

UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF OHIO

TREVOR CAWLEY,	:	
	:	
Plaintiff,	:	CASE NO. 1:14-CV-00310
	:	
vs.	:	OPINION & ORDER
	:	[Resolving Docs. 44 , 47 , 48 , 49 , 51]
EASTMAN OUTDOORS, INC.,	:	
ET AL.,	:	
	:	
Defendants.	:	
	:	

JAMES S. GWIN, UNITED STATES DISTRICT JUDGE:

This is an action about Plaintiff Trevor Cawley’s injury from an allegedly defective arrow distributed by Defendant Eastman Outdoors, Inc. Defendant has moved to exclude Plaintiff’s expert, Dr. Scott Beckwith. Cawley offers Beckwith as an expert in the engineering and manufacturing of products made of composite materials like those used in the arrow that injured Plaintiff.^{1/} Plaintiff opposes Defendant’s motion to exclude Dr. Beckwith’s testimony.^{2/} On January 7, 2015, the Court held a hearing on this motion at which Dr. Beckwith testified.^{3/} For the reasons set forth below, the Court **GRANTS IN PART** and **DENIES IN PART** Defendant’s motion.

Defendant has also made several related motions *in limine*, which the Court will consider at the same time:

- Defendant has moved to exclude Dr. Beckwith’s testimony and opinions regarding his tests of an “exemplar” arrow.^{4/} The Court **DENIES** this motion.

^{1/}Doc. [44](#).
^{2/}Doc. [55](#).
^{3/}Throughout this opinion, citations to the draft transcript of Dr. Beckwith’s testimony at this hearing are abbreviated as “Tr. at ____.”
^{4/}Doc. [47](#). Plaintiff opposes this motion. Doc. [58](#).

- Defendant has moved to exclude evidence regarding the quality control processes undertaken either by Defendant or by the Shin Kwang Corporation, the Korean manufacturer of the arrow.^{5/} The Court **GRANTS IN PART** and **DENIES IN PART** this motion.
- Defendant has moved to exclude any evidence of composite materials manufacturing standards that are not specific to the manufacturing of arrows.^{6/} The Court **GRANTS IN PART** and **DENIES IN PART** this motion.
- Defendant has moved to preclude Plaintiff from arguing that Defendant is the manufacturer of the product, rather than the supplier.^{7/} The Court **GRANTS** this motion.

I. Background

The Court has previously issued an opinion detailing the factual background of this case and incorporates that background by reference.^{8/} In short, on October 8, 2012, Plaintiff Trevor Cawley was injured while practicing archery. An arrow distributed by Defendant Eastman Outdoors, Inc., shattered as it was being shot and pierced Plaintiff's left hand. Plaintiff claims the arrow shattered because it had a manufacturing defect.

In support of his claim, Plaintiff seeks to offer the testimony of a composite materials expert, Dr. Scott Beckwith. Dr. Beckwith has disclosed two reports. One report discusses the arrow that shattered and injured Plaintiff.^{9/} The other report discusses another arrow from the same batch that

^{5/}Doc. [48](#). Plaintiff opposes this motion. Doc. [59](#).

^{6/}Doc. [49](#). Plaintiff opposes this motion. Doc. [60](#).

^{7/}Doc. [51](#). Plaintiff opposes this motion. Doc. [62](#).

^{8/}Doc. [42](#).

^{9/}Doc. [44-5](#).

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Plaintiff had bought around the same time.^{10/} Dr. Beckwith's primary method of looking for flaws in the arrows involved cutting cross-sections of the shafts and microscopically examining them. As described in greater detail below, Dr. Beckwith's reports conclude the arrows contain voids that compromised their structural integrity and caused the break that injured Plaintiff. Dr. Beckwith offers the opinion that these voids are the result of a manufacturing defect.

II. Defendant's *Daubert* Motion

A. Legal Standard

Federal Rule of Evidence 702 controls the admission of expert testimony. Under Rule 702, testimony based on specialized knowledge is admissible if it "will help the trier of fact to understand the evidence or to determine a fact in issue."^{11/} Expert testimony must be both relevant and reliable.^{12/}

To testify as an expert, the witness must be qualified "by knowledge, skill, experience, training, or education."^{13/} The expert's testimony must also be "based on sufficient facts or data," be "the product of reliable principles and methods," and be the product of reliable application of those principles and methods to the facts of the case.^{14/} "[T]he law grants a district court the same broad latitude when [the district court] decides *how* to determine reliability as it enjoys in respect to its ultimate reliability determination."^{15/}

As commentators have noted, Rule 702 liberalized the admissibility of expert testimony from

^{10/}Doc. 44-3.

^{11/}[Fed. R. Evid. 702\(a\)](#).

^{12/}[Kumho Tire Co. v. Carmichael, 526 U.S. 137, 147 \(1999\)](#).

^{13/}[Fed. R. Evid. 702](#).

^{14/}[Fed. R. Evid. 702\(b\)-\(d\)](#).

^{15/}[Kumho Tire Co., 526 U.S. at 142](#).

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the earlier *Frye* standard.^{16/} Under this liberal approach, expert testimony is presumptively admissible.^{17/}

Further, experts need not confine their testimony to matters upon which they have personal knowledge.^{18/} Experts may base their opinions on facts and data that “experts in the particular field would reasonably rely on . . . in forming an opinion on the subject.”^{19/} The underlying facts and data need not be admissible themselves if experts in the field would reasonably rely on them.^{20/}

The Court’s inquiry focuses “on the principles and methodology, not the conclusions they generate.”^{21/} In making the determination of whether the expert’s methodology is reliable, the Court may look to “the testability of the expert’s hypotheses, whether the expert’s methodology has been subjected to peer review and publication, the known or potential rate of error with respect to the expert’s methodology, and whether the methodology is generally accepted in the scientific community.”^{22/}

B. Dr. Beckwith’s Reports

Dr. Scott Beckwith is the President of BTG Composites, Inc., a company that offers consulting services for the composites manufacturing industry.^{23/} He earned an M.S. in Aeronautics from the California Institute of Technology and a Ph.D. in Material/Interdisciplinary Engineering

^{16/}See, e.g., [Weinstein’s Federal Evidence § 702.02\[1\]](#).

^{17/}*Id.*

^{18/}[Daubert v. Merrell Dow Pharm., Inc., 509 U.S. 579, 592 \(1993\)](#).

^{19/}[Fed. R. Evid. 703](#).

^{20/}*Id.*

^{21/}*Daubert*, 509 U.S. at 594–95.

^{22/}[Rose v. Truck Ctrs., Inc., 388 F. App’x 528, 535 \(6th Cir. 2010\)](#) (citing *Daubert*, 509 U.S. at 593–94).

^{23/}See Doc. [55-2](#).

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from Texas A&M University.^{24/} He has several decades of experience in the design, analysis, testing, and manufacturing of items using composite materials, including having done numerous “composite failure” investigations.^{25/} He is the Global Technical Director for the Society for the Advancement of Material and Process Engineering, a leading international professional society for the promotion of new materials and processing technology.^{26/} He has received four presidential appointments for composite materials technological panels.^{27/}

1. First Report

Dr. Beckwith’s first report described testing of an “exemplar” arrow.^{28/} Plaintiff had purchased about a dozen Wolverine 6070 carbon fiber arrows in 2010, all of which were made by the Shin Kwang Corporation in South Korea as part of batch number 040708.^{29/} At the time of his injury, Plaintiff still had about six of these arrows. One of them shattered and injured him. For his first test, Dr. Beckwith examined one of Plaintiff’s remaining intact arrows.

Dr. Beckwith cut four cross-sections at various parts of the arrow in order to “examine the composite structure under a microscope.”^{30/} The sections were mounted in an epoxy resin system and polished by a lab at Brigham Young University.^{31/} From the cross-section, Dr. Beckwith determined that the arrow has a laminated (i.e., layered) construction.^{32/} The two outer layers of the arrow are a “0-deg prepeg carbon/epoxy” layer, meaning that the carbon fibers were oriented

^{24/}*Id.*

^{25/}*See id.*; Doc. [55-1](#).

^{26/}Doc. [55-2](#).

^{27/}*Id.*

^{28/}Doc. [44-3](#).

^{29/}Doc. [42](#) at 3.

^{30/}Doc. [44-3](#) at 3.

^{31/}*Id.* at 4.

^{32/}*Id.*

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lengthwise down the shaft of the arrow and suspended in a partially cured epoxy resin.^{33/} The three inner layers of the arrow are made of the same “0-deg prepeg epoxy” material, but were cross-stitched together rather than being oriented lengthwise and all parallel.^{34/}

Dr. Beckwith took photographs of these magnified cross-sections, and determined that many of the cross-sections exhibited voids (i.e., air bubbles) in the carbon fiber, primarily in the stitched inner layers. Dr. Beckwith attests that the standard for void content in the composites industry is to fabricate end products at, or below, one percent void content.^{35/} Although some of the cross-sections he examined were below this threshold, the majority of them exhibited void content well in excess of one percent, and some in excess of ten percent.^{36/} Based on his observations, Dr. Beckwith concluded that the void content exceeded composite industry standards “in almost every case, and, by very high amounts.”^{37/}

Dr. Beckwith also determined that the orientation of the carbon fibers in the outer layers—which are supposed to run parallel down the length of the shaft—varied from parallel by up to ten degrees, which could “lead to some amount of degradation in overall strength.”^{38/} Dr. Beckwith noted, however, that these outer layers exhibited “minimal” void content.^{39/}

Finally, Dr. Beckwith also noted evidence of poor control in the manufacturing process. He observed that in some places, the stitched carbon fiber layers had become interspersed with the outer

^{33/}*Id.*

^{34/}*Id.* In his second report, Dr. Beckwith corrected this assessment in one respect. He initially suspected that the three inner layers were made of carbon fiber. On further examination, he determined that the three inner layers are actually fiberglass. See Tr. at 44:15–45:12.

^{35/}Doc. [44-3](#) at 4.

^{36/}*See id.* at 16.

^{37/}*Id.* at 17.

^{38/}*Id.* at 8.

^{39/}*Id.* at 7.

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parallel carbon fiber layers.^{40/} He also observed cracks and broken fibers in the outer layers that had been fully filled with resin, suggesting that the crack occurred during the manufacturing process.^{41/}

Overall, Dr. Becwktih concluded that “the manufacturing process . . . does not reflect good quality control”^{42/} He further offered the opinion that Plaintiff’s injury was likely due to a manufacturing defect in the arrow that shattered.^{43/}

2. Second Report

Several months after preparing his first report regarding the exemplar arrow, Dr. Beckwith had an opportunity to examine the arrow that actually shattered and injured Plaintiff. Dr. Beckwith apparently delayed testing the arrow involved with this case until a testing protocol could be established with the Defendant.

This second examination was conducted in conjunction with Defendant’s experts under an agreed joint test protocol.^{44/} As with the testing of the exemplar arrow, the shattered arrow was cut into cross-sections, mounted, and polished for microscopic evaluation, this time using a scanning electron microscope.^{45/} Dr. Beckwith revised and corrected his prior opinion as well, because he had learned that the three inner layers of the arrow are actually made of “glass fibers” rather than carbon fiber as he initially described.^{46/}

Once again, Dr. Beckwith observed numerous voids, both within the fiber layers and on the

^{40/}*Id.* at 10.

^{41/}*Id.* at 12–14.

^{42/}*Id.* at 17.

^{43/}*Id.*

^{44/}Doc. [44-1](#) at 3; Doc. [44-5](#) at 2.

^{45/}Doc. [44-5](#) at 11.

^{46/}*Compare id.* at 6–7, with Doc. [44-3](#) at 3. Dr. Beckwith admitted during the hearing to his initial mistake and clarified that he corrected it in his second report. *See* Tr. at 44:15–45:12.

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interior surface of the hollow arrow which he attributed to poor quality control in the manufacturing process.^{47/} Some of these voids were located at the point where the arrow shattered, which was at a point where compression stresses on the arrow would have been highest while it was being shot.^{48/}

In this report, Dr. Beckwith also looked at the interior circumference of the arrow, which exhibited “extensive pitting porosity due to manufacturing process problems.”^{49/} He suggested that the repeated, periodic nature of the pitting indicated excess moisture or “roll-wrapping” problems with the glass fiber material.^{50/}

Dr. Beckwith also examined the shattered arrow for user-inflicted cracks that could have caused the arrow to shatter. He observed what he describes as “surface anomalies”—markings on the surface of the arrow that he argues did not extend into the composite laminate of the arrow.^{51/} He also noted that he did not observe any “star-burst” patterns near these markings that would have indicated the arrow had suffered impact damage attributable to Plaintiff’s use that could have caused it to shatter.^{52/} Nor did Dr. Beckwith observe any microcracking in the composite laminate of the arrow that would have made it unsafe for use.^{53/}

From his observations, Dr. Beckwith again concluded that the shattering of the arrow was due to a manufacturing defect “which led to high levels of void content, which impairs the product’s strength for its intended use”^{54/}

^{47/}See Doc. [44-5](#) at 12–14, 17–23.

^{48/}*Id.* at 12–13.

^{49/}*Id.* at 16.

^{50/}*Id.* at 17.

^{51/}*Id.* at 24–26.

^{52/}*Id.* at 26.

^{53/}*Id.* at 23.

^{54/}*Id.* at 27.

Finally, Dr. Beckwith also discussed the impact of the injury on Plaintiff Cawley. Dr. Beckwith described the stiffness of carbon fibers and the way they shatter.^{55/} He described how some of the fibers from the arrow will be “permanently imbedded” in his body.^{56/} He concluded by describing safety precautions taken by workers when handling carbon fiber to prevent this sort of injury.^{57/}

C. Analysis

Defendant makes four objections to Dr. Beckwith testifying as an expert. First, Defendant says Dr. Beckwith, despite his experience in composite materials manufacturing, lacks expertise in the archery industry.^{58/} Second, Defendant says Dr. Beckwith used unreliable methodology to reach his conclusions.^{59/} Third, Defendant says some of Dr. Beckwith’s opinions are mere speculations.^{60/} Fourth, Defendant says Dr. Beckwith’s opinions regarding Plaintiff’s medical issues and the adequacy of the warning on the arrow are outside his expertise.^{61/}

1. Qualifications

To be treated as an expert, a witness must establish that he “is qualified as an expert by knowledge, skill, experience, training, or education.”^{62/} “[T]his requirement has always been treated liberally”^{63/}

^{55/}*Id.* at 28.

^{56/}*Id.*

^{57/}*Id.*

^{58/}Doc. [44-1](#) at 7–10.

^{59/}*Id.* at 10–14.

^{60/}*Id.* at 14–15.

^{61/}*Id.* at 15.

^{62/}[Fed. R. Evid. 702.](#)

^{63/}[Pride v. BIC Corp.](#), 218 F.3d 566, 577 (6th Cir. 2000) (citing [In re Paoli RR Yard PCB Litig.](#), 916 F.2d 829, 855 (3d Cir. 1990)).

Dr. Beckwith's qualifications are impressive. He has a Ph.D. in materials engineering, and has over four decades of experience in the composite materials engineering and manufacturing industry. He was a presidential appointee to the Department of Commerce's Materials Technical Advisory Committee. He is the Global Technical Director for the Society for the Advancement of Material and Process Engineering. He has published hundreds of papers and given hundreds of speeches relating to composite materials engineering and manufacturing. Of particular relevance to this case, he has been involved in failure investigations involving consumer products such as bicycles, golf club shafts, and ski poles, which are made using similar materials and processes as the arrow at issue in this case.

Defendant's objection that Dr. Beckwith lacks experience in manufacturing or testing arrows goes to the weight that should be given to his opinion, not its admissibility. True, Dr. Beckwith has limited experience with arrows or archery,^{64/} an issue Defendant can bring out on cross-examination. But Dr. Beckwith has experience analyzing similar products that are manufactured using similar processes. Defendant's contention that experience in the "arrow industry" should be the limit on expert testimony is far too narrow a view of the value of expert evidence.

2. Reliability

Defendant next says Dr. Beckwith should be excluded as an expert witness because his methods were unreliable. Defendant presents three arguments on this point. First, Defendant says Dr. Beckwith reached his conclusions before actually examining the shattered arrow. Second,

^{64/}For that matter, so do Defendant's experts. Neither of their CVs show any more apparent connection to the archery industry than what Dr. Beckwith has. Dr. Michelle Vogler is an engineer whose expertise appears to be in motor vehicle accident reconstruction and metallurgic "field applications." See Doc. [33-1](#) at 11. George Saunders is an engineer whose expertise appears to be in fire investigation and heavy equipment design. See Doc. [33-2](#) at 8. Despite their lack of experience in the archery industry, Defendant apparently has no problem with its own experts giving opinions about what caused the arrow in this case to shatter.

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Defendant says Dr. Beckwith only evaluated the void content for subsections of the arrow, rather than the arrow as a whole, and cherry-picked samples with high void content to rig his results. Third, Defendant says measuring void content is not a proper way to test the strength of this type of laminate in any case. Defendant's arguments all lose.

Dr. Beckwith's first report concluded that the exemplar arrow exhibited a void content in excess of one percent "in almost every case, and, by very high amounts," and from this reached the opinion that the arrow that injured Plaintiff shattered because of a manufacturing defect.^{65/} But his examination of the shattered arrow did not rely on the results he reached in creating his first report on the exemplar arrow.^{66/} Although he looked for similar flaws in the two arrows, Dr. Beckwith's second examination appears to have been completely separate from his first one.

Defendant also offers general objections to Dr. Beckwith's methodology in examining the arrows. Defendant argues that Dr. Beckwith cherry-picked cross-sections of the arrows that exhibited high amounts of void content and from there reached the inaccurate conclusion that the arrows had overall void content in excess of one percent.^{67/} Defendant further objects that Dr. Beckwith did not take enough photographs to have a representative sample of the void content of the arrow.^{68/}

This mischaracterizes what Dr. Beckwith did. His first report found "[e]xtremely high void contents in *numerous sections*" and that the exemplar arrow exceeded one percent void content in

^{65/}Doc. [44-3](#) at 17.

^{66/}Compare Doc. [44-1](#) at 12, with Doc. [44-5](#) at 11-27.

^{67/}See Doc. [44-1](#) at 12-14; Doc. [75](#) at 7-9.

^{68/}Doc. [44-1](#) at 13; Doc. [75](#) at 7-8.

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all but two out of the thirteen samples he measured.^{69/} True, he says that the exemplar arrow exhibited “[a]verage void volume content of 4.65 volume percent,” but in context it seems clear he meant this was the average over the samples, and was not necessarily meant to reflect the void volume for the whole arrow.^{70/} He performed similar calculations for the shattered arrow, and reached similar conclusions—that the void content in most samples exceeded one percent, and that the average over the samples exceeded four percent.^{71/}

Dr. Beckwith explained this methodology in his deposition and at the hearing. He disputes that it is even appropriate to calculate the void content for the entire arrow.^{72/} Instead, he says that for composite materials, it is proper to “do a point content within certain areas.”^{73/} This is because the stress from firing an arrow does not affect all parts of the arrow in the same way, and where the void content is found matters.^{74/}

Dr. Beckwith testified that this is a standard industry technique that he has used many times in previous cases analyzing similar products.^{75/} Defendant’s experts unsurprisingly disagree with Dr. Beckwith’s methods, but neither of their reports does so in specific or technical terms. Dr. Michelle Vogler repeats the generalized complaint that Dr. Beckwith evaluated the void content of the arrow only at specific locations, and that his stated industry standard of one percent void content

^{69/}Doc. [44-3](#) at 16–17 (emphasis added).

^{70/}*See id.* at 17.

^{71/}*See* Doc. [58-1](#) at 5 (supplemental affidavit of Dr. Beckwith).

^{72/}*See* Tr. 58:17–59:24

^{73/}Doc. [44-2](#) at 121.

^{74/}*Id.* at 122 (“I can average those [void content measurements] over the entire arrow and I come up with .000. That’s insignificant. It’s the area where it’s concentrated that I’m interested in, not the global area. . . . It’s like . . . drilling a . . . hole through a . . . chair leg in one area. . . . [A]veraged over the entire chair leg, [the hole] probably comes up to a zero void, but if I sit on that chair leg, it busts where the void is. So that’s why you do a local void content measurement, not a global one.”).

^{75/}Tr. at 30:8–36:5.

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is incorrect.^{76/} George Saunders complains that Dr. Beckwith did not adequately show that it was the void content that caused the arrow to shatter, rather than damage from past use.^{77/} These complaints about Dr. Beckwith's methods do not merit excluding him as an expert. Instead, they go to the weight that the jury will give to each expert's testimony at trial.

Finally, Defendant objects that, according to the Composites Materials Handbook,^{78/} Dr. Beckwith's image analysis technique should not be used with woven fibers at all.^{79/} But Defendant's quotation that this analysis is "not valid for woven laminates" and "does not work well for glass fiber" comes from an outdated version of this Handbook.^{80/} The current version of the manual does not contain this limitation.^{81/} The updated version of the Handbook does caution that there is a potential for error from the analysts's choice of magnification strength in using this technique.^{82/} But that potential again goes to the weight given Dr. Beckwith's testimony by the jury. It does not merit excluding Dr. Beckwith as an expert.

3. Whether Opinions Are Speculative

Defendant says that two of the opinions offered by Dr. Beckwith are speculative and should therefore be excluded. First, Defendant objects to Dr. Beckwith's opinion that the void content in the arrows contributed to a loss of compression strength in the arrow shafts.^{83/} Dr. Beckwith does

^{76/}Doc. [33-1](#) at 14.

^{77/}Doc. [33-2](#) at 19, 28.

^{78/}In his deposition, Dr. Beckwith referred to the Composites Materials Handbook as the "Bible of the industry." Doc. [44-2](#) at 128.

^{79/}Doc. [44-1](#) at 13; Doc. [75](#) at 7–8.

^{80/}See Doc. [75](#) at 7 (citing Doc. [44-7](#)). The 2002 version of the Composite Materials Handbook was updated in 2012. See Tr. at 31:10–32:3.

^{81/}Compare Doc. [44-7](#) (2002 version), with Doc. [44-6](#) (2012 version).

^{82/}See Doc. [44-6](#) at 6.

^{83/}Doc. [44-1](#) at 14–15; Doc. [75](#) at 9–11. In his deposition, Dr. Beckwith described compression forces occurring "when you push on something," which the arrow experiences when the archer draws back the loaded bow. See Doc. [44-2](#) (continued...)

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not appear to offer any opinions about exactly how much the void content affected the compression strength of these arrows.^{84/} He says in general terms that voids can diminish compression strength of carbon fiber products.^{85/} This sort of general knowledge is well within Dr. Beckwith's expertise.

Second, Defendant objects to Dr. Beckwith's opinion about where on the shattered arrow the fracture began.^{86/} Defendant points to Dr. Beckwith saying it was his "feeling" that the fracture initiated at a void, and claims this means Dr. Beckwith has no basis for his opinion.^{87/} This ignores everything that Dr. Beckwith said before and after using the word "feeling," where he explained, in detail, the evidence from his examination of the arrow that he relied on in reaching this opinion, and why it supported his conclusion.^{88/}

4. Opinions Outside Dr. Beckwith's Expertise

Finally, Defendant moves to exclude the portion of Dr. Beckwith's report that opines on the medical effects of Plaintiff's injury, such as the ongoing effect of the carbon fibers that remain embedded in Plaintiff's hand.^{89/} Plaintiff has offered no evidence that Dr. Beckwith has medical expertise that would qualify him to give such an opinion.

^{83/}(...continued)
at 64–66.

^{84/}Defendant somewhat inconsistently argues that Dr. Beckwith's argument is speculative because he never "did any performance testing on the arrow." Doc. [75](#) at 11. But during his deposition and at the hearing, Dr. Beckwith made it abundantly clear that he could not do any performance testing—including making precise compression strength calculations—because Defendant never provided him with necessary data about the mechanical properties of the specific type of carbon fiber used to make the arrow. See Doc. [44-2](#) at 66–76; Tr. at 52:1–52:15, 69:15–69:24. Without this data, Dr. Beckwith could not do the tests Defendant requests. Thus, it seems to be at least partially Defendant's fault that the expert reports contain only general observations about the compression strength of carbon fiber products, although certainly Plaintiff is partially at fault as well for not seeking an order compelling disclosure of this information.

^{85/}See Doc. [44-3](#) at 16; Doc. [44-5](#) at 12.

^{86/}Doc. [44-1](#) at 15; Doc. [75](#) at 11.

^{87/}Doc. [75](#) at 11 (citing Doc. [44-2](#) at 111).

^{88/}See Doc. [44-2](#) at 109–15.

^{89/}Doc. [44-1](#) at 15 (objecting to Doc. [44-5](#) at 28).

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Defendant also seeks to exclude Dr. Beckwith's opinions regarding the adequacy of warnings on the arrow.^{90/} The Court sees nothing in Dr. Beckwith's report that opines on the adequacy of the warning on the arrow. Nevertheless, Plaintiff has not offered evidence that Dr. Beckwith is an expert on this topic. And in any event, Plaintiff's failure to warn claim lost on summary judgment.^{91/}

D. Conclusion

For the foregoing reasons, the Court **GRANTS** Defendant's motion to exclude the report, opinion, and testimony of Dr. Beckwith only as it relates to the medical effects of Plaintiff's injuries and the adequacy of the warnings on the arrow. The Court otherwise **DENIES** Defendant's motion.

III. Defendant's Related Motions *in Limine*

Defendant has also made several motions *in limine* to exclude evidence that is intertwined with Dr. Beckwith's expert report and opinions on various grounds.

A. Motion to Exclude Dr. Beckwith's Examination of the Exemplar Arrow

As explained above, Dr. Beckwith prepared two reports: one examining the arrow that shattered and injured Plaintiff,^{92/} and one examining an intact exemplar arrow from the same batch that Plaintiff had purchased around the same time.^{93/} Defendant moves to exclude any reference to this exemplar arrow on the grounds that it would be confusing and irrelevant, and that Dr. Beckwith's tests on the arrow resulted in spoliation.^{94/}

1. Relevance

The condition of the exemplar arrow is relevant to Plaintiff's claim. Evidence is relevant if

^{90/}*Id.*

^{91/}Doc. [42](#) at 11–13.

^{92/}Doc. [44-5](#).

^{93/}Doc. [44-3](#).

^{94/}Doc. [47](#).

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it has “any tendency to make a fact more or less probable than it would be without the evidence”^{95/} Here, Plaintiff’s theory appears to be not just that the particular arrow that injured Plaintiff was defective, but that the entirety of Shin Kwang batch 040708 was defective.^{96/} Further, if admitted, the Defendant will use the similarities between the exemplar arrow and the shattered arrow to support its argument that there was no flaw in the shattered arrow.^{97/} The analysis of the exemplar arrow is thus relevant.

Relevant evidence may excluded “if its probative value is *substantially* outweighed by a danger of . . . unfair prejudice, confusion of the issues, misleading the jury, undue delay, [or] wasting time”^{98/} Jurors regularly deal with much more difficult evidence than this, and are able to sort through it; the fact that two arrows were tested is unlikely to confuse anyone. Moreover, this is likely to be a short trial, lasting about two days with only a half-dozen or so witnesses testifying. Adding perhaps an extra hour of testimony relating to the testing of the exemplar arrow will not cause a delay or inconvenience Defendant to such a substantial degree that exclusion is warranted.

2. Spoliation

Defendant also argues that evidence relating to the exemplar arrow should be excluded for spoliation. Defendant argues that Dr. Beckwith’s destructive testing of the exemplar arrow outside the presence of its own experts has prejudiced it because its experts were not consulted as to how to section the arrow and cannot now adequately examine it.^{99/} Plaintiff responds that Defendant’s expert, Dr. Michelle Volger, has been able to examine the exemplar arrow, and that although it has

^{95/}[Fed. R. Evid. 401\(a\)](#).

^{96/}*See* Doc. [58](#) at 4–5.

^{97/}*See* Doc. [73](#) at 2.

^{98/}[Fed. R. Evid. 403](#) (emphasis added).

^{99/}Doc. [47-1](#) at 11; Doc. [73](#) at 6–7.

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been sectioned, no portions of it are missing.^{100/}

“A party seeking a spoliation sanction because evidence was destroyed must establish ‘(1) that the party having control over the evidence had an obligation to preserve it at the time it was destroyed; (2) that the records were destroyed with a culpable state of mind; and (3) that the destroyed evidence was relevant to the party’s claim or defense such that a reasonable trier of fact could find that it would support that claim or defense.’”^{101/} A finding that any one of the prongs is not satisfied is ground for denying the claim.^{102/} If the Court finds that spoliation occurred, it has broad equitable powers to craft an appropriate remedy based on the circumstances of the case and the culpability of the offending party.^{103/}

Defendant fails to show that the exemplar arrow was “destroyed..” Plaintiff provided the exemplar to its expert, Dr. Beckwith before the case was filed. Dr. Beckwith sectioned the exemplar to conduct testing. The sectioned exemplar came from the same batch but was not the arrow involved in Plaintiff’s injuries. More important, none of the exemplar has been lost, except for thenock which is of only minimal importance. All of its segmented portions still remain with Plaintiff’s attorney and all sections of the exemplar have been handled, photographed, and inspected by Dr. Vogler. The exemplar was not destroyed and Defendant makes no convincing showing that Dr. Beckwith’s sectioning of the exemplar impairs any ability to respond to Plaintiff’s claims.

Defendant has also not established that Plaintiff acted with a “culpable state of mind.” “The ‘culpable state of mind’ factor is satisfied by a showing that the evidence was destroyed ‘knowingly,

^{100/}Doc. 58 at 8–10.

^{101/}[Yoder & Frey Auctioneers, Inc. v. EquipmentFacts, LLC](#), No. 14-3002, 2014 WL 7247400, at *2 (6th Cir. Dec. 22, 2014) (quoting [Beaven v. U.S. Dep’t of Justice](#), 622 F.3d 540, 553 (6th Cir. 2010)).

^{102/}[Adkins v. Wolover](#), 692 F.3d 499, 504 (6th Cir. 2012).

^{103/}[See Flagg v. City of Detroit](#), 715 F.3d 165, 177–78 (6th Cir. 2013).

even if without intent to breach a duty to preserve it, or negligently.”^{104/} Repeating, the exemplar sectioning did not “destroy” the evidence. The exemplar arrow was sent to Dr. Beckwith in late 2013 while the parties were already contemplating litigation, but seemingly before the action was filed.^{105/} Having an expert examination of the exemplar before suing Defendant fits with the duty of Plaintiff and his counsel to have evidentiary support for his pleadings.^{106/} Plaintiff has since made the exemplar arrow and the other intact arrows available to Defendant’s experts for their own inspection, along with Dr. Beckwith’s data from his examination. The Court therefore finds it was reasonable to ask Dr. Beckwith to examine the exemplar arrow and was done in a good faith effort to investigate Plaintiff’s claims prior to filing the complaint in this case, rather than with the culpable state of mind necessary for spoliation to apply.

Furthermore, any information lost from Dr. Beckwith’s examination would only be of minimal use to Defendant. Defendant’s experts have been able to examine the exemplar arrow in its sectioned state.^{107/} Additionally, Defendant’s experts have been able to examine the other Wolverine 6070 arrows from batch 040708 Plaintiff owned at the time of his injury.^{108/} Notably, they did not perform any destructive testing on these arrows. In examining all of the intact arrows—including the sectioned exemplar—Defendant’s experts merely looked for surface damage from use. There is no allegation that the exemplar arrow tested by Dr. Beckwith is materially different from the other intact arrows in this respect. And the sectioned arrow was not involved in

^{104/}*Beaven*, 622 F.3d at 554 (quoting [Residential Funding Corp. v. DeGeorge Fin. Corp.](#), 306 F.3d 99, 108 (2d Cir. 2002)) (alterations and emphasis removed).

^{105/}See Doc. [47-1](#) at 3.

^{106/}See [Fed. R. Civ. P. 11\(b\)\(3\)](#). Without some concrete evidence of a potential problem with the arrow, Plaintiff’s claim may not have met the plausibility standard to survive a motion to dismiss. See [Ashcroft v. Iqbal](#), 556 U.S. 662, 678–79 (2009) (citing [Bell Atl. Corp. v. Twombly](#), 550 U.S. 544 (2006)).

^{107/}Doc. [73-2](#) (affidavit of Dr. Michelle Vogler relating observations from examination of the exemplar arrow).

^{108/}See Doc. [33-1](#) at 12; Doc. [33-2](#) at 21–24.

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the injury: it is merely used to compare against the shattered arrow that injured Plaintiff. Defendant's experts have had adequate access to the shattered arrow, and to the other intact arrows that can also act as comparators.

Defendant's experts have been able to get the information they wanted, either from the exemplar arrow in its sectioned state or from their examinations of the other intact arrows.^{109/} The examination of the exemplar arrow is only relevant to show whether the same manufacturing defects or damage from Plaintiff's use is present. And other arrows from that batch were not sectioned and remain available. Under the circumstances, the Court finds no spoliation, and that a sanction would not be warranted in any event.

Because evidence of the exemplar arrow is relevant and no spoliation occurred, the Court **DENIES** Defendant's motion.

B. Motion to Exclude Evidence of Quality Control Procedures

Defendant has moved to exclude any evidence of the quality control processes undertaken either by Defendant (the distributor of the arrow), or by Shin Kwang Corporation (the manufacturer).^{110/} Defendant says that this evidence is irrelevant to Plaintiff's claim, and that any opinions Dr. Beckwith would give about the adequacy of these procedures would be speculative and outside of his expertise.^{111/}

^{109/} *Cf.*, e.g., [Dillon v. Nissan Motor Co., Ltd.](#), 986 F.2d 263, 267–68 (8th Cir. 1993) (upholding exclusion of plaintiffs' expert because defendant's expert had no opportunity to inspect the allegedly defective car and plaintiffs' expert's photographs of it were an insufficient substitute); [State Farm Fire & Cas. Co. v. Frigidaire, a Div. of Gen. Motors Corp.](#), 146 F.R.D. 160, 162–63 (N.D. Ill. 1992) (dismissing case after plaintiff's expert examined allegedly defective dishwasher, kept only some component pieces, and disposed of the rest before defendant's expert could examine it); [Cincinnati Ins. Co. v. Gen. Motors Corp.](#), No. 94OT017, 1994 WL 590566, at *4–6 (Ohio Ct. App. Oct. 28, 1994) (same result as *Dillon*, 986 F.2d 263, on similar facts).

^{110/} Doc. 48.

^{111/} Doc. 48-1.

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This evidence is relevant to Plaintiff's claims. Evidence is relevant if it has "any tendency to make a fact more or less probable than it would be without the evidence" ^{112/} Establishing the existence of a manufacturing defect requires proof of a deviation from "the design specifications, formula, or performance standards of the manufacturer." ^{113/} Evidence regarding what quality control procedures were in place, and whether they were followed, would help the jury infer whether it is likely that some arrows in it could have made it to market with a manufacturing defect. As such, evidence of these quality control procedures is admissible. This would include expert evidence regarding whether the arrows from batch 040708 have material properties that are consistent with Defendant's and Shin Kwang's quality control procedures. ^{114/}

As explained above in discussing Defendant's *Daubert* motion, Dr. Beckwith has sufficient expertise to provide his opinions on standards in the composites industry, including quality control. He has decades of experience in the industry and can testify from personal knowledge as to industry standards for quality control. Deviations from general industry standards for quality control speak to the question of whether there was a manufacturing defect in these arrows, as a jury could infer that failure to meet these standards would increase the likelihood that there was a manufacturing defect that was not detected by either Shin Kwang or Defendant. Dr. Beckwith cannot give an opinion that failure to meet these standards is itself evidence of a manufacturing defect; it would be up to the jury to draw its own inferences. But Dr. Beckwith could offer his opinion as to whether Shin Kwang and Defendant had quality control procedures that meet industry standards, and whether the arrows at issue here should have passed Shin Kwang's and Defendant's inspections under their own standards.

^{112/} [Fed. R. Evid. 401\(a\)](#).

^{113/} [Ohio Rev. Code § 2307.74](#).

^{114/} *See* [Fed. R. Evid. 704\(a\)](#) ("An opinion is not objectionable just because it embraces an ultimate issue.").

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The Court thus **GRANTS IN PART** and **DENIES IN PART** Defendant's motion.

C. Motion to Exclude Evidence of Manufacturing Standards from the Composites Industry

Defendant moves to exclude evidence of manufacturing standards that it says are not specific to the arrow industry, which Defendant says they are therefore irrelevant and confusing.^{115/} Dr. Beckwith's report discusses standards for composite materials manufacturing generally, such as the one percent threshold for void content.^{116/} Defendant says this is too broad a definition of the industry, and that Dr. Beckwith's lack of experience with arrow manufacturing disqualifies him from arguing that these standards apply to arrows.^{117/} Further, Defendant says that evidence regarding these standards is irrelevant and risks confusing the jury.

As explained above in discussing the *Daubert* motion, Defendant's definition of the relevant industry is too narrow. Dr. Beckwith has decades of experience working with products that are manufactured using similar methods, and has sufficient expertise to know what the industry's standards are.

General composites industry standards are relevant, even if not determinative, to Plaintiff's manufacturing defect claim. Evidence is relevant if it has "any tendency to make a fact more or less probable than it would be without the evidence"^{118/} Proving a manufacturing defect requires evidence of the manufacturer's standards.^{119/} Evidence of the industry standards would help establish what Shin Kwang's standards were at the time batch 040708 was made, and is thus relevant. True,

^{115/}Doc. [49-1](#).

^{116/}Doc. [44-3](#) at 4.

^{117/}Doc. [49-1](#).

^{118/}[Fed. R. Evid. 401\(a\)](#).

^{119/}*See* [Ohio Rev. Code § 2307.74](#).

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the industry standards would probably have a more direct connection to a defective design claim.^{120/} But large deviations from relevant industry standards would also suggest that batch 040708 had a manufacturing defect, as the jury could reasonably infer that a manufacturer is unlikely to grossly deviate from these standards.

Furthermore, Dr. Beckwith's testimony regarding general standards in the composites industry is relevant to explaining his examinations of the arrows to the jury. He may thus discuss composites industry standards for the purpose of explaining his methodology.^{121/} He can give the opinion that the high void content caused the arrow to shatter and he can offer industry standards as some background evidence to support his opinion that void content matters. He cannot give the opinion that a greater than one percent void content indicates a manufacturing defect solely because it exceeds the industry standards, but he could offer his opinion as to whether his observations of the arrows are consistent with Shin Kwang's own manufacturing standards.

The Court therefore **GRANTS IN PART** and **DENIES IN PART** Defendant's motion.

D. Motion to Preclude Argument that Eastman Outdoors Is the Manufacturer of the Arrow

Defendant last moves to preclude Plaintiff from arguing that Defendant is the manufacturer of the defective arrow, rather than the supplier of it.^{122/} Defendant worries that Plaintiff will argue

^{120/}See Ohio Rev. Code § [2307.75\(B\)\(4\)](#) ("The foreseeable risks associated with the design . . . of a product shall be determined by considering factors including . . . [t]he extent to which that design . . . conformed to any applicable public or private product standard . . .").

^{121/}The Court finds it is necessary for the jury to evaluate his credibility, and this need outweighs any concerns about confusing or misleading the jury. See [David H. Kaye, et al., The New Wigmore: A Treatise on Evidence: Expert Evidence § 4.7.2 \(2014\)](#) (Otherwise inadmissible evidence may be disclosed "for the limited purpose of helping the fact-finder evaluate the expert's testimony.").

^{122/}Doc. [51](#). Plaintiff argues that this "motion *in limine*" should be denied outright because it regards a purely legal issue, rather than an evidentiary one, and is thus procedurally improper. See Doc. [62](#) at 3. Plaintiff is correct in one respect: a motion *in limine* asks the Court to decide the admissibility of a piece of evidence before trial. See [Wright & Miller, 21 Fed. Prac. & Proc. Evid. § 5037.10 \(2d ed. 2014\)](#). But the general policy of federal courts is to resolve motions on the merits rather than on technical deficiencies in labeling. See [Wright & Miller, 5 Fed. Prac. & Proc. Civ.](#)

(continued...)

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that Defendant, as manufacturer, had a duty to inspect the arrows, and will use Dr. Beckwith's testimony to push this argument.^{123/}

There is no real dispute that Shin Kwang is in fact the manufacturer of the arrow that injured Plaintiff.^{124/} But the law allows a supplier^{125/} to be held liable for compensatory damages "as if it were the manufacturer" when, as here, it has marketed the product under its own label or trade name.^{126/} In fact, the Court's opinion denying summary judgment already held that this rule would apply in this case.^{127/}

Plaintiff argues that the statutory language "as if it were the manufacturer" means that Defendant legally *is* the manufacturer.^{128/} This is obviously incorrect. In this context, "as if" is akin to a simile: it says one thing (a supplier) is treated *like* another thing (a manufacturer).^{129/} The statute does not magically turn a supplier into a manufacturer; in fact, the definition of supplier specifically excludes manufacturers.^{130/} It only makes the supplier liable to the consumer for defects attributable to the manufacturer.

^{122/}(...continued)

^{122/}[§ 1192 \(3d ed. 2014\)](#). Moreover, in all likelihood this motion will simply be raised at trial if it is not addressed beforehand. Thus, in the interest of efficiency the Court will resolve this dispute now.

^{123/}See Doc. [72](#) at 2.

^{124/}See [Ohio Rev. Code § 2307.71\(A\)\(9\)](#) ("Manufacturer" means a person engaged in a business to design, formulate, produce, create, make, construct, assemble, or rebuild a product or a component of a product.").

^{125/}See [Ohio Rev. Code § 2307.71\(A\)\(15\)](#) ("Supplier" means . . . [a] person that, in the course of a business conducted for the purpose, sells, distributes, leases, prepares, blends, packages, labels, or otherwise participates in the placing of a product in the stream of commerce. . . . 'Supplier' does not include . . . [a] manufacturer.")

^{126/}[Ohio Rev. Code § 2307.78\(B\)\(7\)](#).

^{127/}See Doc. [42](#) at 7.

^{128/}Doc. [62](#).

^{129/}See *Simile*, Merriam-Webster Dictionary, <http://unabridged.merriam-webster.com/unabridged/simile> (last visited Jan. 10, 2015). "As if" can have other meanings in other contexts, such as an expression of disgust and disbelief. See, e.g., *Clueless* (Paramount Pictures 1995). But the Court is aware of no meaning of "as if" that functions as a straight equivalence the way Plaintiff suggests.

^{130/}See [Ohio Rev. Code § 2307.71\(A\)\(15\)\(b\)](#) ("Supplier" does not include . . . [a] manufacturer.")

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Because Plaintiff's proposed reading of the statute is incorrect, the Court **GRANTS** Defendant's motion.

VI. Conclusion

For the foregoing reasons, Defendant's motion to exclude Plaintiff's expert, Dr. Scott Beckwith, is **GRANTED IN PART** and **DENIED IN PART**. Dr. Beckwith may not testify about Plaintiff's medical condition or the adequacy of the warning on the arrows, but may otherwise testify about the matters contained in his expert reports.

In addition:

- Defendant's motion to exclude Dr. Beckwith's examination of the exemplar arrow is **DENIED**.
- Defendant's motion to exclude evidence of quality control procedures is **GRANTED IN PART** and **DENIED IN PART**.
- Defendant's motion to exclude evidence of manufacturing standards from the composites industry is **GRANTED IN PART** and **DENIED IN PART**.
- Defendant's motion to preclude Plaintiff's argument that Defendant is the manufacturer of the arrows is **GRANTED**.

IT IS SO ORDERED

Dated: January 14, 2015

s/ James S. Gwin
JAMES S. GWIN
UNITED STATES DISTRICT JUDGE