U. S. Court of Appeals, No. 97-2138 (1998)

⁷ McCarver v. Farm Bureau General Ins. Co., Berrien County, Michigan Circuit Court, No. 2004-3315 CK M (2006): unpublished decision where trial judge accepted NFPA 921 as "Gold Standard" for fire investigations

⁸ *NFPA 921: Sword and Shield* Conferences held in several venues involving several speakers [including this author]

⁹ State v. Buller, 517 N.W.2d 711 [Iowa 1994], whereby the Iowa Supreme Court ruled in favor of allowing K-9 alerts as evidence of the presence of ignitable liquids

¹⁰ State of Georgia v Weldon Wayne Carr, in the Superior Court of Fulton County, Case No. Z-58558-A [1994]

¹¹ IAAI Forensic Science Committee, *Position Paper on Accelerant Detection Canines*, Fire and Arson Investigator, 45[1], 1994, 22-23

¹² Kumho Tire (1999)

¹³ National Fire Protection Association, *NFPA 921, Guide for Fire and Explosion Investigations*, 1998 Edition, §16.2.5 Process of Elimination

¹⁴ NFPA 921 '98 Edition §9.3.6 Spoliation of Evidence

¹⁵ NFPA 921, '04 Edition §19.2.1 Classification of Cause