

# **EXPERT REPORT WRITING: BEST PRACTICES FOR PRODUCING QUALITY REPORTS<sup>+</sup>**

David J. Icove, PhD, PE, CFEI

The University of Tennessee, Knoxville, Tennessee, USA

Brian P. Henry, JD, CFEI

Robinson & Cole, LLP, Hartford, Connecticut, USA

## **ABSTRACT**

Fire investigations, in order to be successfully litigated, must be carefully documented in accordance with present day uniform guidelines and professional standards. This paper provides a successful and time-tested report format that covers these key components for litigators with sufficient background to present cases through their investigation, deposition, mediation, and trial phases. Included in this presentation are helpful report checklists along with cross references to essential sections of *NFPA 921*, *NFPA 1033*, and applicable *ASTM* standards.

## **INTRODUCTION**

In today's world, the fire investigator's expert report may be the single most important piece of documentary evidence in a case. Expert reports must be carefully documented in accordance with uniform guidelines and professional standards. With that in mind, comprehensive reports also make it more difficult to challenge expert testimony.

Six frequently asked questions by fire investigators include: (1) Why do we write Expert Reports? (2) What are the applicable guides, protocols, and standards? (3) How do I apply and document the "Scientific Method" in Expert Reports? (4) What is the proper format of the Expert Report? (5) What are the requirements of the Federal Rules of Civil Procedure? and (6) How can I defend my Expert Report during testimony? This paper provides a set of "best practices" that attempt to answer both these and similar questions.

## **WHY WRITE EXPERT REPORTS?**

For fire investigators, there are numerous common reports that are prepared. These reports start from the fire incident run report, preliminary and final reports of investigations, laboratory reports, and even affidavits. The crucial test for an expert fire investigation report is that it contains sufficient information that would allow an independent peer reviewer to arrive at a similar, if not the same conclusion.<sup>1</sup>

---

<sup>+</sup> While the best practices described throughout this paper have general applicability to cases pending in the United States, these practices may not address all reporting requirements outlined in foreign jurisdictions.

Numerous reasons and requirements exist to justify the writing of expert reports. For example, in federal courts, expert reports are usually required to comply with the Federal Rule of Civil Procedure (FRCP) known as Rule 26(a)(2)(B). Other uses of expert reports include assistance in settlement negotiations, motions in affidavit format, and to support testimony in arbitration hearings. Reports may take the form of affidavits in both civil and criminal litigation.

## **WHAT ARE THE APPLICABLE GUIDELINES AND STANDARDS?**

The Rule 26(a)(2)(B) report identifies what is requested by the witness, lists reviewed documents, states the methodology and activities undertaken, itemizes opinions and their bases, and provides background on the expert's qualifications. Requirements for these reports also mirror those identified in the National Fire Protection Association's *Standard for Professional Qualifications for Fire Investigator*, 2009 Edition which states that an investigator should:

*4.7.1\* Prepare a written report, given investigative findings, documentation, and a specific audience, so that the report accurately reflects the investigative findings, is concise, expresses the investigator's opinion, contains facts and data that the investigator relies on in rendering an opinion, contains the reasoning of the investigator by which each opinion was reached, and meets the needs or requirements of the intended audience(s).<sup>2</sup>*

Other guidelines and standards that apply to expert reports include the NFPA Fire Protection Handbook, 2008 Edition; the SFPE Fire Protection Handbook, 4<sup>th</sup> Edition; NFPA 921, *Guide for Fire and Explosion Investigations*, 2008 Edition; Society of Fire Protection Engineers "Design Guides", American Society for Testing and Materials (ASTM); and the U.S. Department of Justice Guidelines and Protocols.

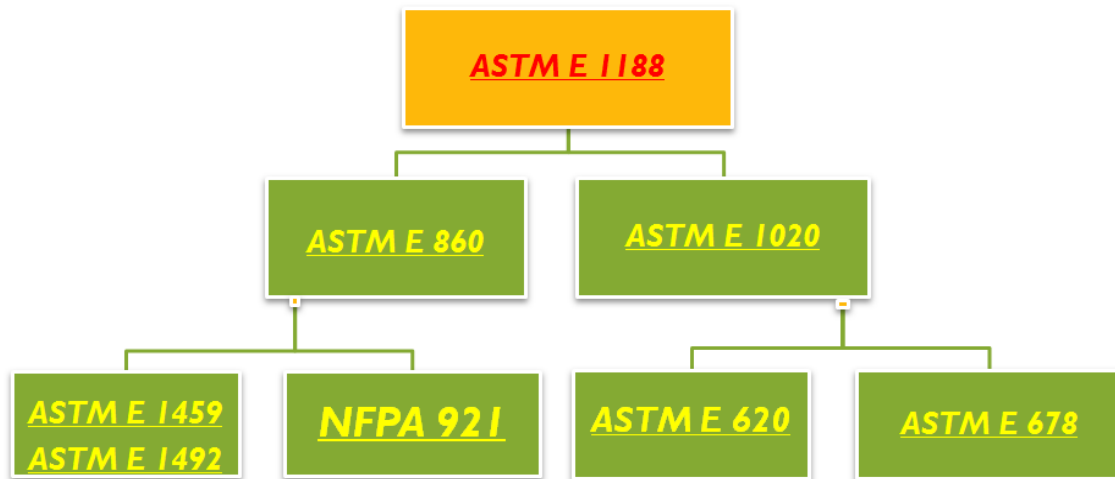
The ASTM standards form a hierarchy, as shown in Figure 1, that address both the physical and informational aspects of a fire investigation, particularly when civil or criminal litigation is anticipated. The overall capstone standard is ASTM E 1188 – *Standard Practice for Collection and Preservation of Information and Physical Items by a Technical Investigator*.

ASTM E 860, the *Standard Practice for Examining and Preparing Items That Are Or May Become Involved In Criminal or Civil Litigation*, cites ASTM E 1459, the *Standard Guide for Physical Evidence Labeling and Related Documentation*, ASTM E 1492 – *Receiving, Documenting, Storing, and Retrieving Evidence in a Forensic Laboratory*, and NFPA 921 – *Guide for Fire and Explosion Investigations*. Likewise, ASTM E 1020 – the *Standard Practice for Reporting Incidents* cites ASTM E 620 – *Reporting Opinions of Scientific or Technical Experts* and ASTM E 678 – *Standard Practice for Evaluation of Technical Data*.

## **KEY AREAS ADDRESSED IN WRITTEN REPORTS**

Those who prepare expert fire investigation reports must consider the style, whether peer review is needed, formatting, and signature requirements. The fire investigation report should read like a scientific report which contains findings, witness observations, diagrams/photographic documentation, conclusions, recommendations, and references.

Several suggestions provide the foundation to support the drafting of an expert report. The use of an investigative protocol to collect and review the case facts will ensure consistency. Peer review, which is often an in-house technical review, can identify areas of improvement. Professional reports include an inventory and description of each document reviewed, an itemization of opinions and supporting documentation, and up-to-date appendices commonly referred to in the report. Investigative protocols are included in several references.<sup>3 4 5</sup>



**Figure 1. ASTM cited standards when civil or criminal litigation is anticipated.**

An informal survey of successful expert reports reveals the profile of a well-formatted style for expert report. A cover page with case caption identical to the one being litigated should make the expert report appear to be a normal court document. The report should be sealed in accordance with accepted practices.<sup>1</sup> Following the executive summary is the body of the report, using topic headings with short, concise paragraphs in active voice. The report should contain page numbering on the bottom center of the page, and contain “Page 3 of 32” to ensure that all pages are contained. Any exhibits which may be used at a later time in court should be included.

Suggested topic headings include:

1. Disclosure
2. Personal background and qualifications
3. Summary of professional opinions
4. Description of the property destroyed
5. The standard of care in fire investigations
6. The fire incident (include names, table of events)
7. An analysis of other investigations
  - Training and experience in fire investigations
  - Post secondary education
  - Knowledge and certification
  - Expertise in applying a reliable methodology
  - Qualifications
8. Spoliation (if present)
  - Definition, responsibility, and documentation
  - Realization timeframe of potential litigation
  - Notification of interested parties
  - Loss and destruction of critical evidence
  - Timeframe of spoliation of evidence
9. Impact of conducting an independent fire investigation
10. Executive summary with signature/seal

## FORMING YOUR OPINION

The key area of an expert report centers on the opinions formed and how they are accurately expressed. These opinions are based upon careful evaluation of all of the case facts along with personal knowledge of the field based upon education, training, experience, and experiment. The opinions also should utilize only facts that are supported by the evidence.

Recommendations to experts when forming an opinion include limiting the scope of your testimony. You should delay forming an opinion until late in the drafting of the report and only after studying the case, running any tests, reviewing other expert reports, and making a site inspection if necessary for your analysis. It is also important to use the “scientific method” and account for all hypotheses reviewed, including the opposing experts.

An example of stating opinions by an engineer:

*Based upon the above scientifically accepted and well documented indicators, it is my opinion that:*

***Opinion #1 – The investigation conducted by XXXXXXXX Engineering into the September XX, XXXX fire involving the XXXX Model XXXX XXXXXXXX fails to meet the minimum professional standards of professional practice for reporting opinions of scientific or technical experts in the field of fire and explosion investigation.***

***Opinion #2 – The individual and collective actions by XXXXX; XXXX Casualty Company; XXXXX, Inc.; XXX Engineering; and Attorney XXXX X. XXXX allowed for the spoliation of evidence in this case, in direct violation of the accepted professional standards of conduct.***

***Opinion #3 – Spoliation of evidence prevented the defendant in this matter, XXXXX Corporation, from conducting a parallel independent fire investigation by its own expert, developing evidence capable of rebutting Mr. XXXX’s hypotheses as well as bolstering Mr. XXX’s original conclusions, and developing alternative theories as to causation.***

When stating your opinion, it should support ASTM, NFPA, and U.S. Department of Justice standards, remembering to describe the methodology used. Any statements or conclusions should be clear, explicit, and confident opinions in an ordered format. The appropriate wording for your profession should be used (e.g., engineers: “based upon a reasonable degree of engineering certainty”). Finally, remember to include all of the opinions and exhibits to be introduced at trial.

## DEFENDING THE EXPERT FIRE INVESTIGATION REPORT

While the primary purpose of the fire investigator’s expert report is to communicate information, a main goal is to provide sufficient information which would help the expert survive a *Daubert*<sup>6</sup> challenge during litigation. Several factors can help ensure that this goal is reached. For example, use numerous citations to bolster the report’s credibility. These citations should pinpoint the exact title, author, edition, publisher, and latest year of publication for references. It is important that citations cover the recent search of the literature. Remember to include citations for all referenced NFPA, ASTM, and Department of Justice standards.

When **key definitions** first appear in the report (e.g., fire investigation, flashover, etc.), it is advisable to use the footnoting feature to place the exact text on the same page of the document where it is cited. Footnote every key definition (do not use a glossary) to make it easier to refer to the questions from opposing counsel as to what specific definition that you are using to rely upon.

Experts are advised to limit their reports to specific areas of expertise by stating opinions only in area of their knowledge, education, and experience (stay in your sandbox!). Avoid legal terminology, court citations, and opinions (use NFPA and ASTM cited terminology), and avoid cost estimates unless qualified.

Your **report** should be prepared well-ahead of time, should be thorough and well-documented, and should include accurately footnoted and referenced materials asserting your statements. You should clearly explain your credentials; accurately illustrate and use your methodology; and give emphasis on qualifications, methodology, and deficiencies in the opposing opinions.

Your report should state that your investigation was conducted in accordance with NFPA 921, NFPA 1033, and other applicable ASTM standards. Remember to link the methodology back to the investigator's qualifications and expertise and include the expert's peer-reviewed articles that support the approach or opinion. Include other peer-reviewed reports that use a similar analysis and support the methodology; and rule in the substantial cause and rule out all others

Your report should examine the opposing experts, references, methodology, qualifications. Obtain the opposing expert's publications, expert reports, and depositions to see their level of effort in other cases. Explore if the opposing expert has deviated from standards of conduct (NFPA 921, NFPA 1033, and selected ASTM standards). Identify document examinations, tests, and methodology that the opposing expert should have explored.

Items to watch when **cross-examined** on your report include whether was your dictated report signed by someone else? Nothing is more embarrassing than to not know your deceased clients. Do you know all dates and important names? Other questions include did you read all of the exhibits? What are the definitions of terms (when asked, refer to footnotes)?

Other suggestions include if the opposing counsel appears confused, do not volunteer information; proof-read for spelling, grammar, abbreviations, self-serving, and avoid boilerplate language; avoid predictions; check and the re-check all opinions and supporting documentation; ensure that fire investigation "standards of care" are addressed; and keep well-within your area of expertise.

Be prepared to cite supporting standards, guides, and literature – have them with you and sources where counsel can obtain copyright to include in court filings. Do not take marked-up copies of standards to the deposition or court. Avoid legal references which may imply that your counsel supplied to you language for the report, and document inspection of the scene no matter how long after the fire.

Be wary of the requirements to maintain electronic mail and draft reports. Minimize creating discoverable information, including "draft" reports. During the deposition or trial, quickly acknowledge and correct mistakes.

Avoid unprofessional comments on the experts other than you do not agree on their findings or conclusions. Avoid labeling the report "confidential," "secret," or "client privileged". Avoid allegations of ethical violations against other witnesses.

## PENDING CHANGES

Recent changes to FRCP Rule 26 approved by the U.S. Judicial Conference in September 2009 and were submitted to the U.S. Supreme Court. On April 28, 2010, the Supreme Court of the United States approved amendments to, among other, Civil Rules 26 and 56, effective December 1, 2010, unless Congress enacts legislation to the contrary.

Under the proposed amendments to Rule 26, attorney-expert communications would come under the protection of the work-product doctrine. Additionally, the new Rule 26, if passed by Congress, will prohibit discovery of draft expert reports and further limit discovery of attorney-expert communications.

## SUMMARY

The drafting and issuance of expert reports, and the content thereof, can have a profound impact on litigation. Care must be taken to ensure that all issuances by the expert conform to accepted standards and legal requirements. Beyond those standards and requirements, however, a systematic procedure should be utilized for formatting your expert report and ensuring that its contents are presented correctly, are substantively accurate, describe how the expert properly reviewed information per ASTM and NFPA standards, and clearly state the expert's opinions. Finally, the report can be used as a tool of professionalism by comprehensively identifying the expert's qualifications.

For further Reading, see the following references:

Babitsky, S. & Mangraviti, Jr., J.J. (2002), *Writing and Defending Your Expert Report: The Step-by-Step Guide with Models*. Falmouth MA, SEAK, Inc.

Wisehart, F.A. *Fundamentals of Writing Expert Reports*, Cornell University [www.wisehart-wisehart.com/](http://www.wisehart-wisehart.com/).

Wivell, M. K.. *Deliver a Daubert-Proof Expert Report*, Trial, Dec 1, 2003.

Ambrogi, R. "Rule 26: Major Changes for Attorneys and Experts." (BullsEye: IMS ExpertServices™ February 2010)

Poyner, R. (2005). *Expert Witness Handbook: Tips and Techniques for the Litigation Consultant*, Para Publishing, Santa Barbara, CA.

## ABOUT THE AUTHORS

**David J. Icové, PhD, PE, CFEI** is a Research Professor in the Department of Electrical Engineering and Computer Science at the University of Tennessee, located in Knoxville, Tennessee. Dr. Icové is the co-author of several leading textbooks in the fire investigation field. He is a Registered Professional Engineer and a Certified Fire and Explosion Investigator (NAFI).

**Brian P. Henry, JD, CFEI** is an attorney with the law firm of Robinson & Cole, LLP, of Hartford, Connecticut, and is in the firm's Fire and Explosion Group. His practice focuses on fire science litigation, and he serves or has served as national counsel to various companies in regard to fire science issues. His practice also includes the direct representation of expert witnesses who are challenged under Federal Rule 702, *Daubert*, or state-equivalent rules. He is a Certified Fire and Explosion Investigator, has authored a number of articles on fire science issues, and is a regular speaker at fire science seminars across the country.

## REFERENCES

---

<sup>1</sup> D.J. Icove and G.A. Haynes. 2007. "**Guidelines for Conducting Peer Reviews of Complex Fire Investigations.**" Fire and Materials Conference, San Francisco, California, January 29-31, 2007.

<sup>2</sup> **Standard for Professional Qualifications for Fire Investigator**, 2009 Edition National Fire Protection Association, Quincy, MA 2009.

<sup>3</sup> NIJ's "**Fire and Arson Scene Evidence: A Guide for Public Safety Personnel**" (NFPA 906 forms in Appendix A)

<sup>4</sup> J.D. DeHaan. **Kirk's Fire Investigation** "Field Interview and Incident Report Forms" in Appendix, Prentice Hall, 2006.

<sup>5</sup> ASTM E 620. Section 4.4.1.

<sup>6</sup> Icove, D.J. and M.W. Dalton. 2008. "**A Comprehensive Prosecution Report Format for Arson Cases.**" (ISFI 2008, International Symposium on Fire Investigation Science and Technology, Cincinnati, Ohio, May 19-21, 2008)

*Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579, 589 (1993)