IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF PENNSYLVANIA

JULIA ROBERTSON-ARMSTRONG	:	CIVIL ACTION
	:	
v.	:	
	:	
ROBINSON HELICOPTER COMPANY, INC., et al.	:	NO. 13-2810

MEMORANDUM

Bartle, J. November 19, 2015

Plaintiff Julia Robertson-Armstrong ("Robertson-Armstrong") was severely injured on July 20, 2011 when a helicopter in which she was a passenger crashed in New Jersey. She has sued Robinson Helicopter Company, Inc. ("Robinson"), the manufacturer of the helicopter, as well as Nassau Helicopters, Inc. ("Nassau"), which owned and operated it at the time of the crash.[1] Her complaint includes claims for strict liability, negligence, negligent misrepresentation and omission, and fraud against Robinson and a negligence claim

1. Roberston-Armstrong also sued three related business entities: Textron, Inc. ("Textron"); AVCO Corporation ("AVCO"); and Lycoming, a/k/a Lycoming Engines, a/k/a Lycoming Engines Operating Division of AVCO Corporation, a/k/a Textron Lycoming Reciprocating Engine Division ("Lycoming"). She alleged that Lycoming had manufactured the engine of the subject helicopter and its "fuel related components," that Lycoming was a division of AVCO, and that Textron was liable for AVCO's acts under a participation theory. On April 23, 2014 the court dismissed Robertson-Armstrong's claims against Lycoming and Textron. The parties subsequently stipulated to the dismissal of Robertson-Armstrong's claims against AVCO and Nassau's crossclaims against AVCO and Textron.

against Nassau. Robinson and Nassau subsequently filed crossclaims against one another, each asserting that the other is liable for the harm alleged.

Robinson has filed a number of pretrial motions challenging Robertson-Armstrong's experts under Daubert v. Merrel Dow Pharmaceuticals, 509 U.S. 579 (1993), and Rule 702 of the Federal Rules of Evidence. We will now consider the motion of Robinson to preclude certain testimony of Robertson-Armstrong's expert Colin A. Sommer ("Sommer").

I.

The court has a "gatekeeping" function in connection with expert testimony. See Gen. Elec. Co., et al. v. Joiner, 522 U.S. 136, 142 (1997); see also Daubert, 509 U.S. at 589. Rule 702 of the Federal Rules of Evidence provides:

> 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. As our Court of Appeals has repeatedly noted, Rule 702 embodies three requirements: qualification,

reliability, and fit. Pineda v. Ford Motor Co., 520 F.3d 237, 244 (3d Cir. 2008).

An expert is qualified if he "possess[es] specialized expertise." Schneider ex rel. Estate of Schneider v. Fried, 320 F.3d 396, 404 (3d Cir. 2003). This does not necessarily require formal credentials, as "a broad range of knowledge, skills, and training qualify an expert," and may include informal qualifications such as real-world experience. In re Paoli R.R. Yard PCB Litig., 35 F.3d 717, 741 (3d Cir. 1994). The qualification standard is a liberal one, and an expert may be sufficiently qualified under Rule 702 even if "the trial court does not deem the proposed expert to be the best qualified or because the proposed expert does not have the specialization that the court considers most appropriate." Holbrook v. Lykes Bros. S.S. Co., 80 F.3d 777, 782 (3d Cir. 1996).

To determine reliability, we focus not on the expert's conclusion but on whether that conclusion is "based on the methods and procedures of science rather than on subjective belief or unsupported speculation." Schneider, 320 F.3d at 404 (internal quotation marks omitted). Our analysis may include such factors as:

> (1) whether a method consists of a testable hypothesis; (2) whether the method has been subject to peer review; (3) the known or potential rate of error; (4) the existence and maintenance of standards controlling the

> technique's operation; (5) whether the method is generally accepted; (6) the relationship of the technique to methods which have been established to be reliable; (7) the qualifications of the expert witness testifying based on the methodology; and (8) the non-judicial uses to which the method has been put.

Pineda, 520 F.3d at 247-48.

"[T]he test of reliability is flexible" and this court possesses a broad latitude in determining reliability. Kumho Tire Co. v. Carmichael, 526 U.S. 137, 141-42 (1999). To be reliable under Daubert, a party need not prove that his or her expert's opinion is "correct." Paoli, 35 F.3d at 744. Instead:

> As long as an expert's scientific testimony rests upon good grounds, based on what is known, it should be tested by the adversary process –competing expert testimony and active cross–examination – rather than excluded from jurors' scrutiny for fear that they will not grasp its complexities or satisfactorily weigh its inadequacies.

United States v. Mitchell, 365 F.3d 215, 244 (3d Cir. 2004) (quoting Ruiz–Troche v. Pepsi Cola Bottling Co., 161 F.3d 77, 85 (1st Cir. 1998)).

As for "fit," expert testimony must also "assist the trier of fact to understand the evidence or to determine a fact in issue." Fed. R. Evid. 702. Thus, to "fit," such evidence must bear some relation to the "particular disputed factual issues in the case." United States v. Downing, 753 F.2d 1224, 1237 (3d Cir. 1985). Accordingly, this factor has been

described as one of relevance. Daubert v. Merrell Dow Pharms., Inc., 509 U.S. 579, 591 (1993); Paoli, 35 F.3d at 745 & n.13.

II.

Plaintiff retained Sommer to provide a reconstruction of the subject accident. As she states in her brief in opposition to the instant motion, she intends to introduce Summer's testimony to address "the design, certification, and manufacture of helicopter engines, seats and structures as they relate to [the] accident." She also seeks to rely on Sommer's "accident reconstruction testimony as it involves helicopter piloting" and on his "opinions concerning biomechanics and injury causation."

According to Sommer's Curriculum Vitae, he holds a Bachelor of Science degree in civil and environmental engineering with a focus in structural design from the University of Michigan. He is a licensed professional engineer and a member of the National Council of Examiners for Engineering and Surveying. He has undergone training in the area of aircraft accident reconstruction and investigation, completing a National Transportation Safety Board ("NTSB") course in 2004 and a Southern California Safety Institute course in 2005. His resume shows that he has also received training as an aviation technician. Further, Sommer is certified as a private pilot and is familiar with the Federal Aviation Regulations ("FARs"). His current position is that of Vice President of Aeroscope, Inc., a firm which specializes in the

investigation of aircraft crashes. There, Sommer has "personally investigated" more than 350 aircraft accidents, more than 60 of which involved helicopters and at least 30 of which involved helicopters manufactured by Robinson.

In connection with this lawsuit, Sommer prepared a report of his findings dated July 6, 2015 and a supplemental report dated September 30, 2015. To investigate the crash and prepare the report and the supplemental report, Sommer adhered to the investigative techniques set forth in "numerous widely accepted accident investigation manuals" including those published by several branches of the United States armed forces. He further performed "a differential diagnosis by systematically eliminating potential sources to ascertain the most likely cause of the accident," examining materials relating to the flight path, operating procedures, and the wreckage itself. In his reports, Sommer opines as to: (1) the qualifications of the individual who was piloting the helicopter when the crash occurred; (2) whether the crash was caused by the design characteristics of the subject helicopter; (3) the crashworthiness of the subject helicopter; (4) whether design alternatives existed which, if utilized, would have helped to avoid the crash or to minimize the injuries sustained; (5) the compliance of the subject helicopter with federal regulations; and (6) Robinson's prior knowledge of the helicopter's purportedly unsafe design characteristics prior to the crash.

III.

Robinson seeks to preclude portions of Sommer's testimony on the grounds that he is not qualified to offer certain opinions and that the methodology upon which he relied in reaching those opinions is not reliable.[2] Specifically, Robinson maintains that Sommer lacks the manufacturing and design expertise necessary for him to opine on the design characteristics of the subject helicopter and on the purportedly inadequate nature of safety notices issued by Robinson. Robinson also argues that Sommer is not sufficiently qualified in biomechanics to address Robertson-Armstrong's injuries and whether they were exacerbated by the helicopter's purported lack of crashworthiness. Moreover, according to Robinson, Sommer should not be permitted to testify about the FARs, about NTSB safety notices, or about safety notices issued by the company. Finally, Robinson urges that since he is not a helicopter pilot, Sommer is not qualified to testify on the operation of a helicopter.

As noted above, Sommer has undergone substantial training in the investigation of aircraft crashes. He states in an affidavit submitted by Robertson-Armstrong in opposition to Robinson's motion that this training addressed topics which include "Conducting accident investigations," "Biomedical investigations,"

2. Robinson does not appear to challenge the "fit" of Sommer's testimony to the facts of this particular case. See Pineda, 520 F.3d at 244.

"Accident Investigation Pathology," "Survival Factors," "Aircraft performance and Impact Kinematics," "Reciprocating engines," "Weather," "Human factors," "Fracture analysis" and "Aeromedical Investigations." Sommer is also licensed as an engineer and has been trained on structural design topics which include materials properties and strength, stress and structural analysis, fluid mechanics, thermodynamics, and fatigue theory. Further, Sommer has extensive experience in investigating and reconstructing aircraft crashes, particularly helicopter crashes, and has investigated crashes involving Robinson helicopters on numerous occasions. As part of his work, Sommer routinely consults federal aviation regulations.

In light of his experience, Sommer is qualified to offer an expert opinion about the design, certification, and manufacture of the subject helicopter, and about biomechanics and injury causation as they relate to the subject crash. Sommer is also qualified to offer testimony about Robinson's compliance with certain federal regulations insofar as such compliance is related to the subject helicopter and about whether Robinson's issuance of safety notices addressed concerns about the aircraft. Sommer "possesses specialized expertise" in the area of helicopter crash investigation, and this expertise qualifies him to offer his opinions on these topics. See Schneider, 320 F.3d at 404.

Robinson's reliance on Hoban v. Grumman Corp., 717 F. Supp. 1129 (E.D. Va. 1989), is misplaced. In that case, the plaintiff offered the expert testimony of a "safety engineer" and accident reconstruction specialist to demonstrate that an airplane crash had been caused by a fire which was the result of fuel leakage. 717 F. Supp. at 1131. The court concluded that the witness in question lacked the expertise to provide that testimony since he "had no education or direct experience with aerodynamics," "no knowledge of the workings of the particular aircraft and its fuel system," and "no indirect experience that related to the design of the allegedly defective fuel system." Id. at 1134. In contrast, Sommer does have expertise and education on the relevant aspects of mechanical design. Having participated in investigations of crashes involving other Robinson helicopters, he has familiarity with the aircraft. In sum, unlike the witness in Hoban, Sommer is qualified to present the testimony at issue.

Robinson also contends that Sommer is not qualified to testify about "issues related to piloting a helicopter" because he is not a helicopter pilot. We disagree. As noted above, Sommer has received extensive training in the field of aviation crash investigation and reconstruction. His affidavit reveals that this training familiarized him with "human factors." As a crash investigation and reconstruction professional, Sommer would not be able to perform his job without assessing the possibility that a

particular crash was caused by pilot error. His substantial experience in the investigation and reconstruction field and his training in that area have qualified him to consider piloting as a factor and to offer his opinions about it at trial.

We turn next to Robinson's argument that Sommer's methodology is not reliable. According to Robinson, Sommer based his findings on a series of "impact calculations" which in turn relied on estimates of the subject helicopter's initial velocity at the time it lost power and began its descent. In one appendix to his supplemental report, Sommer estimated this velocity to be 1800 feet per minute, while in another appendix, he estimated 1500 feet per minute. Robinson claims that Sommer provided no explanation in his reports for these estimates, and argues as a result that the calculations, as well as all conclusions stemming from them, should be excluded as unreliable.

A review of the supplemental report, however, reveals that Sommer does in fact provide a basis for the estimates. He states in his report that "[d]uring a normal autorotation following a settling with power condition, the subject helicopter descends at a rate of approximately 1800 feet/min." He goes on to detail the lack of a skid pattern at the crash site and concludes that "[i]t is likely that [the] impact speed was less than 1500 feet/minute." Further, as noted above, Robertson-Armstrong's response to the instant motion is accompanied by an affidavit provided by Sommer.

In it, he explains the basis for the initial velocity estimates which served as the basis for his calculations. According to Sommer, the 1800 foot-per-minute velocity was obtained from: a federally-approved flight manual; an operating handbook for the Robinson R22 model helicopter, which is the type of helicopter at issue in this matter; and another expert with whom Sommer consulted. Sommer states that he obtained the 1500 foot-per-minute velocity from another expert who informed him that such an impact speed was consistent with the injuries sustained by Robertson-Armstrong and the pilot of the subject helicopter.

Sommer used the 1800 foot-per-minute estimate to complete the calculation which appears in Appendix 3 to his supplemental report and the 1500 foot-per-minute estimate to complete the calculation in Appendix 4. It appears, however, that the result reached by completing the calculation in Appendix 4 is the result that served as the basis for certain conclusions contained in the report. This is consistent with Sommer's explanation that the 1500 foot-per-minute velocity estimate is supported by the evidence available at the crash site and by the injuries sustained by Robertson-Armstrong and the pilot. In other words, the calculation which actually gives rise to Sommer's conclusion is based upon "the methods and procedures of science" and not "on subjective belief or unsupported speculation." See Schneider, 320 F.3d at 404. In order to be reliable, Sommer's conclusions need not necessarily be

correct, and any dispute about their veracity may be "tested by the adversary process." See Mitchell, 365 F.3d at 244.

Although Robinson does not challenge his opinions on this basis, we note that Sommer's reports rely in part on the opinions of other experts in this matter. Specifically, Sommer cites the opinion of Col. William S. Lawrence ("Col. Lawrence") (whose testimony is the subject of a separate Daubert motion) about the design characteristics of the R22 helicopter and how these characteristics manifest themselves when the aircraft is at risk of crashing. He also cites the opinions of Dr. Sri Kumar ("Dr. Kumar"), William Carden ("Carden"), and Eric Van Iderstine ("Van Iderstine") about the crashworthiness of the subject helicopter and the effect of its design characteristics on Robertson-Armstrong's injuries. Rule 703 of the Federal Rules of Evidence allows an expert to base his opinions on facts or date upon which "experts in the particular field would reasonably rely . . . in forming an opinion." Courts have routinely interpreted this language to permit experts to rely on the opinions of other experts in formulating opinions, particularly when those other experts have been retained in the matter and will be subject to cross-examination at trial. E.g., Keller v. Feasterville Family Health Care Ctr., 557 F. Supp. 2d 671, 681 (E.D. Pa. 2008). Furthermore, we have determined that Col. Lawrence, Dr. Kumar, Carden, and Van Iderstine shall be permitted to testify as to the same opinions

relied upon by Sommer. Sommer's reliance on these opinions does not change our conclusion that his methodology is sound.

For these reasons, Robinson's motion will be denied.