

# The BIG *Daubert* Hurdles In Fire & Explosion Litigation

Over a decade has passed since the U.S. Supreme Court's ruling in *Daubert v. Merrell Dow Pharmaceuticals, Inc.*,<sup>1</sup> and it is time to evaluate where we've been, where we are and where we are headed on the admissibility of expert opinion testimony in fire and explosion cases.

*Daubert* was intended to "liberalize" federal evidence practice and abolish the insistence that expert opinions represent consensus views, as reflected by the *Frye* standard.<sup>2</sup> The so-called *Daubert* test has produced significant hurdles for achieving recoveries and has led to hard-fought battles in fire and explosion cases.



by

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Before *Daubert*, federal courts rarely scrutinized the scientific validity of expert opinion testimony. For the first 50 years after *Frye*, the case was cited in only 96 federal and state cases, or roughly two cases per year.<sup>3</sup> In fact, it was not until 1984, that *Frye* was first used to exclude an expert witness in a civil case.<sup>4</sup> Thereafter, defendants began heavily asserting *Frye*. As a result, widespread fear that defendants would use *Frye* to strangle many technical cases ensued and this formed the backdrop for the Court's decision in *Daubert*.<sup>5</sup>

*Daubert* held that expert's testimony must be founded upon "scientific knowledge" and established a "standard of evidentiary reliability,"<sup>6</sup> mandating that the trial court judge act as gatekeeper to keep "junk-science" out of the courtroom. The Supreme Court identified four primary factors for determining the reliability of scientific evidence: 1) whether the theories and techniques employed by the scientific expert can and have been tested; 2) whether they were subjected to peer review and publication; 3) the known or expected rate of error; and 4) whether the theory or methodology employed is generally accepted in the relevant scientific community.

Although it was hoped these "clear" guidelines would reduce judicial scrutiny of expert testimony, in reality, they have had the opposite effect. For example, in the six years following *Daubert*, federal courts published 1,065 opinions on expert admissibility, 871 of which involve civil cases, or 36 times the number of rulings as occurred during the six-year period preceding *Daubert*.<sup>7</sup>

In any litigation that relies heavily on expert testimony, like fire and explosion cases, you and your counsel must ensure that your retained expert witnesses are properly positioned for a *Daubert* challenge.

## Big *Daubert* Pitfalls

Two of the *Daubert* factors for determining scientific validity have received significant attention: 1) whether the theories and techniques employed by the scientific expert can and have been tested; and 2) whether the theory or methodology employed is generally accepted in the relevant scientific community.

### 1) Have The Expert's Theories Been Properly Tested and Supported by Reliable Evidence?

The "key question" in determining whether an expert's theory should be considered reliable scientific knowledge often rests on whether the theory has been tested and independently validated or replicated.<sup>8</sup> Courts often exclude experts when they have not conducted proper testing to support their conclusions. Without replicable testing, the expert's testimony may be based on mere opinion – *ipse dixit* type reasoning – or as one court stated, mere "educated guesses dressed up in evening clothes."<sup>9</sup>

In *Michigan Millers Mutual Insurance Corp. v. Benfield*,<sup>10</sup> the Eleventh Circuit upheld the trial court's decision to exclude an expert witness who testified on fire causation. At trial, Millers' fire causation expert was challenged as to how he came to his conclusion that the fire in the Benfield home was intentionally set. The expert testified that by eliminating all accidental causes, and given that the fire began on the dining room table, there were no other possible sources of ignition of the fire. The court concluded that his analysis was insufficient because the expert "performed no tests and took no samples" and was "unable to explain the methodology by which he eliminated the chandelier as a possible ignition source for the fire."<sup>11</sup>

A similar result was reached in *Pride v. BIC Corp.*,<sup>12</sup> involving a man who mysteriously caught fire while inspecting a pipe behind his house. In a products liability action, the widow alleged that her deceased husband's butane lighter first failed to extinguish, ignited his clothing, then exploded, dousing him with isobutene and fueling conflagration that ultimately caused his death.

The widow offered three experts: a mechanical engineer who had testified in numerous products liability suits; a fire-fighter who had previously testified in BIC lighter cases on causes and origins of fires; and an analytical chemist. After a *Daubert* hearing, the magistrate recommended exclusion of all three experts.<sup>13</sup> The Sixth Circuit affirmed the magistrate's decision, finding that the widow's experts had not conducted replicable laboratory tests showing that the explosion of the lighter was consistent with failure to extinguish caused by lighter defect.<sup>14</sup>

The mechanical engineer failed to perform any tests to determine if he could duplicate a "failure to extinguish" scenario that would result in the alleged explosion. The chemist did not personally examine the lighter, and although he had designed a lab experiment to test his hypothesis, he "chickened out and shut the experiment down."<sup>15</sup>

Even expert testimony purporting to follow methods prescribed by NFPA 921, *Guide for Fire and Explosion Investigations*, may not be sufficient to avoid a *Daubert* attack. In *Fireman's Fund Ins. Co. v. Canon, U.S.A., Inc.*,<sup>16</sup> the Eighth Circuit affirmed exclusion of an expert's testimony, even though the fire causation experts involved had subjected the copier, which was believed to be the source of the fire, to five detailed inspections, including visual, x-ray and electron-microscope examinations. The Eighth Circuit found that the trial court did not abuse its discretion in excluding the experts' testimony, in which they failed to carefully examine their hypotheses against empirical data obtained from the fire scene analysis and failed to conduct appropriate testing.<sup>17</sup> According to the court, "not only did the experimental testing fail to produce an open flame, but the experts were unable to explain the assumed heater control circuitry malfunction in theory or replicate it in any test."<sup>18</sup>

### 2) Is the Expert's Methodology Generally Accepted in the Relevant Scientific Community?

As fire and explosion litigation relies heavily on science, the "science" behind the expert's opinions should be well-established and credible. *Truck Insurance Exchange v. Magnetek, Inc.*<sup>19</sup> is particularly insightful. In *Magnetek*, the subrogating insurer sued the manufacturer of fluorescent light ballasts, claiming a ballast defect caused the fire. The insurer relied upon testimony from a fire expert, who relied on a scientific process known as pyrolysis and opined that the ballast could have started a fire at temperatures well under wood's ignition point of 400 degrees Fahrenheit. The Tenth Circuit affirmed the lower court's exclusion of the expert's pyrolysis testimony because it found the pyrolysis theory unproven and unreliable, and also because it was not reliably applied.<sup>20</sup> The court found that given pyrolysis' questionable recognition in the scientific community, it could not be applied to the facts of the case without analytical gaps.<sup>21</sup> The pyrolysis theory continues to be challenged

in the courts, with both sides presenting compelling arguments.

## Further Examples of Daubert Challenges

The following cases provide a flavor of how courts have grappled with *Daubert* challenges:

### • *Windham v. Circuit City Stores, Inc.*<sup>22</sup>

This case involved allegations that a fire erupted due to an arc caused by a crimped wire on the back of a range. The District Court denied defendant's motion to bar plaintiff's expert by finding that expert's elimination of alternative fire causes was a recognized method to establish causation. According to Senior District Court Judge Wesley E. Brown, the expert's failure to adequately explain why he ruled out the trash can as a possible source of the fire did not render his analysis completely unreliable. The District Court concluded that the expert was not required to conduct any tests, as he used physical investigation, professional experience and technical knowledge to determine causation. "This methodology involves a sufficiently reliable method that would aid the jury in resolving a factual dispute."<sup>23</sup>

### • *Bitler v. A.O. Smith Corp.*<sup>24</sup>

This case involved the explosion of leaked gas as a result of the improper sealing of a safety valve which was clogged with contaminants in the gas line. Plaintiff's expert was allowed to testify as his opinions were based upon his personal experience, training, site observations and elimination of alternative sources for the explosion's cause.

### • *Ferrara & Dimercurio v. St. Paul Mercury Ins. Co.*<sup>25</sup>

Following a boat fire, plaintiff sought to bar defendant's expert who opined that the fire was caused by arson. The admission of defendant's expert testimony was upheld because the expert considered the report and findings of another defense expert who had passed away prior to trial and that was deemed an acceptable practice – especially since the expert at issue conducted his own independent investigation consisting of a site examination, artifact examination and interviews. "When an expert relies on the opinion of another, such reliance goes to the weight, not to the admissibility of the expert's opinion."<sup>26</sup>

### • *Hartley v. St. Paul Fire & Marine Insurance Co.*<sup>27</sup>

The Sixth Circuit held that a fire investigator's inability to rule out all other causes of a boat fire, which subsequently spread to 17 docked neighboring vessels, did not render his opinion unreliable and inadmissible under Federal Rule of Evidence 702. The expert's inability to state with certainty the source of the accelerant or to eliminate other possible causes goes to the weight and reliability of the testimony, not its admissibility.<sup>28</sup>

### • *State Farm Fire & Casualty Co. v. Holmes Products*<sup>29</sup>

Plaintiff's expert opined that a fire erupted when a halogen lamp, which had been the subject of a product recall due to its lack of a glass or wire shield, came into contact with nearby drapes on a window (which the family's dog likely looked out when the sound of nearby tree trimming was occurring). In barring the expert's causation testimony, the court acted within its broad discretion and disallowed the testimony because it did not satisfy the requirements of *Daubert* and Rule 702.<sup>30</sup> The Third Circuit concluded that the expert's testimony was not supported by any scientific analysis or methodology; it was merely unsupported speculation (that the drapes ignited and whether or not the halogen lamp was knocked over) and was therefore properly excluded.<sup>31</sup>

### • *Bryte v. American Household, Inc.*<sup>32</sup>

The State Fire Marshal, who opined that an elderly woman was burned to death due to an electric blanket, was barred from testifying because he failed to examine, consider and then eliminate all other potential causes of the fire in the area of the blanket, which included other electrical devices and a candle, in contravention of NFPA 921's requirement that "all other reasonable origins and causes" be excluded. The Fourth Circuit found that the district court did not abuse its discretion in excluding the testimony, describing the record as "so speculative that a jury has to guess to determine whether there is liability of either the warranty or negligence for the jury to speculate on."<sup>33</sup>

## Preparing Your Expert: Top Ten Practical Strategic Insights

So what does all this mean? To enhance likely success in overcoming the *Daubert* hurdles, here's a practical checklist of ten critical strategic priorities/considerations:

- 1) Retain the "right experts" – properly qualified experts whose opinions "fit" the relevant case issues.
- 2) Was the expert's opinion and/or methodology subject to peer review?
- 3) Is the proffered opinion/methodology generally accepted in the relevant scientific field?
- 4) Was testing conducted to verify the proffered theory?
- 5) Is there a known or knowable error rate?
- 6) Can the results be replicated?
- 7) Has all relevant evidence been considered?
- 8) Did the expert inspect the site and examine the artifacts?
- 9) Does the expert's opinion address applicable industry standards/practices?
- 10) Is the expert relying on adequate and credible evidence/data?

**Bottom Line:** When asked, "Where's the Beef?," your expert must be able to show that the underlying evidentiary support and methodology for his or her proffered opinions are reliable and credible – the proof frequently comprises verifiable data, calculations, credible evidence and logical reasoning.

## Endnotes

<sup>1</sup> 509 U.S. 579 (1993).

<sup>2</sup> *Frye v. United States*, 293 F. 1013 (D.C. Cir. 1923).

<sup>3</sup> See Michael J. Saks, *Merlin and Solomon: Lessons from the Law's Formative Encounters with Forensic Identification Science*, 49 HASTINGS L.J. 1069, 1076 (1998). ▶▶

- <sup>4</sup> Confronting the New Challenges of Scientific Evidence, 108 HARV. L. REV. 1481, 1529 n. 160 (1995).
- <sup>5</sup> D. Michael Risinger, Navigating Expert Reliability: Are Criminal Standards of Certainty Being Left on the Dock? 64 ALB. L. REV. 99, 101, 104 (2000).
- <sup>6</sup> 509 U.S. at 590.
- <sup>7</sup> Risinger, 64 ALB. L. REV. at 104.
- <sup>8</sup> *Ruffin v. Shaw Indus., Inc.*, 149 F.3d 294, 297 (4th Cir. 1998).
- <sup>9</sup> *Hall v. Baxter Healthcare Corp.*, 947 F. Supp. 1387, 1407 (D. Or. 1996).
- <sup>10</sup> *Mich. Millers Mut. Ins. Corp. v. Benfield*, 140 F.3d 915, 921 (11th Cir. 1998).
- <sup>11</sup> *Id.*
- <sup>12</sup> *Pride v. BIC Corp.*, 54 F. Supp. 2d 757 (E.D. Tenn. 1998), *aff'd*, 218 F.3d 566 (6th Cir. 2000).
- <sup>13</sup> *See Pride*, 54 F. Supp. 2d 757.
- <sup>14</sup> *Pride*, 218 F.3d 566.
- <sup>15</sup> *Id.* at 573.
- <sup>16</sup> *Fireman's Fund Ins. Co. v. Canon, U.S.A., Inc.*, 394 F.3d 1054 (8th Cir. 2005).
- <sup>17</sup> *Id.* at 1057-58.
- <sup>18</sup> *Id.* at 1058.
- <sup>19</sup> *Truck Ins. Exch. v. Magnetek, Inc.*, 360 F.3d 1206 (10th Cir. 2004).
- <sup>20</sup> *Id.* at 1211.
- <sup>21</sup> *Id.* at 1212-13.
- <sup>22</sup> *Windham v. Circuit City Stores, Inc.*, 420 F. Supp. 2d 1206 (Dist. Kan. 2006).
- <sup>23</sup> *Id.* at 1212.
- <sup>24</sup> *Bitler v. A.O. Smith Corp.*, 400 F.3d 1227 (10th Cir. 2004).
- <sup>25</sup> *Ferrara & Dimercurio v. St. Paul Mercury Ins. Co.*, 240 F.3d 1 (1st Cir. 2001).
- <sup>26</sup> *Id.* at 9.
- <sup>27</sup> *Hartley v. St. Paul Fire & Marine Ins. Co.*, No. 03-6208, 118 Fed. Appx. 914, 2004 U.S. App. LEXIS 26613 (6th Cir. 2004).
- <sup>28</sup> *Id.* at 920.
- <sup>29</sup> *State Farm Fire & Cas. Co. v. Holmes Prods.*, No. 04-4532, 165 Fed. Appx. 182, 2006 U.S. App. LEXIS 2370 (3d Cir. Jan. 31, 2006).
- <sup>30</sup> *Id.* at 186, 2006 U.S. App. LEXIS 2370, at \*9.
- <sup>31</sup> *Id.*
- <sup>32</sup> *Bryte v. Am. Household, Inc.*, 429 F.3d 469 (4th Cir. 2005).
- <sup>33</sup> *Id.* at 478. ■

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