



in issue. The First Circuit Court of Appeals has recognized that "[u]nder Rule 702, a qualified expert witness may testify 'in the form of an opinion, or otherwise, if (1) the testimony is based upon sufficient facts or data, (2) the testimony is the product of reliable principles and methods, and (3) the witness has applied the principles and methods reliably to the facts. of this case.'" United States v. Mooney, 315 F. 3d 54, 61 (1<sup>st</sup> Cir. 2002)(a handwriting comparison case) The First Circuit went on to recognize that the Supreme Court has pointed out that it has identified four factors that may assist a trial judge in determining the admissibility of an expert's testimony including: (1) whether the theory or technique can be and has been tested; (2) whether the technique has been subject to peer review and publication; (3) the technique's known or potential rate of error and (4) the level of the theory or technique's acceptance within the relevant discipline. Significantly, the First Circuit went on to point out that those four factors are not definitive or exhaustive and the trial judge enjoys broad latitude to use other factors to evaluate reliability. Mooney, supra at 62<sup>1</sup>

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<sup>1</sup>While testimony could have been, and perhaps should have been, elicited from Forensic Scientist Homer during direct or cross examination about error rates for footwear comparisons it was not. Forensic Scientist Homer did testify about the error rate of the ACE-V methodology employed as being zero. That methodology is only a standardized way of doing the examinations, a way that has been determined through use over time to be sufficient in gathering information to reach correct conclusions. This methodology is tested and reinforced whenever a test is

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given in which the answer is known. This is a standard way to test the effectiveness of any method: to administer a test in which the answer is known (referred to as a "standard" or a "control") and comparing the answer given by the instrument or examiner to the known answer. Deviation from that known standard/control/answer is a measure of the "error rate" of an examiner or of an instrument, not of the methodology. The ACE-V methodology has been tested and proven for many years in the form of classroom exercises and proficiency tests and has been used and written about since Huber in 1972 and used by Cassidy in his experiments starting in 1969 and published in his book "Footwear Identification" in 1980.

Daubert does not demand unassailable expert testimony. The First Circuit in Mooney addressed the defendant's claims that the discipline of handwriting analysis lacked a set standard regarding the number of handwriting similarities required to make a match and that studies regarding its accuracy had been subject to criticism by pointing out that "Daubert does not require that the party who proffers expert testimony carry the burden of proving to the judge that the expert's assessment of the situation is correct. . . . It demands only that the proponent of the evidence show that the expert's conclusion has been arrived at in a scientifically sound and methodologically reliable fashion." Mooney, supra at 62-63 quoting Ruiz-Troche v Pepsi Cola of P.R. Bottling Co., 161 F. 3d 77, 85 (1<sup>st</sup> Cir. 1998)

Significantly, the First Circuit concluded this subject by explaining that ". . . once a trial judge determines the reliability of the proffered expert's methodology and the validity of his reasoning, the expert should be permitted to testify as to the inferences and conclusions he draws from it, and **any flaws in his opinion may be exposed through cross-examination or competing expert testimony.**" Mooney, supra at 63 (emphasis added)<sup>2</sup>

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<sup>2</sup>Defendant's contention (at p. 4 of his post-hearing memorandum) that "[t]he field proves no tested guidance on what is or is not 'sufficient' for an examiner to declare a match" was refuted through the testimony of Forensic Scientist Homer and supplemented by the Cassidy research (Government Exhibit B-1)

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which determined that it was not possible to set a minimum number of characteristics needed to identify an impression as coming from a particular shoe due to the variety of variables present when an impression is left. Those variables include the surface on which the impression is left, what the impression is made of, how the impression is developed and captured, the variety of pressures exerted when the impression is left and the footwear itself. All variables are taken into consideration during the "A" (Analysis) part of the examination methodology. It is the lack of training and experience by a lay person that makes it impossible for them to adequately address the variables in the "A" phase of the ACE-V methodology. Cassidy's research found that what is required in order to determine if an impression was made by a particular shoe is sufficient quality (clarity) and quantity (of impression, the characteristics in that impression and the alignment of the characteristics between an unknown and a known impression. The testimony established that every impression is different and an individual analysis, comparison and evaluation is required for each individual impression.

Similarly, in a DNA evidence expert witness case, the First Circuit determined that the trial court had not abused its discretion in admitting the evidence after conducting a lengthy hearing and holding that “. . . any flaws in Dr. Deadman’s application of an otherwise reliable methodology went to weight and credibility and not admissibility.” United States v. Shea, 211 F. 3d 658, 668 (1<sup>st</sup> Cir. 2000) The First Circuit went on to point out that “[ m]ost circuits that have spoken have agreed with this approach, see, e.g., United States v. Johnson, 56 F. 3d 947, 952-53 (8<sup>th</sup> Cir. 1995), relying on the view that ‘cross-examination, presentation of contrary evidence, and careful instruction on the burden of proof’ is the proper challenge to ‘shaky but admissible evidence.” Shea, supra at 668

Footprint imprint evidence has been found admissible through expert witness testimony. United States v. Ross, 263 F.3d 844, 846-47 (8<sup>th</sup> Cir. 2001); United States v. Allen, 207 F. Supp 2d 856, 857-68 (N.D. IN. 2002); United States v. Allen, 208 F. Supp. 984,985-86 (N.D. IN. 2002). Defendant has provided no authority to the contrary. In United States v. Ross, 263 F. 3d 844, 846 (8<sup>th</sup> Cir. 2001) the appellate court upheld the admission of expert testimony, from an FBI forensic examiner specializing in this kind of evidence, concerning footprints and tire imprints found in the snow at the scene of a bank robbery and offering the opinion that the footprints matched the boots

seized from defendant Ross' car and that the tire treads bore many similarities to the tires on the vehicle defendant Ross had borrowed at the time of one of the robberies. The district court in Ross had held a hearing in limine and had concluded that the evidence was admissible at trial and met the requirements of Fed. R. Evid. 702 and of Daubert v. Merrell Dow Pharmaceuticals, Inc. 509 U.S. 579, 592-95 (1993) In concluding that the district court had not committed any error the Eighth Circuit Court of Appeals pointed out that "persons with specialized knowledge may offer their expert testimony if it would be helpful to the jury's understanding of the case." Ross, Id. While the Ross decision did not go into any more details about the evidence produced at the Daubert/Rule 702 hearing or about the qualifications of the expert in that case, the decision did recognize that Ross was "on all fours" with United States v. Rose, 731 F. 2d 1337, 1345-46 (8<sup>th</sup> Cir. 1984), cert. denied, 469 U.S. 931 (1984)

In Rose the Eighth Circuit Court of Appeals had upheld the admission of evidence offered by the government to show that a shoeprint impression taken from the counter of the robbed credit union had been made by a shoe seized from defendant Rose. Relying on Fed. R. Evid. 702 and recognizing that "[e]xpert testimony should be admitted whenever it 'will assist the trier of fact to understand the evidence or to determine a fact in issue..." the Court concluded that the expert witness from the

Kansas City Police Department had "assisted the jury by explaining the color transposition between the test print made by Rose's right shoe and the shoeprint impression lifted from the counter." Rose, supra at 1345-46 The Eighth Circuit also pointed out that the expert had ". . . provided a method for comparing the test print and shoeprint impression lifted from the counter" which included a comparison of the class characteristics of size, shape and design and when they were found to be the same went on to the more specific analysis of the individual characteristics which resulted in the conclusion that the shoe impression and the test impression matched. Rose, Id. The Eighth Circuit concluded that witness was qualified as an expert on the subject of shoeprint comparisons based on having worked as a firearms and tool mark examiner in the Regional Crime Laboratory (since 1976, approximately 6 years), had associate and bachelor's degrees and was working on a master's degree in criminal justice administration, had studied , among other things, shoeprint analysis, had knowledge in regard to shoeprint examinations primarily from contact with other members of his profession and from on-the-job training, had compared specific shoes with prints in twenty-five to thirty cases over six years, had also compared tires with tire marks, belonged to several professional organizations including one which sometimes had articles pertaining to shoeprint comparisons. Rose, Id. While pointing out

that "[a]n expert witness need not be an outstanding practitioner in the field nor have certificates of training in the particular subject" the Eighth Circuit found the witness' "knowledge of shoe and print comparisons was sufficient to insure that his opinion would assist the jury." Rose, Id.<sup>3</sup>

In United States v. Allen, 207 F. Supp. 2<sup>nd</sup> 856, 857, 868-869 (N. D. IN. 2002) the district court confirmed ". . . the general admissibility of footwear impression evidence under Daubert. During the hearing held in Allen, supra at 859-861, testimony was taken from Sandra Wiersma, a forensic examiner with the FBI and an expert under whom Forensic Scientist Homer has studied, about the "Methodology for Footwear Impression Evidence" from the obtaining footwear impressions through the use of gelatin lifts through the examination of the footwear impression, photographing the impression, photographing the known shoe, making the test impression of the known shoe and performing the "side by side comparison" and "superimposition comparison" of the known and unknown impressions. Corroborative testimony was provided in that case by John R. Vanderkolk, a criminalist and

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<sup>3</sup>The qualifications and experience described to the Court of Forensic Scientist Homer exceeded those described in Rose, supra. There is no requirement that such an expert witness have a certificate from the International Association for Identification (IAI) although the existence of such a voluntary but not mandatory certification program and the fact that a witness is not a Certified Footwear Examiner in that program may be grounds for cross-examination. Certification through the IAI is not a requirement for footwear examiners in the Maine State Police Crime Lab, a certified crime ~~page~~ 9 of 11

manager of the Indiana State Police Laboratory. Allen, supra, at 861. Wiersma and Vanderkolk testified in Allen, supra at 861 about rates of error, proficiency training, peer review and general acceptance within the forensic community and provided a lengthy list of journals and publications containing discussions of the general methodology of examining footwear and other impression evidence.

Forensic Scientist Homer provided substantial evidence regarding the reliability of her conclusions about the footwear evidence. First, Forensic Scientist Homer testified generally about her training and experience in processing physical evidence, about her training and experience in impression evidence in general and specifically about her training and experience in making footwear impression comparisons. Her testimony was supplemented with a copy of her detailed curriculum vitae, a copy of which was admitted into evidence as Government Exhibit A. Second, Forensic Scientist Homer testified generally about how footwear impression comparisons are performed and about how she performed the footwear comparisons in this case. ("Footwear Identification" by Michael J. Cassidy of the Royal Canadian Mounted Police admitted as Government Exhibit B-1) Third, Forensic Scientist Homer testified that footwear impression comparisons are a generally accepted forensic technique. Government Exhibits B-1, B-2, B-3 and B-4 establish

both the widespread acceptance of the theories and techniques and the fact that they are subject to extensive peer review and publication.

The Government contends that at the hearing it established that the methodology used by Forensic Scientist Cynthia D. Homer is reliable in that the conclusions reached by those in the field are the product of reliable technical or specialized principles and methods. The Government also contends that testimony established the specialized nature of obtaining footwear impression evidence, a process which entails making test impressions and having qualified, trained and experienced examiners critically comparing the test impressions with lifts taken from the crime scene. This process requires a critically trained eye to ensure accurate results and is not a simple matching process not requiring any specialized skill.<sup>4</sup>

After the district court in United States v. Allen, 208 F.

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<sup>4</sup>As Forensic Scientist Homer's testimony at the evidentiary hearing revealed, her training which includes extensive knowledge of footwear manufacturing processes is vital in performing quality footwear impression evidence examinations. Through understanding manufacturing processes a footwear examiner can distinguish between "class" (manufacturing) characteristics and "accidental" (random damage as a result of use) characteristics. Knowledge and understanding, gained only through training and experience, of the differences between these two characteristics is vital in coming to the correct conclusion in an examination (identification, exclusion or inconclusive). Testimony established that touring manufacturing companies is part of the Maine State Police Crime Lab's Latent Print Sections's Footwear and Tiremark Training Manual and is also part of the IAI's Recommended Course of Study for Footwear and Tiremark examiners.

Supp. 2<sup>nd</sup> 984 ( N.D. IN. 2002) conducted a second hearing directed specifically at the qualifications of proposed expert witness Pitzen, it concluded that, based on his testimony, he was ". . . qualified by both training and experience in the relevant field of footwear impression evidence." The district court reached that conclusion despite the fact that the Government had ". . . made no record as to Pitzen's proficiency or rate of error in taking impression evidence" and had not offered ". . . any evidence as to whether Pitzen was regularly proficiency tested in his field." The district court explained that it did ". . . not believe that those omissions in the record served to disqualify Pitzen from offering his testimony." Allen, supra at 986 That would be grounds for cross examination and for the presentation of contrary evidence by the defendant at trial.

The government contends that in the instant case it established at the hearing that examiners of footwear impression evidence are routinely tested to ensure proficiency in the field, that the techniques used have been generally accepted in the forensic community and that the methodologies described are subject to peer review. Forensic Scientist Homer undergoes outside proficiency testing on an annual basis.

Defendant has not offered an expert whose testimony would contradict that offered by the Government. This is despite the fact that Forensic Scientist Homer's testimony made it clear that the evidence has been and remains available for examination by an expert witness for the

defense. Forensic Scientist Homer's uncontradicted testimony was that her conclusions were independently verified by another qualified footwear examiner and that the verification process involves the reviewer taking the evidence, performing his or her own "ACE" and coming to their own conclusions. Forensic Scientist Homer also testified that the Maine State Police trooper who collected R-1, R-2 and R-3 was a trained member of the Maine State Police Evidence Response Team and that Homer herself had examined the impressions and had determined that the trooper had the training and experience to collect those exhibits without further assistance from her while she was collecting R-28. .

Defendant has claimed that the jury itself is capable to judge, compare and contrast the footwear with the footwear impressions and should engage in its own fact-finding process regarding the ultimate issue of identification. Defendant contends that expertise is not required, that any lay person has the simple ability to see and compare and that a fact finder is equally able to make this comparison. (Defendant's post-hearing memorandum at p. 3) The Government disagrees. As the testimony and evidence at the evidentiary hearing established, the critical comparison phase of the analysis, which Defendant seems to contend is a simple matching process not requiring any special skill which jurors could do themselves, actually requires a critically trained eye to ensure accurate, and thus more helpful results. Just one example demonstrates how unrealistic Defendant's contention is. If the Court, as part of its decision making process, takes, in the same way a jury would during deliberations, Government Exhibit R-28 (the footwear impression recovered from the credit union counter), Government Exhibit R-28-P (the photograph of R-28), Government Exhibit K-2 (the right shoe recovered shortly after and close to the scene of the credit union robbery) and Government Exhibit K-2-T (the test

impression of Exhibit K-2) and tries to answer the question; Did that shoe, Exhibit K-2, create the impression on the counter, Exhibit R-28? it is highly unlikely, absent the expert witness testimony of an educated, trained and experienced forensic scientist such as Cynthia Homer, that the Court acting as trier of fact or the jury would be able to come to any conclusion other than that it could not make any determination. Defendant's claim (at p. 3 of his post-hearing memorandum that "[a] fact finder is equally able to make this comparison" is without merit.<sup>5</sup> This is precisely why such expert testimony is admissible under Fed. R. Evid. 702 because the witness' scientific, technical and specialized knowledge will assist the trier of fact to understand the evidence and to determine a fact in issue whether that specific shoe made that impression. Not only has the defense not presented an expert witness of its own but the defense has not presented any published legal precedent or scientific or technical publication to support its assertion.<sup>6</sup>

For the reasons and based on the authority set forth above, the Government contends that Defendant's motion to exclude the footwear impression comparison evidence should be denied. The Fed. R. Evid. 702 requirements have been met in this case, proposed expert witness, Forensic Scientist Cynthia D. Homer, would testify as to valid scientific knowledge and that testimony would assist the trier of fact with a fact at issue. Her testimony has been shown to be reliable and her testimony has been shown to be relevant. The methodology she employed has

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<sup>5</sup>The impressions on the slide entitled "Same Wear/Same Accidental Characteristics = Identification" were specifically chosen for use in the Power Point presentation used at the evidentiary hearing because they were so easy to use for a demonstration. A view of Government Exhibits K-2, K-2-T and R-28 makes it abundantly clear that "real world" comparisons are often much more difficult.

been shown to be reliable in that the conclusions reached by those in the field have been shown to be the product of reliable technical or specialized principles or methods.

Respectfully submitted,

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Dated: July 26, 2006

**CERTIFICATE OF SERVICE**

I hereby certify that on July 7, 2004 I electronically filed the Government's Response to Defendant's Motion in Limine Regarding Expert Testimony on Footwear Comparisons with the Clerk of Court using the CM/ECF system which will send notification of such filing(s) to the following:

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mahone government's post daubert hearing response to defendant's  
motion to exclude footwear