IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF TENNESSEE
WESTERN DIVISION

UNITED STATES OF AMERICA,	)	
	)	
Plaintiff,	)	
	)	
v.	)	No. 2:09-cr-20317-JPM
	)	
JOHN LOVE,	)	
	)	
Defendant.	)	

ORDER DENYING DEFENDANT'S MOTION IN LIMINE TO EXCLUDE OPINION TESTIMONY

Before the Court is Defendant John Love's ("Defendant") Motion in Limine to Exclude Opinion Testimony (Docket Entry ("D.E.") 40), filed September 1, 2010. The Government responded in opposition on September 2, 2010. (D.E. 41.) Defendant filed a supplemental brief in support of its motion on October 28, 2010. (D.E. 50.) The Government responded in opposition to Defendant's supplemental brief on November 3, 2010. (D.E. 56.) The Court held a Daubert hearing on the admissibility of the opinion testimony on November 5, 2010. (See D.E. 59.)

The Government filed a second response in opposition to Defendant's motion on December 15, 2010. (D.E. 76.) Defendant replied on December 29, 2010. (D.E. 83.) A second Daubert

hearing was held on January 31 and February 1, 2011.[1] (See D.E. 90; D.E. 92.) For the following reasons, Defendant's motion is DENIED.

I. Background

Defendant is charged in a one-count indictment with possession of a firearm as a convicted felon, in violation of 18 U.S.C. § 922(g). On September 1, 2010, Defendant filed a motion in limine to exclude the opinion testimony of Brodhag regarding toolmark identification evidence.[2] (D.E. 40.) Defendant offers three arguments in support of its motion. These arguments are discussed below.

First, Defendant argues that the Government's disclosure is inadequate under Federal Rule of Criminal Procedure 16(a)(1)(G), which requires that the "summary provided [to Defendant] . . . describe the witness's opinions, *the bases and reasons for those opinions*, and the witness's qualifications." Fed. R. Crim. P. 16(a)(1)(G) (emphasis added); (Def.'s Mot. in Limine to Exclude Op. Test. ("Def.'s Mot.") (D.E. 40) 3.) The Government responds, inter alia, that it sent Brodhag's entire case file to

[1] Three witnesses testified at the second hearing: (1) Stephen Bunch ("Bunch"), former chief of the Federal Bureau of Investigation's firearms-toolmarks unit; (2) Special Agent Alex Brodhag ("Brodhag"), a firearms examiner for the Tennessee Bureau of Investigation ("TBI"), and (3) Special Agent Shelly Betts ("Betts"), a firearms examiner for the TBI. (See D.E. 94.)

[2] The underlying theory of toolmark identification is that "each firearm will transfer a unique set of marks, known as 'toolmarks,' to ammunition [bullets and cartridge cases] fired from that gun." United States v. Monteiro, 407 F. Supp. 2d 351, 359 (D. Mass. 2006).

Defendant by October 8, 2010. (Resp. of the United States to Def.'s Mot. in Limine to Exclude Op. Test. ("Govt.'s Resp.") (D.E. 56) 2.)

Second, Defendant contends that Brodhag's testimony should be excluded because toolmark identification evidence is inadmissible under Daubert v. Merrell Dow Pharms., Inc., 509 U.S. 579 (1993). (Def.'s Suppl. Mem. in Supp. of Mot. to Exclude Op. Test. ("Def.'s Suppl. Mem.") (D.E. 50) 3.) The Government counters that "there is a long history in American jurisprudence [of] the acceptance of [f]irearm and [t]oolmark identification evidence." (Resp. of the United States to Def.'s Pending Mots. (D.E. 76) 17.)

Third, Defendant argues that Brodhag's testimony should be excluded because his findings lack adequate documentation.[3] (Def.'s Suppl. Mem. 7-8.) Defendant contends that the absence of documentation prevents effective cross-examination. The Government responds that "Brodhag's proposed testimony . . . is reliable under [Federal Rule of Evidence] 703 and can be . . . test[ed] via cross-examination." (Govt.'s Resp. 9.)

II. Standard of Review

a. Rule 16

Federal Rule of Criminal Procedure 16(a)(1)(G) states:

[3] Alternatively, Defendant requests that Brodhag not be allowed to testify as to the strength of his conclusions. (Id. at 8.)

> Expert Witnesses - At the defendant's request, the government must give to the defendant a written summary of any testimony that the government intends to use under Rules 702, 703, or 705 of the Federal Rules of Evidence during its case-in-chief at trial . . . . The summary provided under this subparagraph must describe the witness's opinions, the bases and reasons for those opinions, and the witness's qualifications.

Fed. R. Crim. P. 16(a)(1)(G). The Advisory Committee Notes ("Notes") explain that "most important[ly], the requesting party is to be provided with a summary of the bases of the expert's opinion." Fed. R. Crim. P. 16 Advisory Committee Notes (1993 Amendment). The Notes emphasize that Rule 16 "cover[s] not only written and oral reports . . . but [also] any information that might be recognized as a legitimate basis for an opinion under Federal Rule of Evidence 703." Id. If a party does not comply with its Rule 16 obligations, the Court may, inter alia, "prohibit that party from introducing the undisclosed evidence." Fed. R. Crim. P. 16(d)(2).

b. Rule 702 and *Daubert*

Federal Rule of Evidence 702 provides:

> [A] witness qualified as an expert by knowledge, skill, experience, training, or education, may testify thereto 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 the case.

Fed. R. Evid. 702. Rule 702 was amended in 2000 after the Supreme Court's decisions in Daubert and Kumho Tire Co. v. Carmichael, 526 U.S. 137 (1999). Under Daubert, the trial judge acts as a gatekeeper to "determin[e] whether a proposed expert's testimony is . . . both relevant and reliable." Rose v. Truck Centers, Inc., 388 F. App'x 528, 533 (6th Cir. 2010) (citing Johnson v. Manitowoc Boom Trucks, Inc., 484 F.3d 426, 429 (6th Cir. 2007)).

A trial court's Daubert inquiry must focus "solely on the principles and methodology, not on the conclusions they generate." Daubert, 509 U.S. at 594-95. The Supreme Court has supplied a list of factors to guide the inquiry. They are:

> (1) whether a theory or technique . . . can be (and has been) tested; (2) whether the theory has been subjected to peer review and publication; (3) whether, with respect to a particular technique, there is a high known or potential rate of error and whether there are standards controlling the technique's operation; and (4) whether the theory or technique enjoys general acceptance within a relevant scientific community.

Johnson, 484 F.3d at 429 (quoting Daubert, 509 U.S. at 592-94) (internal quotations omitted). The above factors are not exhaustive, however. Kumho Tire, 526 U.S. at 150. Instead, the Daubert inquiry "must be tied to the facts of a particular case." Id.

III. Analysis

a. Rule 16

In order to resolve Defendant's Rule 16 argument, the Court must discuss the chronology of this case. The parties announced ready for trial on August 20, 2010. (D.E. 39.) The trial was set for September 2010. (Id.) On August 24, 2010, the Government sent Defendant an "Official Firearms Report" from the TBI that had been prepared by Brodhag. (Official Firearms Report (D.E. 40-1) 2-3.) The report was only a page-and-a-half long. (See id.) The report contained four sections: (1) the subject's name (John Love); (2) a list of exhibits; (3) Brodhag's results; and (4) the disposition. (Id.)

On September 1, 2010, Defendant filed a motion in limine to exclude Brodhag's testimony. (D.E. 40.) The Government, in its response to Defendant's motion, attached as an exhibit a letter from Brodhag summarizing his methodology. (See Sept. 2, 2010 Letter from Alex Brodhag to Alexia Fulgham (D.E. 41-1).) The letter concluded by stating that Brodhag "observed sufficient agreement . . . to conclude that the bullet in exhibit 1-b and the cartridge cases in exhibit 1-a had been fired from/in the pistol in Exhibit 3-a." (Id. at 2.)

On September 7, 2010, Defendant asked the Government to supplement its disclosure. Defendant sought additional information about "what Brodhag did in this particular case, how

he did it, and how he reached specific results." (Sept. 7, 2010 Email from Tatine Darker to Alexia Fulgham (D.E. 83-1) 1.) The Government eventually produced Brodhag's entire case file. (See Sept. 22, 2010 Email from Alexia Fulgham to Tatine Darker (D.E. 83-1) 3.) The file contained, inter alia, a sketch of the bullets' individual characteristics and a photograph of firing pin impressions from the cartridge cases. (See Feb. 1, 2011 Hr'g Ex. 1a, Official Firearms Report ("Case File") 6, 9.)

Rule 16 is unequivocal regarding the Government's duty to provide "the bases and reasons" for any opinion testimony that it intends to use in its case-in-chief. See Fed. R. Crim. P. 16(a)(1)(G) (noting that the "summary . . . *must describe* the witness's opinions, *the bases and reasons for those opinions*, and the witness's qualifications") (emphasis added).

The Government's initial disclosure failed to satisfy its Rule 16 obligation. The report sent on August 24, 2010 was only a page-and-a-half long. (See Official Firearms Report (D.E. 40-1) 2-3.) The report contained neither the bases nor the reasons for Brodhag's conclusions. See United States v. Davis, 514 F.3d 596, 612 (6th Cir. 2008) ("[I]f Davis had hired a chemist, he or she would not have been able to analyze the steps that led the government's chemists to their conclusions."). It was so terse as to be of only marginal utility to Defendant. Such a report is wholly deficient and does not comply with Rule 16.

If the initial report had not been supplemented by Brodhag's entire case file and two Daubert hearings, the Court would have been justified in excluding Brodhag's opinion testimony. The bases and reasons for Brodhag's opinions have become clearer after the hearings, however. Accordingly, the Court declines to exclude Brodhag's opinion testimony on the basis of the Government's alleged Rule 16 violation.

b. Rule 702 and *Daubert* Factors

1. Defendant's General Objection

The Court begins by rejecting Defendant's general objection to toolmark identification evidence. The reliability of toolmark identification evidence has been attacked by many commentators. See, e.g., National Research Council, Ballistic Imaging 3 (2008) ("The validity of the fundamental assumptions of uniqueness and reproducibility of firearms-related toolmarks has not yet been fully demonstrated."); see also Adina Schwartz, A Systemic Challenge to the Reliability and Admissibility of Firearms and Toolmark Identification, 6 Colum. Sci. & Tech. L. Rev. 1, 41 (2005) ("Adequate statistical empirical foundations and proficiency testing do not exist for firearms and toolmark identification."). Nevertheless, federal district courts routinely admit toolmark identification evidence in firearms cases. See United States v. Smallwood, No. 5:08-CR-38, 2010 WL 4168823, at *10 (W.D. Ky. Oct. 12, 2010) (excluding toolmark

identification evidence in a knife case and writing that "every [f]ederal court to consider firearms and toolmark[] [evidence] has decided that [it is] admissible"); see also United States v. Willock, 696 F. Supp. 2d 536, 549 (D. Md. 2010) (admitting toolmark identification evidence in a firearms case); United States v. Glynn, 578 F. Supp. 2d 567, 575 (S.D.N.Y. 2008) (same). Accordingly, the Court declines to hold that toolmark identification evidence is per se inadmissible under Rule 702 or Daubert.

2. Defendant's Specific Objection

The Court now turns to Defendant's specific objection that Brodhag's report "fails to comport with standards of documentation and peer review." (Def.'s Suppl. Mem. 6; see also Def.'s Reply to Govt.'s Resp. (D.E. 83) 7.) Defendant argues that (1) Brodhag failed to adequately document the reasons for his conclusions and (2) his conclusions were not systematically reviewed by another qualified examiner. (Def.'s Suppl. Mem. 7.) Defendant also argues that Brodhag's lack of documentation prevents effective cross-examination, in violation of the Confrontation Clause. The Court addresses Defendant's specific objection within the context of the Daubert factors.

A. Testability

Bunch testified that review of an examiner's results is crucial for high-volume laboratories. (Jan. 31, 2011 Hr'g Test.

of Stephen Bunch ("Bunch Test.").) Here, Betts testified that she conducted a technical review of Brodhag's work. (Feb. 1, 2011 Hr'g Test. of Shelly Betts ("Betts Test.").) According to Betts, the TBI's technical review process involves a second examiner (1) examining the evidence through a comparison microscope, (2) confirming (or rejecting) the original examiner's conclusions, and (3) reviewing the report and case file for errors. (Id.) Betts admitted that she could not remember whether she knew the results of Brodhag's examination before reviewing his work. (Id.) Betts concurred with Brodhag's conclusions and found no errors in the report or the case file. (Id.)

The TBI's Technical Procedures manual requires examiners to "explain their reasons for reaching [their] conclusions." (TBI Firearm and Toolmark Unit Technical Procedural Manual (D.E. 76-6) § 10.5.) Brodhag's case file contained a diagram of the bullets' individual characteristics (i.e., striations appearing on the land impressions of the bullets) and a photograph of firing pin impressions from the cartridge cases. (Case File 6, 9.) Brodhag explained that the notation "OBLITERATED" referred only to the top and bottom land impressions of the evidence bullet, not the test bullets. (Feb. 1, 2011 Hr'g Test. of Alex Brodhag ("Brodhag Test.").) He testified that the large purple dot on the fourth land impression served as an index mark for a

second examiner; thus, any examiner following Brodhag would know how to align the bullets underneath the comparison microscope based on the index mark. (Id.)

On cross-examination, Brodhag said that his decision to draw (rather than photograph) the bullets' individual characteristics was reasonable under the circumstances.[4] (Id.) Brodhag explained that he photographed the cartridge cases because the areas of agreement clustered around the firing pin impressions; this agreement was easier to convey to a subsequent examiner through a photograph. (Id.)

Bunch testified that Brodhag's diagram did not comport with the field's best practices. (Bunch Test.) Bunch acknowledged that he would have preferred that Brodhag's diagram be accompanied by a narrative. (Id.) Nonetheless, Bunch defended Brodhag's decision not to photograph the bullets' individual characteristics. (Id.) He stated that Brodhag's diagram contained sufficient information such that Bunch could have reproduced Brodhag's examination. (Id.)

Betts corroborated Bunch's testimony. She testified that TBI examiners typically document a match in one of three ways,

[4] Brodhag insisted that an identification may be made only after microscopic examination. (Id.) He was adamant that an identification may not be made on the basis of a narrative, a diagram, or a photograph. (Id.) The Court notes that the subjective nature of toolmark identification has been criticized. See Monteiro, 407 F. Supp. 2d at 370 ("[T]his threshold [for an identification] is currently held in the mind[']s eye of the examiner and is based largely on training and experience.") (internal quotations omitted).

either through a narrative, a drawing, or a photograph. (Betts Test.) Betts explained that the TBI laboratory has a significant backlog and stated that Brodhag's decision not to photograph the bullets' individual characteristics was likely a time-saver.[5] (Id.) Betts testified that Brodhag's diagram provided an adequate roadmap for her technical review of his work. (Id.)

Bunch and Betts said that Brodhag's documentation, while meager, would suffice as an acceptable guide to a subsequent examiner. (Bunch Test; Betts Test.) Moreover, Betts testified that she systematically reviewed Brodhag's results and reached the same conclusions as Brodhag. (Betts Test.)

In light of Bunch's and Betts' testimony, the Court concludes that (1) the method is testable and (2) Brodhag's documentation does not prevent effective cross-examination. The Court finds that the testability factor weighs in favor of admissibility.

B. Peer Review

Bunch testified that the Association of Firearm and Toolmark Examiners publishes a peer-reviewed journal, the AFTE Journal. (Bunch Test.; Feb. 1, 2011 Hr'g Ex. 7, Firearm & Toolmark Identification: Evaluation of Validity ("Bunch

[5] Betts also testified that TBI examiners are sometimes reluctant to document their conclusions with photographs because photographs might mislead juries. (Id.) The Court finds the TBI's stance on photographic documentation not scientifically based and, therefore, troubling.

Presentation").) Bunch identified other peer-reviewed journals that regularly publish articles on toolmark identification, including the Journal of Forensic Sciences and the Journal of Forensic Identification. (Id.) The Court finds that the peer review factor weighs in favor of admissibility.

C. Known or Potential Error Rate

Bunch testified that the error rate in the field is low. (Bunch Test.) He pointed to his 1995 article from the Journal of Forensic Sciences, "CTS Results Revisited: A Review and Recalculation of the Peterson and Markham Findings," which examined data from 1978 to 1991 and found that the false positive rate in examinations was 2.63%. (Bunch Presentation.) Betts testified that TBI examiners participate in proficiency tests conducted by Collaborative Testing Services ("CTS"). (Betts Test.) Betts stated that the TBI lab's error rate has been zero for many years.[6] (Id.) Brodhag testified that he has not erred during proficiency testing. (Brodhag Test.) The Court finds that the error rate factor weighs in favor of admissibility.

[6] The CTS proficiency tests are somewhat lacking in credibility for two reasons. First, an examiner knows that he or she is being tested. (Bunch Test; Betts Test.) Second, a finding of "inconclusive" does not count as an error. (Betts Test.) Accordingly, there may be an incentive not to find an identification or an exclusion. See Monteiro, 407 F. Supp. 2d at 367 ("There is also some variation depending on whether the incorrect conclusion that a result is 'inconclusive' is counted.").

D. General Acceptance in the Relevant Community

Despite the criticisms that have been lodged against toolmark identification evidence, the identification method that Brodhag used enjoys general acceptance within the relevant community of examiners. See United States v. Diaz, No. CR-05-00167, 2007 WL 485967 (N.D. Cal. Feb. 12, 2007); Monteiro, 407 F. Supp. 2d at 372. Bunch testified that the identification method used by Brodhag was consistent with that used by the great majority of examiners. (Bunch Test.) The Court finds that the general acceptance factor weighs in favor of admissibility.

All the Daubert factors weigh in favor of admissibility. Accordingly, the Court rejects Defendant's specific objection to Brodhag's opinion testimony. Nonetheless, Brodhag may not testify at trial that he is "absolutely certain" or "practically certain" as to his results. Bunch testified that absolute or practical certainty is impossible in toolmark identification. (See Bunch Presentation); see also United States v. Cerna, No. CR-08-0730, 2010 WL 3448528, at *5 (N.D. Cal. Sept. 1, 2010) (explaining that the "'practical certainty' standard . . . is not preferable"); Glynn, 578 F. Supp. 2d at 575 (concluding that an examiner should not be allowed to "overstat[e] the capacity of the methodology to ascertain matches"); Monteiro, 407 F. Supp. 2d at 372 (holding that an examiner may not testify that a

match is an "absolute certainty"). Accordingly, it would be inappropriate to permit Brodhag to testify that he is absolutely or practically certain as to his findings.

IV. Conclusion

For the foregoing reasons, Defendant's Motion in Limine to Exclude Opinion Testimony is DENIED.

IT IS SO ORDERED this 8th day of February, 2011.

/s/ Jon P. McCalla
JON P. McCALLA
CHIEF U.S. DISTRICT JUDGE