

**UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF OHIO
WESTERN DIVISION**

ZURICH AMERICAN INSURANCE COMPANY,
as subrogee of Orton Development, Inc.
and Nineteen Ten Elm Street, LLC,

CASE NO.: 1:11-cv-108

Judge Michael R. Barrett

Plaintiff,

v.

THE O.W. TAYLOR, LLC,

Defendant.

OPINION AND ORDER

This matter is before the Court on Defendant The O.W. Taylor, LLC's Motion in Limine to Exclude Opinions of Plaintiff's Experts, and of Daniel Wolf. (Doc. 34). Plaintiff Zurich American Insurance Company filed a response in opposition (Doc. 37), and O.W. Taylor filed a reply (Doc. 41). This matter is now ripe for review.

I. BACKGROUND

Plaintiff Zurich American Insurance Company ("Zurich") insured Nineteen Ten Elm Street, LLC and Orton Development, Inc., the owner and developer, respectively, of the building located at 1910 Elm Street in Cincinnati, Ohio ("1910 Elm Street"). The building at 1910 Elm Street was undergoing renovations during the time period at issue for which Defendant O.W. Taylor, LLC ("O.W. Taylor") was providing contracting services.

On January 8, 2010, a fire occurred at 1910 Elm Street. Employees of O.W. Taylor had been at the building earlier in the day but had left at approximately 4:00 p.m. The fire was first reported at 8:23 p.m. The fire was responded to and subsequently

investigated by the Cincinnati Fire Department ("CFD"). The fire caused damages for which Zurich, on behalf of its insureds, paid \$1,228,301.00. Zurich filed this subrogation action against O.W. Taylor seeking to recover the \$1,228,301.00 in damages it paid out.

Daniel Wolf was a member of the CPD's investigation team. Wolf opines that the cause of the fire was a cigarette discarded by O.W. Taylor's employee, William Terrell. Zurich also has hired two experts – Kerry Autio and Craig L. Beyler – to examine the evidence and render opinions about the cause of the fire. Both Autio and Beyler issued expert reports in which they opine that the cause of the fire was a cigarette discarded by Terrell.

II. LEGAL STANDARD

O.W. Taylor has moved to exclude the opinions of Wolf, Autio and Beyler pursuant to Federal Rule of Evidence 702 and *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579, 597, 113 S. Ct. 2786, 125 L. Ed. 2d 469 (1993). Rule 702 governs the admissibility of expert testimony. It provides that:

A witness who is qualified as an expert by knowledge, skill, experience, training or education may testify in the form of an opinion or otherwise if:

- (a) the expert's scientific, technical, or other specialized knowledge will help the trier of fact to understand the evidence or to determine a fact in issue;
- (b) the testimony is based on sufficient facts or data;
- (c) the testimony is the product of reliable principles and methods;
and
- (d) the expert has reliably applied the principles and methods to the facts of the case.

Fed. R. Evid. 702; *see also United States v. Semrau*, 693 F.3d 510, 520 (6th Cir. 2012).

Rule 702 confers upon trial judges the role of gatekeeper when considering the use of expert testimony. *Daubert*, 509 U.S. at 597. The trial court's gatekeeping role is two-fold. First, the Court must determine whether the proffered testimony is reliable. *Id.* at 590. The reliability assessment focuses on whether the reasoning or methodology underlying the testimony is scientifically valid. *Id.* The expert's testimony must be grounded in the methods and procedures of science and must be more than unsupported speculation or subjective belief. *Id.* The Supreme Court in *Daubert* set out four non-exclusive factors to aid in the determination of whether an expert's methodology is reliable: (1) whether the theory or technique has been tested; (2) whether the theory or technique has been subjected to peer review and publication; (3) the known or potential rate of error of the method used and the existence and maintenance of standards controlling the technique's operation; and (4) whether the theory or method has been generally accepted by the scientific community. *Id.* at 593-94. See also *Deal v. Hamilton County Bd. of Ed.*, 392 F.3d 840, 851 (6th Cir. 2004). However, the test of reliability is a "flexible one" that focuses on the "principles and methodology, not the conclusions they generate" and there is no "definitive checklist or test" that must be satisfied for expert testimony to be reliable. *Daubert*, 509 U.S. at 594-95.

The second prong of the Court's gatekeeping role requires an analysis of whether the expert's reasoning or methodology can be properly applied to the facts at issue; that is, whether the opinion is relevant to the facts at issue. See *Daubert*, 509 U.S. at 591-93. This relevance requirement ensures that there is a "fit" between the testimony and the issue to be resolved by the trial. *Id.*; see also *United States v. Bonds*,

12 F.3d 540, 555 (6th Cir. 1993). Thus, an expert's testimony is admissible under Rule 702 if it is predicated upon a reliable foundation and is relevant.

The gatekeeper role, however, is not intended to supplant the adversary system or the role of the jury; rather, "[v]igorous cross-examination, presentation of contrary evidence, and careful instruction on the burden of proof are the traditional and appropriate means of attacking shaky but admissible evidence." *Daubert*, 509 U.S. at 596. The judge's role is simply to keep unreliable and irrelevant information from the jury because of its inability to assist in factual determinations, its potential to create confusion, and its lack of probative value. *Wellman v. Norfolk and W. Ry. Co.*, 98 F. Supp. 2d 919, 923-24 (S.D. Ohio 2000).

III. LEGAL ANALYSIS

O.W. Taylor seeks exclusion of the opinions of Wolf, Autio and Beyler because (a) they are based on the absence of evidence rather than the presence of facts to support their conclusions, and (b) they are based on an unreliable methodology of "negative corpus" which allegedly has been rejected in the Fire Investigation Community. The Court will address each argument below.

A. Factual Foundation for Opinions

1. The parties' arguments

O.W. Taylor argues that the opinions are speculative because they are connected to the existing data only by the ipse dixit of the expert. Specifically, O.W. Taylor argues that the opinions are based on a series of inferences unsupported by the factual record. In support, O.W. Taylor relies upon an Ohio Supreme Court case, *Sobolovitz v. The Lubric Oil Company*, 107 Ohio St. 204 (1923), for the proposition that

"an inference of fact cannot be predicated upon another inference, but must be predicated upon a fact supported by evidence."

Zurich opposes exclusion of the opinions of Wolf, Autio and Beyler based upon lack of a factual foundation. First, Zurich challenges O.W. Taylor's reliance on *Sobolovitz* because that case was decided under state substantive and procedural law that is inapplicable here, and because that case did not involve the exclusion of expert testimony. Second, Zurich contends that there is ample evidence from which a jury could infer that Terrell was smoking on the third floor on the day of the fire, and that the issues raised by O.W. Taylor go to the weight that the jury should give to the opinions at trial and not to their admissibility. Third, Zurich contends that the Court should consider a Sixth Circuit case, *V&M Star Steel v. Centimark Corporation*, 678 F.3d 459, 465 (6th Cir. 2012), which it alleges is instructive. *V&M Star Steel* involved a breach of contract and negligence claim against a roofing contractor for damages when roofing materials placed on the roof fell off causing damage to plaintiff's property and business. *Id.* at 461-63. Since there were no eyewitnesses to the incident, the parties retained expert witnesses. *Id.* at 465. On appeal, the Sixth Circuit recognized that experts "are permitted a wide latitude in their opinions, including those not based on firsthand knowledge" and that expert opinion "can also be based on an inference and can embrace an ultimate issue." *Id.* at 469 (citations omitted).¹ Applying those principles, the Sixth Circuit determined that the opinion of the plaintiff's expert was admissible under Rule 702(a) and was relevant because it assisted the jury in

¹ The language of Federal Rule of Evidence 704 was amended in 2011 for stylistic purposes, which included the deletion of "all reference to an 'inference' on the grounds that the deletion made the Rule flow better and easier to read, and because any 'inference' is covered by the broader term 'opinion.'" Fed. R. Evid. 704, Notes of Advisory Committee on 2011 amendments. The Advisory Committee noted that courts have not made substantive decisions based on a distinction between an opinion and an inference, and indicated that no change in the current practice was intended. *Id.*

deciding the party's dispute regarding the existence and application of industry standards, and specifically determined that the expert's explanation of how the fall occurred even though the metal bands on the roofing materials was still intact was sufficient based on his extensive knowledge and experience in the industry. *Id.*

O.W. Taylor replies that Zurich still failed to cite any fact that shows Terrell caused the subject fire by smoking a cigarette and discarding it on the third floor. First, O.W. Taylor again contends that the opinion is based on a series of inferences. Second, it argues that the opinions ignore other evidence in the case, including evidence that there were other K.W. Electric employees in the building who were known smokers, and that the opinions offer no explanation for excluding that evidence. Third, O.W. Taylor challenges the experts' opinions by citing to allegedly conflicting evidence in the record about the building being secure and by arguing that the experts' reliance on the fact that the motion detector did not activate until after the fire was reported failed to acknowledge the circumstances under which the detector would activate. Fourth, O.W. Taylor takes issue with Zurich's "subjective interpretation" of Terrell's choice of words concerning his practice of disposing his cigarette butts in his tool belt, claiming that the interpretation is not actual evidence. Finally, O.W. Taylor argues that the only evidence of Terrell smoking is the absence of evidence as to another possible source.

2. Analysis

Despite the litany of complaints by O.W. Taylor, the Court views them all as issues that are properly dealt with by "[v]igorous cross-examination, presentation of contrary evidence, and careful instruction on the burden of proof." *Daubert*, 509 U.S. at 596. O.W. Taylor certainly points out a number of aspects of the opinions that are fairly

viewed as weaknesses in the factual basis underlying the opinions, but weakness in the factual basis of the opinions goes to the weight of the testimony rather than its admissibility. *McLean v. 988011 Ontario, Ltd.*, 224 F.3d 797, 801 (6th Cir. 2000).

A close examination of the opinions and the surrounding record in the case illustrates that the challenges by O.W. Taylor go to the weight to be given to the opinions rather than their admissibility. Wolf, Beyler and Autio all opine that the cause of the fire was Terrell discarding a cigarette on the third floor of the building where the fire started by smoldering in the deteriorating wood. (See Doc. 37-1, p. 20; Doc. 37-6, pp. 5-6; Doc. 37-8, p. 4). Although O.W. Taylor challenges this opinion by contending there is no evidence that its employee Terrell was smoking on the third floor on the day in question at the point where the fire started, the Court finds that there is sufficient evidence in the record upon which the experts based their opinions. Among other evidence, there is testimony from Terrell that he is a smoker and that he regularly smokes a pack of cigarettes a day. (Doc. 34-1, pp. 24, 25). He admitted that he has smoked on the job and that he had previously smoked while on the job in the building at which the fire occurred. (*Id.* at 28-29, 70). He testified that "most of the time" he tried to discard his cigarettes into something, such as his tool belt, when he did smoke on the job. (*Id.* at 82). He testified that he may have put out his cigarettes on the floor, but he would "try to get it picked up." (*Id.*) He testified that he was the only smoker on his crew. (*Id.* at 29). He also testified that he was working on the third floor on the day in question. (*Id.* at 35, 49). He testified that he thought he would not have been smoking because his work required the use of both hands, but to his knowledge, no one else was working on the third floor while he was there. (*Id.* at 66-67, 70-71, 84). Terrell's

coworker, Nalley, testified that he did not see Terrell smoke on the third floor on the day of the fire. (Doc. 34-3, p. 16). Two of the three fire investigators ruled out any other potential ignition source (Doc. 37-6, p. 5; Doc. 37-8, p. 4), and there was no electric or heat on the third floor and the employees did not use any power tools (Doc. 34-1, pp. 40, 69). There is testimony that the floor on the third floor was severely deteriorated. (Doc. 34-5, p. 48). There is evidence that the motion detector was not activated until after the fire was reported (Doc. 34-5, p. 162), and there is evidence that the building was secure and that no fresh footprints were seen by the fire fighters in the snow at the time they entered the building to fight the fire (Doc. 34-5, pp. 62-63). While there may be other interpretations of the evidence, the Court's job is not to determine what the correct interpretation of the evidence is but whether the interpretation of the evidence proffered by the expert's is supported by sufficient facts and data. Here, although there is no direct physical evidence of a discarded cigarette at the origin of the fire, the Court finds that the other evidence of record provided a sufficient factual foundation on which to develop a causation hypothesis that involved a cigarette being discarded by Terrell.

The Court is not persuaded by O.W. Taylor's argument that the opinions are impermissibly built upon multiple inferences. O.W. Taylor's reliance on *Sobolovitz* is misplaced since that case did not address the exclusion of expert testimony, and state evidentiary law is inapplicable here on the issue of whether to exclude expert opinion under Federal Rule of Evidence 702 and *Daubert*. See *V&M Star Steel*, 678 F.3d at 465.

Nevertheless, even if *Sobolovitz* was applicable, it would not alter the Court's conclusion. The Ohio Supreme Court analyzed *Sobolovitz* in *McDougall v. Glenn Cartage Co.*, 169 Ohio St. 522, 525-26, 160 N.E.2d 266, 269 (1959). In *McDougall*, the

Ohio Supreme Court was asked to determine whether the facts and the law of a personal injury case supported an inference of negligence. 169 Ohio St. at 525-26. As part of its analysis, the Court gave several examples of when inferences are properly made from the facts. *Id.* One example given related to when it may be properly inferred from the facts that a person committed suicide:

[I]f a seasick passenger on a ship in mid-ocean was last seen standing by the rail and he then disappeared completely, the inference may properly be drawn that he fell overboard and was drowned, but the additional inference that he intentionally jumped overboard and committed suicide can not be indulged. However, if it is shown that the passenger was in desperate financial and domestic trouble, was visibly depressed and had on several occasions threatened to do away with himself, then from such facts the inference can be drawn that he deliberately threw himself overboard and committed suicide.

Id. The Ohio Supreme Court recognized that multiple inferences can be made properly from the same set of facts without impermissibly building upon each other. *Id.*

Here, as explained above, there are sufficient facts and data from which Wolf, Autio, and Beyler could infer that Terrell was smoking in the building on the third floor, that Terrell discarded his cigarette on the third floor, and that the cigarette smoldered and caused the fire due to the floor conditions. Those are multiple inferences based upon the same evidence that were relied upon to make an ultimate opinion on causation as permitted under Federal Rule of Evidence 704. Moreover, what is of importance is that the expert's opinion, where based on assumed facts, finds some support for those assumptions in the record. *McLean*, 224 F.3d at 801. As indicated above, the opinions at issue here are supported by the factual record.

O.W. Taylor's reliance on *Turpin v. Merrell Dow Pharmaceuticals, Inc.*, 959 F.2d 1349 (6th Cir. 1992) is equally unpersuasive. *Turpin* involved personal injury in the form

of birth defects that allegedly was caused by a drug manufactured by the defendant. The court excluded testimony from the plaintiff's experts who relied on animal studies and claimed that because an ingredient in the drug interfered with cartilage cell formation in animals, the drug was capable of causing similar limb defects in humans. *Id.* at 1360. It held that the

record's explanation of the animal studies is simply inadequate. Although the animal studies themselves may have been scientifically performed, the exact nature of these tests is explained only in general terms. The record fails to make clear why the varying doses of [the drug or the ingredient in the drug] given to the rats, rabbits and in vitro animal cells would permit a jury to conclude that [the drug] more probably than not causes limb defects in children born to mothers who ingested the drug at prescribed doses during pregnancy. The analytical gap between the evidence presented and the inferences to be drawn on the ultimate issue of human birth defects is too wide. Under such circumstances, a jury should not be asked to speculate on the issue of causation.

Id. at 1360-61. Here, the Court does not find that the analytical gap between the evidence presented and the inferences to be drawn on the ultimate issue of the cause of the fire are too wide to allow them to be presented to the jury. The opinions are grounded in the interpretation of facts in the record by individuals who are undisputedly qualified in the field of expertise. While O.W. Taylor interprets the evidence differently and has exposed potential weaknesses in the three opinions, those are issues to be addressed by the trier of fact; they do not preclude admissibility of the evidence under Rule 702.

B. The Methodology

1. The parties' arguments

O.W. contends that the methodology utilized by Wolf, Autio and Beyler is known as "negative corpus" and has been rejected in the Fire Investigation Community such

that the methodology used is unreliable. Specifically, O.W. Taylor argues that the three opinions that the subject fire was caused by "discarded smoking materials" is based on the claimed elimination of all other sources of ignition for the fire. In support, O.W. Taylor cites to NFPA 921, a "Guide for Fire and Explosion Investigations," issued by the Technical Committee on Fire Investigations in 1992 ("NFPA 921"). According to O.W. Taylor, NFPA 921 explicitly rejects the use of negative corpus to classify the cause of a fire.

Zurich responds that O.W. Taylor's reliance on NFPA 921, § 18.6.5 (2011 ed.) is misplaced for several reasons. First, Zurich references the portion of Section 18.6.5 of NFPA 921 that provides: "Any hypothesis formulated for the causal factors (e.g., first fuel, ignition source, and ignition sequence), must be based on facts. Those facts are derived from evidence, observations, calculations, experiments, and the laws of science." Second, Zurich contends that a "negative corpus" is a different concept than the process of elimination outlined in NFPA 921, and NFPA 921 sets forth guidelines for when a fire investigator may use the process of elimination. Third, Zurich cites and explains multiple cases from other district courts that it contends are relevant and instructive here.

In its reply, O.W. Taylor attempts to distinguish the cases relied upon by Zurich. For example, it challenges Zurich's reliance on *Gichner v. Antonio Troiano Tile & Marble Co., Inc.*, 410 F.2d 238 (D.C. Cir. 1969) on the basis that it was decided before the 2011 amendment to the NFPA that rejects negative corpus, which O.W. Taylor contends is "essentially the same process that was outlined" in *Gichner*. (Doc. 41, p. 9). Similarly, O.W. Taylor attempts to factually distinguish *Ledbetter v. Blair Corporation*, No. 3:09-

CV-843-WKW [WO], 2012 U.S. Dist. LEXIS 88789 (M.D. Ala. June 27, 2012), *Sarro v. Philip Morris USA Inc.*, 857 F. Supp. 2d 182 (D. Mass. 2012), and other cases relied on by Zurich, from the present case. O.W. Taylor posits that this case is more similar to *Michigan Millers Mutual Insurance Corporation v. Benfield*, 140 F.3d 915 (11th Cir. 1998).

2. Analysis

Although the parties agree that NFPA 921 establishes the recognized standards for fire investigation, they dispute whether NFPA 921 was properly applied in this matter. NFPA 921 has been recognized as an acceptable methodology for scientific-based investigation and analysis of fire and explosion incidents. See *Royal Ins. Co. of Am. v. Joseph Daniel Constr. Co.*, 208 F. Supp. 2d 423, 426-27 (S.D.N.Y. 2002) (citing *Travelers Prop. & Cas. Corp. v. GE*, 150 F. Supp. 2d 360, 366 (D. Conn. 2001) (recognizing that the NFPA 921 is a "peer reviewed and generally accepted standard in the fire investigation community")); see also *Ledbetter*, 2012 U.S. Dist. LEXIS 88789, at *37 ("NFPA 921 is an accepted methodology for the investigation and analysis of fires and explosives."); *Turner v. Liberty Mut. Fire Ins. Co.*, No. 4:07-cv-00163, 2007 U.S. Dist. LEXIS 68555, at *8-9 (N.D. Ohio Sept. 14, 2007) ("The National Fire Protection Association 921 Guide for Fire and Explosion Investigations ('NFPA 921') is a 'recognized guide for assessing the reliability of expert testimony in fire investigations.'") (citing *Indiana Ins. Co. v. General Elec. Co.*, 326 F. Supp. 2d 844, 849 (N.D. Ohio 2004)); *Travelers Indem. Co. v. Ind. Paper & Packaging Corp.*, No. 3:02-cv-491, 2006 U.S. Dist. LEXIS 43851, at *12 (E.D. Tenn. June 27, 2006) (recognizing "that NFPA 921

is a peer reviewed and generally accepted standard in the fire investigation community."). The portions of NFPA relied upon by the parties are as follows:

The process of determining the ignition source for a fire, by eliminating all ignition sources found, known, or believed to have been present in the area of origin, and then claiming such methodology is proof of an ignition source for which there is no evidence of its existence, is referred to by some investigators as "negative corpus" . . . This process is not consistent with the Scientific Method, is inappropriate, and should not be used because it generates un-testable hypotheses and may result in incorrect determinations of the ignition source and first fuel ignited.

NFPA 921 § 18.6.5.² Typically, the issue of negative corpus is raised when a party reaches conclusions that incendiaries or arson was employed as the source for otherwise unexplained fires after all accidental causes are eliminated. See *Ledbetter*, 2012 U.S. Dist. LEXIS 88789, at *38 n.10.

The parties further reference the following portion of Section 18.6.5: "Any hypothesis formulated for the causal factors (e.g., first fuel, ignition source, and ignition sequence), must be based on facts. Those facts are derived from evidence, observations, calculations, experiments, and the laws of science. Speculative information cannot be included in the analysis."³ NFPA 921 § 18.6.5.

Based on Section 18.6.5, an expert in the field may typically opine on two separate issues: the fire's point of origin and its cause. O.W. Taylor's motion does not challenge the opinions as to the fire's point of origin in the southwest portion of the third floor of the building, and thus, no reason has been provided for excluding the expert's opinions as to origin. Instead, O.W. Taylor takes issue with the admissibility of only the

²Section 18.6.5 is taken from Zurich's response in opposition, as neither party provided the Court with a copy of the relevant section of NFPA 921.

³This portion of section 18.6.5 is cited in O.W. Taylor's motion as well as Zurich's response. (Docs. 34, 37).

causation opinions of Wolf, Autio, and Beyler. Specifically, it contends that in opining on causation, the three individuals misapplied NFPA 921 standards by using a faulty process of elimination known as "negative corpus" and failed to properly investigate other possible causes of the fire.

The Court disagrees with O.W. Taylor that the methodology used to generate the opinions constitutes a "negative corpus" and therefore is unreliable. Section 18.6.5 of NFPA 921 provides that it is not consistent with the Scientific Method to eliminate "all ignition sources found, known, or believed to have been present in the area of origin, and then claim[] such methodology is proof of an ignition source for which there is *no evidence of its existence*." NFPA 921, § 18.6.5 (emphasis added). Here, the experts did not claim that the elimination of all other sources found in the area of origin was proof of an ignition source for which there is no evidence of its existence. Instead, each expert collected and analyzed the data based on their knowledge and experience, and developed a cause hypothesis. While there may not be physical evidence of a discarded cigarette at the point of origin, there is sufficient evidence of record on which the experts relied to eliminate other potential causes and to formulate a cause hypothesis based on a discarded cigarette. That hypothesis was also adequately tested by the experts prior to rendering their opinions. For these reasons, the Court holds that the three opinions on the cause of the fire were based on a reliable methodology and a reliable application of the facts to the present case.

Wolf

Wolf garnered facts from his personal observations of the scene of the fire as well as from the investigation of the scene of the fire. (Doc. 37-3, pp. 7-8). Based on

his personal observations and investigation of the scene, Wolf determined that the origin of the fire was the southwest portion of the building on the southeast portion of the third floor. (Doc. 34-5, pp. 23, 32). He indicated that he determined the origin based on the burn patterns, and he also explained that he considered whether the fire originated underneath on the second floor, but ruled that origin out because of the nature of the burn patterns. (*Id.* at 39).

As for potential causes, Wolf explained in his deposition how he considered and eliminated various potential causes. First, he explained that he determined that there was no electric on the third floor of the building and, thus, ruled the electric out as a potential ignition source. (*Id.* at 31-32). Second, he indicated that there were construction string lights in the stairways, but those were ruled out because they were not in the area of origin. (*Id.* at 55). Third, he found that even though there were hanging heaters, there was no heat or gas running on the third floor. (*Id.* at 33-35). Fourth, he considered whether there was a break in, but ruled that out as a potential source since there were no footprints in the snow indicating a person had been there, the alarm had not triggered until after the fire was reported, and he had observed that there was no evidence of a forced entry. (*Id.* at 27-28, 31-32, 62-64). Fifth, the interviews indicated that the electricians were not on the third floor on the day of the fire, and he had no contradicting evidence. (*Id.* at 57-58). Sixth, investigation and testing of wood did not reveal the existence of an accelerant and no other evidence supported a theory of a breach. (*Id.* at 67-68). Seventh, he testified that he was originally told that none of O.W. Taylor's employees were working on the third floor on the day of the fire, but he later found out that Terrell and Nalley had been working on that floor. (*Id.* at 54-

57). He also learned that Terrell was a smoker, but Nalley was not. (*Id.*) Terrell told Wolf that he did not remember smoking on the day of the fire. (*Id.* at 56-57, 59). Cigarette butts were found throughout the building, and employees were not prevented from smoking in the building. (*Id.* at 32).

Wolf then turned his attention to how the fire burned. (*Id.*) He noted that the wood was deteriorated. (*Id.* at 32, 71-72). He pulled apart pieces of the wood on the floor to examine the conditions. (*Id.* at 32, 35, 39). He noted that wood insulates heat and lets the heat grow as it gains air from underneath. (*Id.* at 65-66). He stated that there is literature that supports that a cigarette is an ignition source. (*Id.* at 70-77). He further noted that the ignition temperature of wood is about 500 degrees while the temperature of a lit cigarette is approximately 930 to 1,330 degrees. (*Id.*) Thus, based on all of the evidence, he determined that there had been a smoldering fire and the only cause that could not be eliminated was a discarded cigarette. (*Id.*)

He further explained he relied on NFPA 921 and that he conducted testing in the form of putting a lit cigarette in a box of sawdust, which then smoldered for approximately one-half of an hour. (*Id.* at 81-83). He, however, did not recreate the exact conditions of the floor at the time of the fire. (*Id.* at 82).

In *Gichner v. Antonio Troiano Tile & Marble Co.*, 410 F.2d 238 (D.C. Cir. 1969), a case relied upon by Zurich, the question presented was whether there was sufficient evidence that a warehouse fire was caused by careless smoking to sustain a claim for negligence. *Id.* at 243. Specifically, the appellate court considered whether the plaintiff's expert relied on sufficient evidence to find careless smoking as the cause of the fire. *Id.* In analyzing the issue, the appellate court noted:

[W]e think that, where a fire investigator identifies the cause of a fire in terms of probabilities, as opposed to mere possibilities, by eliminating all potential causes of the fire but one, that testimony is not only relevant, but in some circumstances may be a basis for decision. Bearing on the credibility of such testimony is the thoroughness with which the expert identifies all the potential causes and the soundness of his reasoning in eliminating each one. . . .

We also recognize that when smoking causes a fire it is highly likely that the offending cigarette butt or ash will dissolve in smoke in the ensuing conflagration. Thus direct evidence of smoking will be hard for the fire investigators to find, and they will have to form their opinions by way of exclusion of other possibilities.

Often the plaintiff in a fire case, at least where smoking is the cause, can hardly be expected to do more than present expert testimony of this sort as to the fire's cause, and support that testimony by other, direct, evidence of smoking in the premises shortly before the fire began. His burden might well be impossible if his experts also had to discover some direct evidence of a cigarette butt or ash; and placing such a burden on him would be unnecessarily harsh in view of the reliability of expert testimony even when arrived at by a process of elimination.

Id. at 247. In that colloquy, the appellate court does not appear to advocate the use of a "negative corpus" as suggested by O.W. Taylor. Instead, it appears to permit the use of a process of elimination where the elimination of potential causes and any causal hypothesis is supported by the evidence in the record, even where there is no direct, physical evidence of the source (e.g., cigarette butts). Although the Court is cognizant of the fact that the case pre-dated both *Daubert* and NFPA 921 as amended in 2011, it does not find that such a standard is inconsistent with either.

Zurich also relies on *Sarro v. Philip Morris USA Inc.*, 857 F. Supp. 2d 182 (D. Mass. 2012). There, the plaintiff's expert personally observed the scene of the fire. *Sarro*, 857 F. Supp. 2d at 186 n.3 The expert first identified the fire's origin and "then employed a process of elimination to determine that the fire's cause was a dropped cigarette." *Id.* Based on experience and applying the practices set forth in NFPA 921

(2008 ed.), he found that the only ignition source present was a cigarette and concluded that the fire was accidental in nature as a result of smoldering smoking materials dropped onto carpeted flooring. *Id.* The district court observed that the process of elimination substantially conformed to accepted fire investigation protocols. *Id.*

O.W. Taylor challenges Zurich's reliance on *Sarro* by alleging that the cause of the fire in *Sarro* was clearly established to be a cigarette. In support, O.W. Taylor cites to the district court's statement that "when a fire's origin is *clearly defined*, the NFPA 921 permits investigators to determine a fire's cause via a process of elimination." (Doc. 41, p. 10) (quoting *Sarro*, 857 F. Supp. 2d at 186 n.3 (emphasis added by O.W. Taylor)). O.W. Taylor argues that "[t]hose facts are not present in this action – the cause of the fire in this action is anything but 'clearly defined.'" (Doc. 41, p. 10). However, the Court finds O.W. Taylor's argument unpersuasive. The quotation from *Sarro* referenced by O.W. Taylor indicates that the origin – not the cause – must be clearly defined to use a process of elimination to determine the cause. Nowhere in the briefings does O.W. Taylor challenge the conclusion as to the location where the fire started (i.e., the origin of the fire); instead, it challenges the *cause* of the fire (i.e., a cigarette discarded by Terrell). Indeed, O.W. Taylor argues that "the *cause* of the fire in this action is anything but 'clearly defined.'" (Doc. 41, p. 10) (emphasis added). NFPA 921 does not indicate that the cause also must be clearly defined. Where, as here, the origin is clearly defined, the use of a process of elimination is proper. As such, O.W. Taylor's argument must fail on that basis.

A third case discussed by the parties is *Ledbetter*, 2012 U.S. Dist. LEXIS 88789, at *6-8. *Ledbetter* involved a product liabilities action stemming from a home fire that

caused the death of an individual. One of the expert witnesses sought to opine that the origins of the fire were in the kitchen when a bathrobe came in contact with a lit stove burner and on the sofa after the lit bathrobe came into contact with it. *Id.* at *35-36. In formulating his opinion, the expert relied on NFPA 921. *Id.* at 37. Although the defendant sought to exclude the testimony on the basis that the expert improperly relied on a negative corpus to define the stove as the ignition source, the district court rejected that argument. *Id.* at 37-42. The district court noted that the expert explained how the process of elimination played a legitimate and integral role under NFPA 921 for selecting a final hypothesis, which was a different concept than "negative corpus." *Id.* at *39. The district court also found that there was a fit between the expert opinion and the facts where the expert garnered facts about the fire from observation of the scene and review of photographs, reports, statements, deposition testimony and other information about the fire and the victim. *Id.* The district court noted that the expert analyzed the facts based on his knowledge, training, experience and expertise, that he developed a hypothesis based on that empirical data, and then tested his hypothesis using fire modeling and a carbon monoxide exposure analysis. *Id.* Based on his testing, he concluded that no causes, other than that set forth in his hypothesis, were consistent with the data. *Id.* at *41.

Ledbetter is instructive here. Similar to the *Ledbetter* expert, Wolf engaged in a systematic elimination of the other possible ignition sources he located in and around the area of origin in accordance with NFPA 921 § 18.2.1. *Travelers Casualty Ins. Co.*, 2012 U.S. Dist. LEXIS 117789, at *13 (quoting *Kentucky Farm Bureau Mut. Ins. Co. v. Hitachi Home Elec.*, No. 3:08-30, 2009 U.S. Dist. LEXIS 73998 (E.D. Ky. Aug. 20,

2009)). He tested his methods using his experience, principles set forth in fire science literature, and some physical experimentation. Based on that testing, he concluded that no other possible causes were consistent with the data. Although there may be some weaknesses in his opinion, those weaknesses do not render his opinion unreliable and inadmissible.

The case *Michigan Millers Mutual Ins. Corp. v. Benfield*, 140 F.3d 915 (11th Cir. 1998), upon which O.W. Taylor relies, is distinguishable from the present case. First, the *Michigan Millers Mutual Insurance* expert opined that a fire was *intentionally* set after eliminating all accidental causes and on the basis that there were no other possible sources of ignition of the fire. *Id.* at 921. Here, Wolf did not opine that the fire was intentionally set after eliminating all accidental causes, but instead eliminated all but one accidental cause, which was a human act. Further, the expert in *Michigan Millers Mutual Insurance* provided an insufficient explanation as to the methodology by which he eliminated the chandelier above the table on which the fire started as a possible ignition source and did not perform any tests and took no samples on which to base his conclusion that the fire was incendiary. *Id.* at 921. In contrast, Wolf rationally explained the methodology by which he eliminated other possible accidental causes of the fire, conducted some physical testing of his hypothesis, and considered and applied scientific principles to the facts of the case. His opinion thus does not suffer from the same flaws as the expert opinion in *Michigan Millers Insurance*.

Based on the above analysis, the Court holds that Wolf's opinion is based on a reliable methodology that is applied reliably to the facts in this matter. His opinion therefore will not be excluded.

Autio

Similar to Wolf, Autio garnered facts from personal observations of the scene of the fire as well as from the fire investigation. (Doc. 37-6, pp. 2-4; *see also* Doc. 34-2). Based on his personal observations of the scene, Autio identified the undisputed point of origin of the fire – the southeast area of the southwest corner room on the third floor of Building C. (Doc. 37-6. p. 3). In arriving at his conclusion as to origin, Autio specifically noted evidence supporting his conclusion. First, he noted that the peripheral search of the building was unremarkable. (*Id.* at 1). Second, he considered pre-fire conditions showing evidence of structural deterioration and old wooden floors that were splintered and rotted. (*Id.* at 2). Third, he considered the exterior fire pattern analysis. (*Id.*) He indicated that wood trusses compromising the roof were the most damaged in the southwest corner of the building, the lowest fire patterns were located on the third floor in the southwest corner, and there was no evidence of an outward overpressure from within the building. (*Id.*) Third, he considered the interior fire pattern analysis, which indicated the fire had breached the floor and dropped into the southwest corner of the second floor, the structural integrity of the roof was compromised, some rooms remote to the room of origin were affected by the fire while some were not, and that the least affected areas were in the north section of the building. (*Id.*) Moreover, he noted that the fire patterns increased toward the third floor room in the southwest corner. (*Id.* at 2-3). Finally, he considered witness statements that indicated the fire originated in the southeast quadrant of the third floor room in the southwest corner. (*Id.*)

Next, Autio determined based on his observations and investigation that there were no ignition sources found, known, or believed to have been present in the area

that might be expected to be found in such an area. For example, he observed that there was no electric or heat running to that area of the building, determined that that no electric tools or other materials that were flammable or capable of spontaneous combustion were located on the floor, and noted that there was no evidence that accelerants or forced entry was found, which suggested that those elements were not the cause of the fire. (*Id.* at 2-5). He also determined that an incendiary fire was ruled out due to there being no evidence of a breach of the envelope of the building, no breach of the third floor windows, the doors being secure, and the lack of activity by the motion sensors prior to the fire department responding to the scene. (*Id.* at 5). As such, he deduced that a human act caused the fire. (*Id.* at 5).

Autio then developed a hypothesis based on the empirical data, and not on speculation. Specifically, he hypothesized that a cigarette discarded by Terrell on the third floor of the building on that day caused the fire. (Doc. 37-6, p. 5). To support that hypothesis, he relied on evidence that two individuals, Terrell and Nalley, were on the third floor on the day of the fire, and evidence that no K&W Electric contractors were on the third floor on the day of the fire. (*Id.* at 4-5). He further cites to evidence that Terrell and Nalley were at or near the place of origin on the day of the fire. (*Id.* at 4-5). There also was evidence that of the two employees, Terrell was the only one who smoked, and he smoked regularly and while on the job. (*Id.*) He further considered that the fire marshal's investigation documented cigarette butts throughout the building on other floors indicating that smoking occurred in the building. (*Id.*) He also noted that Terrell was not certain that he had smoked on the day of the fire on the third floor, but he appears to discount that information. (*Id.*)

That methodology was not unreliable as it was a process of elimination based on the existence of facts in the record. Although Autio may not have given as much weight to Terrell's statements about smoking as O.W. Taylor would desire, Autio is permitted to discount that evidence if he finds it unhelpful or unreliable based on his knowledge or experience. See *Travelers Casualty Ins. Co. v. Volunteers of American Kentucky, Inc.*, No. 5:10-301, 2012 U.S. Dist. LEXIS 117789, at *12-13 (E.D. Ky. Aug. 21, 2012) (noting that expert was permitted to discount evidence that contradicted his conclusion, just as the plaintiff's experts could discount the evidence that supports the conclusions of the defendant's experts). While there may be testimony or other evidence that could weaken Autio's opinion, such as the evidence cited by O.W. Taylor that Terrell's habit was to put his cigarettes out in his tool belt pocket or any alleged evidence that K.W. Electric employees who smoked were present on the third floor of the building on the day of the fire,⁴ that evidence goes to the weight of Autio's opinion rather than its admissibility. See *Travelers Casualty Ins. Co.*, 2012 U.S. Dist. LEXIS 117789, at *13 (noting that contrary evidence or the failure to account for certain pieces of evidence goes to weight, and not admissibility).

Autio tested his hypothesis by evaluating the facts in light of scientific principles. Specifically, he observed that the surface of the third floor was splintered and rotted wood. (Doc. 37-6, p. 5). He indicated that experimental and fire science literature recognized that those conditions are conducive to a slow smoldering fire caused by cigarettes. (*Id.*) In his deposition, he references scientific literature – namely, articles from "Fire Findings" – on which he relied and he also notes that he relied on his own

⁴ Although O.W. Taylor contends that the opinions ignore the possible presence of smokers from K.W. Electric, it has presented no evidence to the Court that shows or suggests that any of the K.W. Electric employees were on the third floor near or around the place of origin on the day of the fire.

knowledge and experience. (Doc. 34-2, pp. 122-23, 129-30, 142-43, 154, 190). There also is testimony relating to smoldering as set forth in NFPA 921 §§ 5.7.4.1.7.1 and 5.7.4.1.7.2. (*Id.* at 196-98). (Doc. 37-6, p. 5). Considering those factors, he found that the incubation time present in the case would be consistent with a cigarette smoldering for several hours before becoming an open flame. (*Id.*) Nevertheless, when challenged on that point in his deposition, he admitted it was difficult to determine exactly when it became an open flame. (Doc. 34-2, pp. 148-52).

In analyzing the reliability of Autio's opinion, the Court incorporates its analysis of the caselaw above with respect to Wolf's opinion. It also specifically recognizes that while Autio did not use physical tests but instead tested his methods using his experience and principles set forth in fire science literature and using his own knowledge and experience, the lack of physical testing of a hypothesis does not render expert testimony inadmissible if there was cognitive testing of the hypothesis that is sufficient. See *Travelers Insurance Co.*, 2012 U.S. Dist. LEXIS 117189, at *13-14 ("The inability to physically test a hypothesis . . . does not render expert testimony inadmissible if the expert tested his or her hypothesis by 'systematically eliminating the other possible ignition sources he located in and around the area of origin in accordance with NFPA 921 § 18.2.1.'") (quoting *Kentucky Farm Bureau Mut. Ins. Co.*, 2009 U.S. Dist. LEXIS 73998, at *11); see also NFPA 921 § 4.3.6. ("A hypothesis can be tested either physically by conducting experiments or analytically by applying scientific principles in thought experiments."). Here, the Court finds that cognitive testing is a sound methodology, and is sufficient under the facts and circumstances of

this case. Autio's failure to also utilize physical testing does not render his opinion unreliable and inadmissible.

The Court further notes that Autio's opinion does not suffer from the same flaws as the expert's opinion in *Michigan Millers Mutual Insurance Corporation*, 140 F.3d at 919-21. Unlike the expert in that case, Autio did not opine that the fire was intentionally set after eliminating all accidental causes. Instead, Autio eliminated all but one accidental cause in developing his cause hypothesis, and explained his methodology for doing so. He then arrived at his causation hypothesis that a human element, namely, a discarded cigarette, caused the fire. Using cognitive testing, he concluded that the cause hypothesis was supported by scientific literature and the facts of the case.

Based on the above analysis, the Court holds that Autio's opinion is based on a reliable methodology that is applied reliably to the facts in this matter. His opinion therefore will not be excluded.

Beyler

Beyler garnered facts from interviews of relevant personnel, as well as from the deposition of Wolf, the deposition of O.W. Taylor's expert, the report of Autio, and various photographs. (Doc. 37-8, Appx. B). He further relied on fire science literature to support his opinions. (*Id.* at 2-3). Beyler's opinion was intended to be a rebuttal to the opinion of O.W. Taylor's expert and, thus, it focused primarily on whether the causation hypothesis was consistent with fire science literature. (*Id.*)

Beyler first considered the point of origin as identified by Wolf and Autio, which the Court already has found to be reliable and unchallenged here. "An expert may rely on the reliable opinions of another expert in forming his own opinions." *Mason v.*

Safeco Ins. Co. of Am., No. 4:09-CV-1081, 2010 U.S. Dist. LEXIS 86696, 21-22 (E.D. Mo. Aug. 23, 2010) (citing Fed. R. Evid. 702 Advisory Committee Notes to 2000 Amendments ("The term 'data' is intended to encompass the reliable opinions of other experts.")). He then considered the empirical data supporting the cause hypothesis that a cigarette discarded on the third floor of the building on that day caused the fire. (Doc. 37-8, p. 5). Specifically, he considered evidence that two individuals, Terrell and Nalley, were on the third floor on the day of the fire, and evidence that no other individuals had been present in that area of the building on the day of the fire. (*Id.* at 1). He further cites to evidence that Terrell and Nalley were at or near the place of origin on the day of the fire. (*Id.* at 1). There also was evidence that of the two employees, Terrell was the only one who smoked, and he smoked heavily. (*Id.*) He also noted that Terrell was not certain that he had smoked on the day of the fire on the third floor, but he appears to discount that information. (*Id.*) Beyler further noted that incendiary causes of the fire had been eliminated due to a lack of breach of the building security because the entrances were secure at the time of the fire, the envelop of the building had not been breached, and the motion sensors had not operated until after the fire department was responding. (*Id.* at 1, 4). As with the other opinions, there may be testimony or other evidence that could weaken Beyler's opinion, but that evidence goes to the weight of Beyler's opinion, and not its admissibility. See *Travelers Casualty Ins. Co.*, 2012 U.S. Dist. LEXIS 117789, at *13 (noting that contrary evidence or the failure to account for certain pieces of evidence goes to weight, and not admissibility).

Beyler's opinion primarily focused on rebutting the opinions of O.W. Taylor's expert by evaluating the facts in light of scientific principles. (Doc. 37-8). He specifically

observed that the surface of the third floor was splintered and rotted wood. (Doc. 37-8, p. 4). He noted that an undamaged wood floor would not be subject to ignition by a discarded cigarette, but that the wood dust and crevices present at the building at issue provided an environment in which ignition was possible by a discarded cigarette. (*Id.*) He indicated that experimental and fire science literature recognized that those conditions are conducive to a slow smoldering fire caused by cigarettes, and he cited to various fire science literature on which he relied. (*Id.* at 2-4). Considering those factors, he found that the incubation time present in the case would be consistent with a cigarette smoldering for several hours before becoming an open flame. (*Id.*) As stated above, physical testing is not required. Beyler's use of cognitive testing is therefore sufficient in this case.

Moreover, like the opinions of Wolf and Autio, Beyler's opinion does not suffer from the same flaws present in the expert opinion in *Michigan Millers Mutual Insurance Corporation*, 140 F.3d at 919-21. Specifically, Beyler did not opine that the fire was intentionally set after eliminating all accidental causes. Instead, he considered that other potential accidental and incendiary causes had been eliminated in arriving at the causation hypothesis based on the discarded cigarette. He then concluded that the causation hypothesis was consistent with the knowledge of fire science.

Based on the above analysis, the Court holds that Beyler's opinion is based on a reliable methodology that is applied reliably to the facts in this matter. His opinion therefore will not be excluded.

IV. CONCLUSION

For the foregoing reasons, O.W. Taylor's Motion in Limine to Exclude Opinions of Plaintiff's Experts, and of Daniel Wolf (Doc. 34) is **DENIED**.

IT IS SO ORDERED.

s/ Michael R. Barrett
Michael R. Barrett, Judge
United States District Court

**UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF OHIO
WESTERN DIVISION AT CINCINNATI**

ZURICH AMERICAN INSURANCE CO., :
etc. :

Plaintiff, :

v. :

THE O.W. TAYLOR, LLC :

Defendant, :

CASE NO. 1:11cv00108

(Judge Michael R. Barrett)

**DEFENDANT, THE O.W. TAYLOR, LLC'S, MOTION IN LIMINE TO EXCLUDE
OPINIONS OF PLAINTIFF'S EXPERTS, AND OF DANIEL WOLF**

I. INTRODUCTION

This lawsuit involves Plaintiff's claim for damages paid to its insured resulting from a fire. Defendant, The O.W. Taylor Co., LLC ("Taylor"), by and through counsel, moves the Court in limine to preclude Plaintiff's experts, and Daniel Wolf, from rendering opinion testimony about the cause of the fire. The causation opinions rendered by these witnesses are unreliable and inadmissible, since they are not supported by the proper factual foundation. As such, the Court should preclude the witnesses from rendering the opinions at trial.

II. BACKGROUND & RELEVANT FACTS

Plaintiff, Zurich American Insurance Co. ("Zurich"), is the subrogee of Orton Development, Inc. ("Orton") and Nineteen Ten Elm Street ("Nineteen Ten"). Orton and/or Nineteen Ten own the building located at 1910 Elm Street in Cincinnati, Ohio.¹ Orton

¹ Doc. 1, ¶5.

contracted with Taylor to perform construction services in the building.²

This action involves a fire which occurred in the building on January 8, 2010.³ Zurich paid damages to (or on behalf of) Orton/Nineteen Ten as a result of the fire. Zurich now seeks to recover those damages from Taylor.⁴

Zurich claims the fire was started by employees of Taylor.⁵ Zurich specifically alleges that at least one Taylor employee was a known smoker, and that the subject fire was caused "either by careless smoking and/or the careless disposal of smoking materials."⁶ Taylor has denied, and continues to deny, its employees were responsible for starting the fire.

Zurich hired experts – Craig L. Beyler ("Beyler") and Kerry Autio ("Autio"), to examine the evidence in the case, and render opinions about the cause of the fire. Beyler and Autio both issued reports. The fire was also investigated by the Cincinnati Fire Department ("CFD"). Daniel Wolf was part of the CFD's investigation. Beyler, Autio, and Wolf have all been deposed, and the transcripts of their depositions are being submitted in support of this motion.

Beyler, Autio, and Wolf all opine that the cause of the subject fire was caused by a cigarette discarded by Defendant's employee, William Terrell. However, the factual record is devoid of the evidence necessary to establish the facts necessary to support those opinions.⁷

After extensive investigation and discovery, the only evidence is that a single,

² Doc. 1, ¶8.

³ Doc. 1., ¶9.

⁴ Doc. 1.

⁵ Doc. 1., ¶¶10-12.

⁶ Doc. 1, ¶¶11-12.

⁷ Plaintiff's experts and Wolf all assume that the floor where the fire occurred was in a deteriorated condition with crevices; Defendant submits this assumption is not true. However, the floor must have been in this condition to support Plaintiff's experts' and Wolf's theory.

specific Taylor employee – William Terrell – was a smoker, and was in the room in the building where the fire occurred on the date of the fire. That is all. There is no evidence Mr. Terrell smoked in the building where the fire started on the date in question. There is no evidence he smoked in the room on the third floor where the fire started. Mr. Terrell's testimony is that he does not recall smoking in this room on the day in question, but that he does not think he did.⁸ And even on the occasions that he did smoke, he testified it was his regular habit and practice to put cigarette butts in the pocket on his tool belt after he had put them out.⁹

His fellow employee, Timothy Nalley, was the only other Taylor employee present in that room at that time. His testimony is very specific: he and Terrell were only there for about thirty minutes;¹⁰ they were doing work which required Terrell to use both hands;¹¹ and he is positively certain that Terrell never smoked during that brief period.¹² His account is wholly consistent with his recollection just after the fire, when he gave a recorded statement to an investigator from the Cincinnati Fire Department.¹³ After he first assured the investigator that Terrell had not been smoking, repeated and persistent efforts were made to get him to back away from that assertion,¹⁴ but each such attempt was rebuffed.¹⁵ And further, Nalley confirmed it was Terrell's practice and habit, on the occasions that he did smoke, to put the butts of the cigarettes he had smoked in his pocket when he was finished with them.¹⁶

⁸ Terrell Depo., 66, 70, 71.

⁹ Terrell Depo., 85.

¹⁰ Nalley Depo., 15.

¹¹ Nalley Depo., 14.

¹² Nalley Depo., 16, 83.

¹³ Nalley Depo., Exhibit "5."

¹⁴ Id.

¹⁵ Id.

¹⁶ Nalley Depo., 16.

There is simply no evidence that Terrell discarded a lit cigarette on the floor in the room where the fire occurred on the date in question. In fact, there is no evidence that Terrell ever discarded a cigarette onto a floor – anywhere. And yet, both of Plaintiff's designated experts, and Wolf, conclude (more accurately, assume) that he did just that. Their (unsupported) conclusion that Terrell committed the act of discarding a cigarette on the floor in the room where the fire started is absolutely essential to their opinions.

Beyler, Autio, and Wolf acknowledge the lack of factual support for their opinions. Autio recognized that Mr. Terrell's co-worker – Tim Nalley – did not see Mr. Terrell smoke in the room where the fire started on the date in question.¹⁷ Similarly, Autio acknowledges Mr. Terrell himself stated he could not remember if he had smoked in the room or not that day.¹⁸

Wolf acknowledges there is no physical evidence of any cigarette smoking in the area of the fire.¹⁹ He acknowledges that Nalley stated that Terrell was not smoking in the room that day.²⁰ And he acknowledges that no one ever told him that Terrell was smoking a cigarette in that room that day.²¹

For his part, Beyler likewise acknowledges there is "no direct testimony...that someone saw [Mr. Terrell] smoking."²² So all of Plaintiff's designated experts concede there is no evidence to establish Mr. Terrell was smoking a cigarette in the room of the building where the fire started, on the date the fire occurred.

The basis for Beyler's, Autio's, and Wolf's opinion is a house of cards, upon which they build inference upon inference upon inference, until they eventually come around to the conclusion that the fire was started by a cigarette discarded by Mr. Terrell. The inferences

¹⁷ Autio Depo., 49.

¹⁸ Autio Depo., 50.

¹⁹ Wolf Depo., 122.

²⁰ Wolf Depo., 135.

²¹ Wolf Depo., 143.

drawn by both experts include the following:

- (1) Mr. Terrell was smoking in the building on the date of the fire;
- (2) Mr. Terrell was smoking in the room of the building where the fire started on the date of the fire;
- (3) No one else was smoking in the room where the fire started on the date of the fire;
- (4) Mr. Terrell was the only one smoking in that room on the date of the fire;
- (5) Mr. Terrell discarded a cigarette on the floor where the fire started on the date of the fire;
- (6) The discarded cigarette was still lit; and
- (7) There were places on the floor which were deteriorated and which allowed the fire to smolder and eventually ignite a larger-scale fire.
- (8) The discarded and unlit cigarette happened to land at one of those places.

None of these inferences is supported by the evidence. In fact, Beyler had to admit at his deposition that his opinion concerning Mr. Terrell starting the fire is based on nothing more than a series of inferences, each necessarily dependent on a previous inference. His testimony is as follows:

Q. But you're inferring on the basis of other information that Terrell was smoking on that third floor on the day in question, correct?

A. In order to get it to a hypothesis, you simply have to get to a place where it's possible that he did, that it's consistent with all the case facts that he did.

Q. I'm just saying you're inferring – to reach your conclusions, you're inferring that Terrell did smoke in that room on the day of the fire, correct?

A. The cause hypothesis involves discarded smoking materials, and he is the sole person who's a candidate for that.

²² Beyler Depo., 127.

Q. Okay. And you're also inferring that it wasn't anyone else smoking in that room on the day of the fire, correct?

A. I looked at the data that's before us, and we have two people in the area of origin, one of whom does not smoke at all and the other one who does. That's the information we have.

Q. Okay. Some of these you can do yes or no if you'd like, but you're inferring that Terrell was the only person who smoked in that room on the day of the fire, correct?

A. We don't have any data that suggests another smoker.

Q. All right. You also are making an additional inference that Terrell discarded a lit cigarette onto the floor, correct?

A. That's the cause hypothesis, yes.

Q. And you're also making another inference that Terrell discarded his cigarette on the floor without extinguishing it first, correct?

A. If it's extinguished, it doesn't start a fire.

Q. Is the answer to my question yes?

A. Right. If it's extinguished, it doesn't start fires.

Q. Okay. And the discarded cigarette, the discarded lit cigarette, logically that could have landed in a place where there was dust and crevices on the floor, or that could have landed on a place where there was no dust or crevices or splinters, true?

A. Both are possible.

Q. Okay. If there was little or no dust or splinters on the floor where a discarded lit cigarette landed, it is unlikely that a fire would have resulted, correct?

A. I think I've sort of already answered that question in that crevices can allow a fire to start, decomposed material can cause a fire to start. Them together certainly can cause a fire to start.

Q. Well, here's my question. I'm not asking about possibilities. I'm saying, if there was very little dust or no dust and no splinters on the floor where a discarded lit cigarette landed, it is unlikely that a fire would have resulted, true?

MR. MULLEN: Objection. Answer if you can.

A. Starting a fire by a discarded cigarette is unlikely in general. They do happen, however.²³

Simply put, Beyler and Autio both acknowledge there is no direct evidence Mr. Terrell discarded a lit cigarette on the floor of the building where the fire started. And yet, they both opine Mr. Terrell started the fire. Wolf makes similar conclusions despite the lack of supporting evidence.

The inference-upon-an-inference process of extrapolation indulged in by Plaintiff's experts is further undermined by the fact that the workforce on site at 1910 Elm Street on the day of the fire included employees of K&W Electric, who were known to be smokers as well.²⁴ Furthermore, the activity being carried out by Terrell and Nalley during their brief time in the room on the third floor was to remove and stack fluorescent light fixtures, something which would require follow-up by K&W Electric.²⁵

III. LEGAL ARGUMENT

Beyler, Autio, and Wolf should be precluded from rendering their opinions because Plaintiff has failed to establish any of the specific items of evidence necessary to support their conclusions. The opinions rendered by Beyler, Autio, and Wolf are based on the absence of evidence – not the presence of facts to support their conclusions. This methodology – referred to in the fire investigation industry as “negative corpus” – amounts to nothing more than unsupported speculation. Since their opinions lack the proper

²³ Beyler Depo., 127-130, emphasis added.

²⁴ Nalley Depo., 44-46; Wolf Depo., 149-150.

²⁵ Nalley Depo., 11, 77.

foundation, they are unreliable and inadmissible, and should be excluded.

A. Legal Standard.

The starting point for an analysis of the admissibility of proffered expert testimony is Rule 702, which provides:

"If scientific, technical or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue a witness qualified as an expert by knowledge, skill, experience, training or education may testify thereto in the form of an opinion or otherwise."²⁶

Rule 702 provides the framework for the issues, guides the Court's inquiry into the expert's qualifications and methodology, and reminds the Court the opinion must fit the case. In *Daubert v. Merrell-Dow*,²⁷ the United States Supreme Court rejected the longstanding "general acceptance in the scientific community standard" as set forth in *Frye*.²⁸ The *Daubert* court discerned three requisites to the admissibility of expert testimony. First, the expert must be qualified; second, the testimony must assist the trier of fact; third, the expert must testify only as to scientific, technical or other specialized knowledge.²⁹ The Court concluded:

"The inquiry envisioned by Rule 702 is, we emphasize, a flexible one. Its over-arching subject is the scientific validity – and thus the evidentiary relevance and reliability – of the principles that underline a proposed submission."³⁰

The court's role under *Daubert* is to insure that any and all scientific testimony or evidence admitted is not only relevant, but reliable.³¹

²⁶ Fed. R. Evid. 702

²⁷ 509 U.S. at 586, 113 S. Ct.

²⁸ *Frye v. United States*, 293 F. 1013 (D.C. Cir. 1923)

²⁹ *Daubert*, 509 U.S. at 590, 113 S. Ct. at 2795

³⁰ *Daubert*, 509 U.S. 594-95, 113 S. Ct. at 2797

³¹ *Daubert*, 509 U.S. at 589, 113 S. Ct. at 2795

The *Daubert* factors to determine the admissibility of scientific expert opinion include: (1) whether the technique or theory can be and has been tested; (2) whether the technique or theory has been subjected to peer review and publication; (3) the techniques known or potential rate of error and the existence and maintenance of standards controlling the technique's operation; and (4) whether the technique or theory has been generally accepted in the particular scientific community.³²

B. The Opinions of Beyler, Autio, and Wolf Are Unsupported Speculation.

The Court should exclude Beyler, Autio, and Wolf from rendering their opinions for the basic reason that their opinions are unsupported by the facts of record. Accordingly, their opinions are irrelevant, unreliable, and admissible.

FRE 401 states:

"'Relevant evidence' means evidence having any tendency to make the existence of any fact that is of consequence to the determination of the action more probable or less probable than it would be without the evidence."

However, Rule 403 states:

"Although relevant evidence may be excluded if its probative value is substantially outweighed by the danger of unfair prejudice, confusion of the issues, or misleading the jury, or by considerations of undue delay, waste of time, or needless presentation of cumulative evidence. Therefore, 'relevant evidence' is admissible, it is subject to the 'balancing tests' set forth in FRE 403."

When considering the admissibility of expert testimony, a court "must ensure that in each step, from initial premise to ultimate conclusion, the expert faithfully followed valid scientific methodology."³³ That requirement "extends to each step in an expert's analysis

³² *Daubert*, 509 U.S. at 593-94, 113 S. Ct. at 2796-97

³³ *Hall v. Baxter Healthcare*, 947 F. Supp. 1387, 1401 (D. Or. 1996) (emphasis added); see also, e.g. *Savage v. Union Pac. R. Co.*, 67 F. Supp. 2d 1021, 1027 (E.D. Ark. 1999) ("Each step of the experts' methodology must be scientifically valid.")

all the way through the step that connects the work of the expert to the particular case.”³⁴ Accordingly, even if the theory that would connect the conclusion to an assumed fact is correct, a conclusion that rests on an assumption without empirical foundation is inadmissible under Daubert because it “constitutes ‘unsupported speculation.’”³⁵

As one court has observed, “[e]ven if the concept is relevant, it does not necessarily follow that [the expert’s] application of the concept to the facts of the case is a proper ‘fit,’” because “[n]othing in either Daubert or the Federal Rules of Evidence requires a district court to admit opinion evidence that is connected to existing data only by the ipse dixit of the expert.”³⁶

The opinions of Beyler, Autio, and Wolf are based on nothing more than a series of inferences unsupported in the factual record. The seminal Ohio case on this issue is *Sobolovitz v. The Lubric Oil Co.*,³⁷ in which the Supreme Court held “an inference of fact cannot be predicated upon another inference, but must be predicated upon a fact supported by evidence.” The *Sobolovitz* case has been commented upon and qualified since it was first decided, but the underlying principle of substantive Ohio law remains: inferences based on other inferences are unreliable, and in order to be admissible and considered by a jury, inferences must be buttressed by additional facts.³⁸

Although an expert witness is permitted wide latitude to offer opinions, including those not based on firsthand observation or knowledge, the opinions must have a reliable

³⁴ *In re. Paoli R.R. Yard PCB Litig.*, 35 F.3d 717, 743 (3d Cir. 1994) (emphasis added)

³⁵ *Hall*, 947 F.Supp. at 1401, emphasis added.

³⁶ *Chan v. Coggins*, 294 Fed. App’x. 934, 938-39 (5th Cir. 2008) (quoting *Kumho Tire Co., Ltd. v. Carmichael*, 526 U.S. 137, 157 (1999))

³⁷ 107 Ohio St. 204 (1923) (second paragraph of the syllabus)

³⁸ See, e.g., *Nave v. Kemmann*, 3rd Dist. No. 2-78-4, 1979 WL 207901 (1979).

basis. The witness' self-proclaimed expertise is insufficient to satisfy Rule 702.³⁹ Under Rule 702, admissible expert testimony must be based on actual knowledge and not "subjective belief or unsupported speculation."⁴⁰ Simply put, the opinions of Beyler, Autio, and Wolf lack a reliable factual foundation – there is simply no evidence that any Taylor employee was smoking in the area where the fire started, or that any Taylor employee discarded a lit cigarette sufficient to start the fire. Having no proper factual predicate, the opinions are, simply, unreliable.

In order to be admissible and reliable, an expert's opinion must also rest on a valid and reliable foundation.⁴¹ Indeed, "[to] have probative value, the expert opinion must be "founded upon substantial data, not mere conjecture, speculation or unwarranted assumption. It must have a rational foundation."⁴² A trial judge must focus on the reasoning and methodology of an expert in arriving at the conclusion . . . Thus, an expert's scientific opinion must rest on a "reliable foundation."⁴³

In this action, Beyler, Autio, and Wolf rely on a rickety series of inferences built upon other inferences about Mr. Terrell, none of which is buttressed by any additional facts. The inferences Beyler and Autio make about Mr. Terrell include: (1) he was smoking; (2) in the building; (3) on the third floor; (4) then discarded a cigarette; (5) the cigarette he discarded was still lit, and happened to land at a place on the floor where certain specific conditions existed; and (6) the floor allowed the cigarette to smolder. There is a total absence of

³⁹ *C. F. Fraley v. Stoddard*, 73 F. Supp. 2d 642, 646-47 (S.D. W.Va. 1991) (rejecting expert medical opinions in the absence of any scientific evidence validating the expert's opinions as to causation or any evidence that the witness' opinions were generally supported by scientific literature.)

⁴⁰ *Mitchell v. Jencorp, Inc.*, 165 F.3d 778, 780 (10th Cir. 1999); *Wilson v. Petroleum Wholesale, Inc.*, 904 F. Supp. 1188, 1190 (D. Colo. 1995); *Lavotto v. Burlington Northern & Santa Fe Ry.*, 2002 U.S. Dist. LEXIS 16844 (D. Colo. 2002)

⁴¹ See, Fed. R. Evid. 702 (expert's opinion must be "based upon sufficient facts and data" to establish a firm foundation for the proffered opinion.)

⁴² *6816.5 Acres of Land v. United States*, 411 F.2d 834, 838 (10th Cir. 1969) quoting *United States v. Sowards*, 370 F.2d 87, 92 (10th Cir. 1996) (emphasis added).

evidence in the record to support any of these inferences, and yet they form the entire basis for the hyper-strained causation opinions that Beyler, Autio, and Wolf intend to render.

The conclusions reached by Beyler, Autio, and Wolf rest on not just one assumed fact, but instead, several (at least six – and counting) assumed facts that lack any foundation in the record. Their opinions are necessarily based on the above series of impermissible inferences. As a result, their opinions are nothing more than “unsupported speculation,”⁴⁴ and are inadmissible.

C. The Methodology Utilized By Beyler, Autio, and Wolf – “Negative Corpus” – Is Rejected In The Fire Investigation Community.

Beyler, Autio, and Wolf all opine that the subject fire was caused by “discarded smoking materials” based on their claimed elimination of all other sources of ignition for the fire. This methodology employed by all three witnesses (though all deny doing so) is known as “negative corpus” and is rejected in the fire investigation community.

The process of determining the ignition source for a fire, by eliminating all ignition sources found, known, or believed to have been present in the area of origin, and then claiming such methodology is proof of an ignition source for which there is no evidence of its existence, is referred to as “negative corpus.” Negative corpus has typically been used in classifying fires as incendiary, although the process has also been used to characterize fires classified as accidental.⁴⁵

⁴³ *Black v. M&W Gear Co.*, 269 F.3d 1220, 1236 (10th Cir. 2001).

⁴⁴ *Hall*, 947 F.Supp. at 1401, emphasis added.

⁴⁵ NFPA 921 (2011); see also 5 DAVID L. FAIGMAN ET AL., MODERN SCIENTIFIC EVIDENCE: THE LAW AND SCIENCE OF EXPERT TESTIMONY § 39:65, at 291 (2011–2012 ed.) (quoting TECHNICAL COMMITTEE ON FIRE INVESTIGATIONS, NATIONAL FIRE PROTECTION ASSOCIATION, NFPA 921: GUIDE FOR FIRE AND EXPLOSION INVESTIGATIONS § 18.6.5 (2011 ed.)), as cited in *Control Solutions, Inc. v. Gharda USA, Inc.*, — S.W.3d —, 2012 WL 3525372 (Tex. App.-Hous. (1 Dist.)); see also *Somnis v. Country Mut. Ins. Co.*, 840 F.Supp.2d 1166, 1172–73 (D.Minn.2012) (allowing fire investigator to testify about the absence of accidental causes, but excluding opinion testimony that “the absence of an accidental explanation suggests the fire was incendiary”).

"The National Fire Protection Association ("NFPA") is an international nonprofit that now, among other things, promotes codes and standards 'intended to minimize the possibility and effects of fire and other risks.'⁴⁶ In 1992, the Technical Committee on Fire Investigations issued NFPA 921, a "Guide for Fire and Explosion Investigations" ("NFPA 921"), and discussed the methodology for determining a cause of fire. NFPA 21 was revised in 2011, and explicitly rejects the use of negative corpus to classify the cause of a fire, stating as follows: "This process is not consistent with the Scientific Method, is inappropriate, and should not be used because it generates un-testable hypotheses, and may result in incorrect determinations of the ignition source and first fuel ignited. Any hypothesis formulated for the causal factors (e.g., first fuel, ignition source, and ignition sequence), must be based on facts. Those facts are derived from evidence, observations, calculations, experiments, and the laws of science. Speculative information cannot be included in the analysis."⁴⁷

Beyler, Autio, and Wolf all employed the negative corpus methodology to reach their conclusions in this action (though all three deny it). They claim to have eliminated other sources of ignition for the fire (in the process, ignoring the possible presence of K&W smokers). Then they conclude that, based on the single fact that Mr. Terrell is a smoker, he started the fire when he discarded a cigarette. There is no evidence to support that conclusion, and there is no evidence to support the quite lengthy laundry list of inferences upon which that conclusion is based. So for the additional reason that the methodology

⁴⁶ *Schlesinger v. United States of America*, --- F.Supp.2d ---, 2012 WL 407098 (E.D.N.Y.), citing National Fire Protection Association, Codes & Standards, <http://www.nfpa.org> (last visit February 2, 2012).

⁴⁷ NFPA 921 (2011); see also 5 DAVID L. FAIGMAN ET AL., MODERN SCIENTIFIC EVIDENCE: THE LAW AND SCIENCE OF EXPERT TESTIMONY § 39:65, at 291 (2011–2012 ed.) (quoting TECHNICAL COMMITTEE ON FIRE INVESTIGATIONS, NATIONAL FIRE PROTECTION ASSOCIATION, NFPA 921: GUIDE FOR FIRE AND EXPLOSION INVESTIGATIONS § 18.6.5 (2011 ed.)), as cited in *Control Solutions, Inc.*, *supra*, emphasis added.

utilized by Beyler, Autio, and Wolf in this action is rejected by the fire investigation community, their opinions should be excluded.

IV. CONCLUSION

For the reasons set forth throughout this motion, Taylor asks the Court to issue an order, in limine, precluding Beyler, Autio, and Wolf from rendering their opinions at the trial of this action.

Respectfully submitted,

/s/ Barry F. Fagel

Barry F. Fagel (#0060122)
David E. Williamson (#0071270)
Lindhorst & Dreidame Co., LPA
312 Walnut Street, Ste. 3100
Cincinnati, OH 45202
(513) 421-6630
(513) 421-0212 (FAX)
bfagel@lindhorstlaw.com
**Attorney for Defendant,
O.W. Taylor, LLC**

CERTIFICATE OF SERVICE

I hereby certify that on December 21, 2012 I served a copy of the foregoing via electronic mail and ordinary United States mail to the following:

Bradley Lewis Snyder, Esq.
155 East Broad Street
PNC Plaza, Twelfth Floor
Columbus, OH 43215
Attorney for Plaintiff

Mark Mullen, Esq.
Cozen O'Connor
1900 Market Street
Philadelphia, PA 19103

/s/ Barry F. Fagel

Barry F. Fagel