IN THE UNITED STATES DISTRICT COURT

FOR THE DISTRICT OF NEW MEXICO

UNITED STATES OF AMERICA,	)	
	)	
Plaintiff,	)	CR No. 10-2734 JCH
	)	
vs.	)	
	)	
JOHN CHARLES McCLUSKEY,	)	
	)	
	)	
Defendant.	)	

UNITED STATES' RESPONSE TO MOTION TO EXCLUDE FIREARM IDENTIFICATION EVIDENCE(Dkt. 418)

The United States of America opposes the defendant's Motion to Exclude Firearm Identification Evidence (Dkt. 418) and, as grounds therefore, submits the following:

FACTS

On August 4, 2010, law enforcement personnel were dispatched to the River Ranch outside Santa Rosa, New Mexico, in reference to a possible suspicious death. A burned out camper trailer was found there with human remains inside, which were later identified as belonging to Gary and Linda Haas of Oklahoma, who had been on an annual camping trip to Colorado. Their pickup truck was later located the same day in Albuquerque.

Within the pickup truck was a Bounty paper towel wrapper which was processed by the New Mexico Department of Public Safety (NMDPS) crime laboratory and found to have a latent fingerprint that belonged to Defendant. Defendant, as well as Tracy Province and Casslyn Welch, quickly became persons of interest in the disappearance and likely homicides of Gary and Linda Haas. At the time the camper and truck were found Defendant, Province and Welch were

the subjects of a nationwide manhunt as a result of a prison escape in Kingman, Arizona.

Province was arrested on August 9, 2010, in Meeteetse, Wyoming, and was found to be in possession of a 9mm handgun identified as belonging to Gary and Linda Haas. Province had also pawned a camera in Wyoming, which was identified as being registered to Linda Haas through the Canon warranty system.

On August 19, 2010, Defendant and Welch were arrested at Gabaldon Camp Ground in eastern Arizona. Welch was in possession of a .38 caliber handgun, identified as belonging to Gary and Linda Haas. Also found at the site was a .40 caliber Smith & Wesson handgun, which Defendant admitted to law enforcement was the murder weapon.[1] The caliber of this weapon matched the caliber of the casings discovered within the remains of the burned camper. A .45 caliber handgun also was taken into evidence following the arrests of McCluskey and Welch, which was later found to belong to Gary and Linda Haas.

Subsequently, the .40 caliber handgun, the other firearms recovered in this case, as well as the casings found within the burned camper, were presented for ballistics analysis to Katharina Babcock, an experienced, certified and highly-qualified firearms and toolmark examiner for the NMDPS. Ms. Babcock has specialized in the field of firearms and toolmark examination since 1999 when she joined the NMDPS Forensic Laboratory. In 2008, she became the Supervising Forensic Scientist of the Firearms and Toolmark Examination Unit, responsible for the direct

[1] Significantly, this caliber and weapon matched Defendant's subsequent confession, as well as statements given by the co-Defendants as to what gun was used to murder the Haases. All three fugitives, Defendant, Province, and Welch, agreed that Defendant took both Gary and Linda Haas into the camper trailer, had them sit at the dining table and then shot both of them with the weapon he was carrying, the .40 caliber Smith & Wesson handgun recovered with Defendant.

supervision of forensic scientists within the firearms unit. During her nearly thirteen years with the laboratory, Ms. Babcock has been responsible for, among other things, firearm and toolmark analysis and identification of weapons seized from crime scenes. Ms. Babcock is also currently responsible for maintaining quality control within the Firearms Unit, assuring accreditation compliance, maintaining and updating standard operating procedures, and providing training for law enforcement and other entities. Ms. Babcock is certified in Firearm Evidence Examination and Identification by the Association of Firearm and Toolmark Examiners (AFTE). She is one of approximately 100 certified examiners in the world.

In that capacity, she has taught Introductory Firearms and Toolmarks Identification and Preservation of Firearms and Toolmarks Evidence at the New Mexico State Police Academy in 2000, 2001, 2002, 2003, 2008 and 2009. Additionally she has presented for the Bureau of Alcohol, Tobacco, Firearms, and Explosives (ATF) in Washington, D.C. on "Flight Path Determinations Made at Crime Scenes and Why They Are Important" and "Cyanoacrylate and Firearms Identification." Ms. Babcock has been qualified as an expert in firearms and toolmarks analysis and identification numerous times in various courts.

Ms. Babcock received evidence on August 9, 2010, which included cartridge casings and possible bullets recovered from the burned camper. She performed a cursory inspection of the three cartridge casings and found them to be heavily charred. Ms. Babcock examined the casings (labeled G7, G11, and G13). As she examined G7, she could not determine what was on the headstamp utilizing a Leica MZ6 stereomicroscope. Although she cleaned the G7 casing with a soft bristled brush, she still could not visualize anything. Following another, more vigorous cleaning, however, she could then see the headstamp reading "BLAZER 40 S & W." She then

placed the casing in the ultrasonic cleaner hoping to remove more of the charred substance adhering to the casing.

She continued by inspecting casing G11, which also was heavily charred, but she could visually see the headstamp read "BLAZER 40 S & W." Once again, she cleaned the casing with water and a brush, then utilized a Leica MZ6 stereomicroscope. The composition of G11 is brass, the same as G7. Ms. Babcock then examined Casing G13. Again, she could visually determine the headstamp read "BLAZER 40 S & W," although this casing was heavily charred. She utilized the same cleaning process as she did with casings G7 and G11. Ms. Babcock also concluded that Casing G13 also had a brass composition.

BLAZER 40 S & W is the same brand and caliber of ammunition that was discovered within Defendant's weapon. The .40 caliber Smith & Wesson handgun found with Defendant at the time of his arrest was later provided to Ms. Babcock for examination. After ensuring any other evidence on the weapon was examined, she test-fired the .40 caliber Smith & Wesson (labeled IB22) with the same type of ammunition as determined to have been recovered from the burned camper. Using a comparison microscope, she examined all three crime scene casings to the test-fire casings. She was able to positively identify one of the casings (G13) as having been fired from that handgun. Her work was peer reviewed by Forensic Scientist Alina Sanchez. This was the same weapon Defendant told officers was the murder weapon.

The two remaining casings from the burned camper (G7 and G11) were found to be inconclusive with Defendant's weapon due to a lack of individual characteristics. Ms. Babcock did note some agreement in individual characteristics. All three casings were eliminated as being fired by any of the other firearms collected as evidence. Significantly, the only other .40 caliber

weapon involved in this case was eliminated due to no agreement of class characteristics.

Of the other evidence recovered from the burned camper and given to Ms. Babcock for analysis, item G3 was determined to be a heavily charred bullet. She determined it to be a .40 nominal caliber bullet based on diameter. After examination to determine whether G3 had been fired either by the .40 caliber Smith & Wesson handgun IB22 or a second .40 caliber Smith & Wesson firearm (IB72), (which was recovered at a later time) was forensically inconclusive. Ms. Babcock also test fired all of the weapons gathered in this case to receive comparison projectiles and casings. She found that all of the firearms functioned as designed.

Ms. Babcock took copious notes as this analysis was completed, including what she based her analysis on, her methodology and what led her to conclude that sufficient agreement existed that G13 was fired from Defendant's weapon.

ARGUMENT AND AUTHORITIES

A. Defendant has received all discovery required by Rule 16 and this Court's scheduling order

Defendant first seeks exclusion of any firearm examination testimony based on his (continued) allegation that the Government has been sorely inadequate in its summary of the foundational data within the expert witness notice. This matter has already been addressed in a motion by defense (Dkt. 292), responded to by the Government (Dkt. 332), the subject of a reply by defense (Dkt. 352) and addressed at a hearing before the Court on April 3, 2012. The summary was seemingly adequate at the hearing based on the supplemental filing (Dkt. 386) and the Government's agreement to continue the deadline for Defendant to file *Daubert* challenges. Any other foundational data contemplated by the Court in its scheduling order did not appear to

be extended beyond what is required by Rule 16(a)(1)(F) and (G). That said, the Government has gone above and beyond what is required by the Rule. The Government has either disclosed to Defendant, or has made available to him for inspection, everything that exists that is responsive to his "foundational" demand. It is difficult to imagine what else Defendant might want. He has photomicrographs of the analysis (which are actually comparison microscope images of breechface and firing pin marks) and detailed notes taken by Ms. Babcock during the analysis, which tell him what she relied upon when making the identification. Furthermore, all evidence is preserved and stored at FBI headquarters in Albuquerque and available to the defense for testing at any time. Instead, Defendant continues to request the Court to exclude expert testimony proposed by the Government based on the "failure" to provide "all foundational data." This brand of shell-game advocacy should cause the court to summarily deny the request for exclusion.

Rule 16 does not require the Government to provide Defendant copies of the SOPs, audits, manuals/protocols related to instruments, and any proficiency tests. However, the Government again has gone above and beyond what is required by providing these very documents. Rule 16 describes the Government's obligations for discovery. Of the seven paragraphs in Rule 16, the Government's obligations as to forensic tests are defined in two of them. The first pertinent section is Rule 16(a)(1)(F), which states, in relevant part, that "upon the defendant's request, the government must permit a defendant to inspect and to copy or photograph the results or reports of any . . . scientific test or experiment." The language is clear on its face. It requires the prosecution to turn over "results or reports" of scientific tests. *United States v. Dennison*, 937 F.2d 559, 565-66 (10th Cir. 1991). The Government discharged that

obligation when it provided copies of the report stating the conclusions reached by Ms. Babcock.

The second is Rule 16(a)(1)(G) which states, in relevant part, that "[a]t 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 and the bases for these opinions." In addition to all of the information mentioned above, the Government provided a summary of the testimony expected from Ms. Babcock, all foundational data, and the bases for her opinions, in the form of notes, evidence, photomicrographs, and testing procedures.

Any additional request into the lab's procedures or protocols is simply a fishing expedition for the purpose of attempting to challenge the manner in which the lab conducted its testing. Such a request is an abuse of the discovery process, especially in light of the fact that the Government has far exceeded its discovery obligations. The ultimate question for trial is not whether a defense expert would use the same or similar procedures adopted by the NMDPS, but whether the Government's results are reliable. The proper method to challenge this evidence is for the defense, through consultation with its expert, to cross-examine the government expert and call its own expert witness, not to seek wholesale discovery of internal government policy manuals and documents. If the evidence is deficient, the defense experts will be able to rebut the evidence at trial. Then the adversary system will have lived up to its obligation to frame the factual disputes in a fashion that lay juries are equipped to resolve. *See United States v. Willock*, 696 F.Supp.2d 546, 570 (Maryland 2010).

B. The mechanics of firearm identification analysis

Firearms, like other tools, are produced as a result of manufacturing processes. The theory of identification is premised on the proposition that tool manufacturing will result in unique markings on the tool at a microscopic level. Further, the theory posits that individual marks will be transferred to a bullet when the gun is fired. In a semi-automatic weapon, as the bullet is fired through the gun, the bullet will be jettisoned from the casing. The bullet will then continue through the barrel being expelled by force. The casing will be forced backward, leaving marks upon the casing, before being ejected from the chamber. The tool mark examiner will then visually, and by using a comparison microscope, examine a test bullet or casing, with the bullet or casing in evidence, to determine whether the individual markings show sufficient agreement to conclude that they were fired from the same gun.

In making the examination, the examiner distinguishes between class and subclass characteristics, which will be found in multiple firearms, and individual characteristics, which if sufficiently transferred, will be unique to a particular firearm. All of these characteristics exist because, during the manufacturing process, the manufacturer purposely cuts spiral grooves into the gun's barrel ("rifling") that help the bullet fly accurately once fired. After an examination of the bullet and the marks left upon it, the examiner can determine the weapon's "class characteristics": the caliber, the number of lands and grooves, the widths of lands and grooves and the direction of twist, and the rifling. Matching class characteristics is just the beginning however. Class is first determined, then sub-class, and individual. To make a comparison, an examiner will compare, for example, a casing recovered from a crime scene to a casing "test-fired" from a questioned weapon. If both casings present sufficient agreement in terms of individual marks, as well as random and microscopic flaws, then an examiner concludes that the

crime-scene casing was fired from the same weapon as the test-fire casing. Sufficient agreement exists when the casings, viewed through the eye of a trained and experienced examiner, evince a sufficient duplication of markings that they can be considered to be individual characteristics and that the likelihood another gun could have made them is so remote that, to a reasonable degree of scientific certainty, it can be discounted.

C. Defendant challenges the expert testimony as lacking scientific basis

Defendant seeks to exclude the testimony of Ms. Babcock for a variety of reasons, which include, (1) a failure to provide all underlying data as ordered by the Court, (2) that some of the photographic data disclosed are side by side comparisons without specific points of comparison disclosed; (3) toolmarks and firemarks are not unique nor are they permanent; (4) the firearm profession has yet to determine any error rate; (5) the Court should give as little weight as possible to the fact that firearms identification is generally accepted; (6) there is no peer review in the forensic firearm profession as envisioned by *Daubert;* (7) that firearms-related toolmarks are not unique and reproducible because this has not been proven as such scientifically.

Defendant relies heavily on Professor Adina Schwartz's affidavit and writings to discredit the theory of firearms and toolmark identification, even though the professor is not a firearm and toolmarks examiner. Ms. Schwartz claims to be conversant with the relevant literature, and it is her opinion that the discipline is hampered by systemic scientific problems, such as a lack of an objective standard for identification and inadequate statistical empirical foundations. However, she is admittedly *not* a neutral scholar on the topic of forensic firearms and toolmark identifications but rather is an advocate for an across-the-board exclusion of all testimony regarding firearm and toolmark identification. She takes the position that she has "a moral

responsibility to prevent the admission of firearms-related toolmark identification evidence." *United States v. Otero*, 2012 WL 893077 at *10 (D.N.J. 2012). Indeed, the Court found in *Otero* that her opinions were "substantially outweighed by the evidence supporting admissibility."[2] *Id.* at *11. Defendant attempts to perform the same sleight of hand as happened in *United States v. Taylor*, by introducing an expert who does not attempt to give an opinion about the results of Ms. Babcock's analysis, but rather to critique the entire field of firearms and toolmarks examination. 663 F.Supp.2d 1179 (D.N.M. 2009) (rejecting the testimony of Adina Schwartz due to no experience in the actual field).

Defendant also relies upon the discussions in the 2009 National Academy of Sciences, National Research Council, Committee on Identifying the Needs of the Forensic Science Community report entitled *Strengthening Forensic Science in the United States: A Path Forward* (the "NAS 2009 Report"). This report focused on the limitations and challenges of almost *all* forensic science disciplines except nuclear DNA analysis. (Id. at 12-13, 87). Indeed, the NAS report points out that toolmark identification tests "have never been exposed to stringent scientific scrutiny." *Id.* at 42. While there have been legitimate concerns raised in the report, as well as numerous critics of the science underlying the analysis of ballistic toolmarks, as the court noted in *Willock*, 696 F.Supp.2d at 568, "the defenders of the process - and every federal court to have examined the issue in a written opinion (albeit with considerable differences in the amount

---

[2]In *Otero*, District Court Judge J. Chesler, found that several cites within Dr. Schwartz's affidavit actually reached a different conclusion than that opined by Schwartz, including one by Stephanie Eckerman, *A study of Consecutively Manufactured Chisels*, AFTE Journal, Vol. 34, No. 4, Fall 2002, at 380, about which Dr. Schwartz actually quoted the study's ultimately unproven hypothesis as its conclusion. The Eckerman study actually disproved the hypothesis Dr. Schwartz was advocating to the Court.

of detail in the analysis) - have concluded that it is sufficiently plausible, relevant, and helpful to the jury to be admitted in some form." Even in *United States v. Glynn*, 578 F.Supp.2d at 573, the one court to determine "that toolmark identification is not a science, the court said that the theory that 'unique characteristics of each firearm are to an appreciable degree copied onto some or all bullets and casings fired from that gun ... is both plausible and sufficiently documented by experience as to provide a good working assumption for most practical purposes.'" The court in *Glynn* allowed the introduction of firearm toolmark identification, albeit with some limitations. *Id.* at 570.

The court in *Willock* summarized the ongoing debate in the literature as follows:

> "[E]ven were courts widely to accept, as at least one (*Glynn*, 578 F.Supp.2d at 570) has, that whatever firearms toolmark identification is, it is not 'science,' that would not presage the exclusion of all firearms toolmark identification evidence. That is because Rule 702 is not limited to admissibility of scientific evidence alone, but also governs 'technical' or 'specialized' evidence which, by necessity, does not meet the rigors of scientific analysis. *See Kumho Tire*, 526 U.S. at 141, 119 S.Ct. 1167; *Taylor*, 663 F.Supp.2d at 1173-74. Rule 702 permits introduction of technical or specialized evidence if it is given by qualified witnesses, based on sufficient facts, and produced through reliable methods that have been applied reliably to the facts of the case, so long as it is 'helpful' to the jury's understanding of the case or will assist the jurors in making their factual determinations.[3] Indeed, as Justice Scalia noted in his concurring opinion in *Kumho Tire*, the *Daubert* factors of testability, error rate, peer review, general acceptance, and adherence to standards governing the methodology are relevant to determinations of admissibility under Rule 702, but they are not "holy writ." *Kumho Tire*, 526 U.S. at 159.
>
> "And, as the *Taylor, Glynn, Diaz, Monteiro,* and *Green* courts have agreed, even with its increasingly obvious limitations, toolmark identification evidence is relevant, reliable, and helpful if offered (a) by a qualified examiner (b) who followed the AFTE theory of identification, (despite its subjectivity) and (c) who documents with notes, photographs, or sketches the conclusions reached in sufficient detail to permit (d)

---

[3] *See* Advisory Committee Note to Rule 702. The fields of knowledge which may be drawn upon are not limited merely to the "scientific" and "technical" but extend to all "specialized" knowledge. Similarly, the expert is viewed, not in a narrow sense, but as a person qualified by "knowledge, skill, experience, training, or education."

> confirmation by a second qualified examiner of how an identification was reached (and, at trial, challenge by a defense expert if one has been engaged for this purpose), so long as (e) the examiner is prevented from making outlandish and unsupported pronouncements about the degree of certainty of his or her identification."

Willock, 696 F.Supp.2d at 569 - 570.

All of the above requirements are met in this case. In addition to the general acceptance in legal proceedings for several decades there is more than adequate testimony to establish a base line level of credibility that tool marks are not "so random and volatile that there is no reason to believe that any similar and matchable marks exist on two exhibits fired from the same gun." *NRC Ballistic Imaging Report* at 81. Thus, the discipline of firearms and toolmark analysis is clearly specialized or technical under Rule 702, irrespective of whether it is also scientific. Consequently, the Court need not weigh in on the debate in the professional literature about whether the discipline is also a science. It is clear the testimony of Ms. Babcock satisfies the admissibility standards of *Daubert* and Rule 702. *See Willock*, 696 F.Supp.2d at 571.

D. The law of expert testimony

American jurisprudence on evidence rests upon a foundation of liberal admissibility and the conviction that the jury should be presented with any and all reliable evidence that will assist in its deliberation. See *Daubert v. Dow Pharm. Inc.*, 509 U.S. 579, 587 (1993). Rule 702 of the Federal Rules of Evidence, which governs the introduction of expert testimony, was drafted in accordance with the "liberal thrust" of the Federal Rules and their 'general approach of relaxing the barriers to opinion testimony.'" *Id.* (citing *Beech Aircraft Corp. v. Rainey*, 488 U.S. 153, 169 (1988). The Court made clear that Rule 702 was intended to expand the universe of admissible expert testimony beyond that which was previously allowed under *Frye v. United States*, 293 F.

1013 (D.C. 1923).[4]

The *Daubert* Court cautioned, however, that Rule 702 does not extend carte blanche to litigants to present unorthodox or unproven theories to juries as established "science." As the court noted, the text of Rule 702 itself calls upon the trial judge to act as gatekeeper and screen purported scientific evidence for reliability. *Daubert*, 509 U.S. at 589-90. Accordingly, the party offering the purported scientific testimony must either demonstrate that it represents "scientific knowledge" or it is the product of scientific reasoning or methods. *Id.* at 592-93.

With respect to the latter inquiry, the Court provided nonmandatory and nonexclusive factors for the trial court to consider: (1) whether the method consists of a testable hypothesis; (2) whether the method has been subject to peer review and publications; (3) the known or potential error rate; (4) the existence and maintenance of standards and controls; and (5) whether the method is generally acceptable within the relevant scientific community. *Id.* at 592-96 (envisioning flexible analysis when applying the above "Daubert factors").

In the wake of *Daubert,* confusion arose over whether its analysis was restricted to expertise in purely scientific disciplines, or should be applied to "technical or other specialized knowledge" under Rule 702. The Supreme Court's decision in *Kumho Tire Co. v. Carmichael*, 526 U.S. 137, 141 (1999), erased that distinction and held that *Daubert* applied not only to

---

[4] The following passage in the Court's *Daubert* opinion demonstrates this: "Vigorous cross-examination, presentation of contrary evidence, and careful instruction on the burden of proof are the traditional and appropriate means of attacking shaky but admissible evidence. In addition, in the event the trial court concludes that a scintilla of evidence presented supporting a position is insufficient to allow a reasonable jury to conclude that the position is more likely than not true, the court remains free to direct a judgment . . . These conventional devices, rather than wholesale exclusion under the uncompromising 'general acceptance' test, are the appropriate safeguards where the basis of scientific testimony meets the standards of Rule 702." *Id.* At 580.

strictly scientific disciplines, but to expertise based upon skill, experience, or observation as well. The Court in *Kumho Tire* instructed that the trial judge may consider *one or more* of the *Daubert* factors in performing the gatekeeping function under Rule 702. *Id.* The Court emphasized, however, that the *Daubert* factors do not comprise a *mandatory* checklist of requirements. *Id.*

On December 1, 2000, Rule 702 was amended in response to *Daubert* and *Kumho Tire*. The amendment adopted *Daubert's* general holding setting forth the trial court's role as gatekeeper, and *Kumho Tire's* holding that all types of expert testimony present questions of admissibility for the gatekeeper. The trial court must now examine "not only the principles and methods used by the expert, but also whether those principles and methods have been properly applied to the facts of the case." *See* Rule 702 advisory committee note.

In addition to the three stated requirements under former Rule 702 (type of knowledge, witness qualification, and helpfulness to the jury), amended Rule 702 now requires that three additional tests be met before opinion testimony can be admitted. First, the court must find that the expert testimony is based upon sufficient "facts or data," terms borrowed from Rule 703. In firearms identification cases, the expert normally relies upon facts derived from his or her firsthand observation made during the examination process. Subpart (1) of Rule 702 also requires that the facts and data be "sufficient." Determining sufficiency is a quantitative, not a qualitative analysis. *See* Rule 702 advisory committee notes. The quantitative sufficiency of the expert's basis for her testimony is part and parcel of the primary requirement of reliability established by Rule 702. *Id.*

The last two requirements encompass *Daubert's* concerns that an expert's opinion be based upon reliable theory and methodology, and that the theory and methodology have been

reliably applied to the instant case. Although the amended rule does not attempt to codify the specific factors set forth in *Daubert,* the standards in subparts (2) and (3) of the Rule are broad enough to require a trial court to consider *any or all* of the *Daubert* factors as appropriate, as well as other factors relevant in determining the reliability of expert testimony. *Daubert*, 509 U.S. at 589-90. (Noting five other factors courts have found relevant in determining whether expert testimony is sufficiently reliable to be considered). In this case, Ms. Babcock followed the reliable methodology of AFTE, she applied that methodology, and she was subject to peer review on her results.

E. *Daubert's* application of firearm identification analysis

There simply is no question that the field of firearm and tool marks examination has universal acceptance as a valid and reliable forensic science. For that reason, expert testimony regarding firearms evidence is widely accepted and routinely admitted. Defendant does not and cannot cite a single case, federal or state, in this jurisdiction or elsewhere, in which expert testimony regarding firearms and toolmark evidence was excluded. Numerous courts since *Daubert* and *Kumho Tire*, however, have held that firearms and toolmark evidence is reliable. Indeed, *United States v. Monteiro*, 407 F.Supp.2d 351, 364 (D.Mass. 2006) for decades, both before and after the Supreme Court's seminal decisions in *Daubert* and *Kumho Tire*, no federal court has ever deemed inadmissible the types of firearms identification testimony challenged by Defendant. *See United States v. Monteiro*, 407 F.Supp.2d 351, 364 (D.Mass. 2006). Moreover, federal courts have admitted this evidence often *without* applying the *Daubert* factors. *United States v. Hicks*, 389 F.3d 514, 526 (5th Cir. 2004)(in affirming the introduction of firearm identification evidence, the court noted that "[w]e have not been pointed to a single case in this

or any other circuit suggesting the methodology is ... unreliable."); *United States v. O'Driscoll*, 2003 WL 1402040, at *2 (M.D.Pa. 2003) ("the field of ballistics is a proper subject for expert testimony and meets the requirements of Rule 702"); *United States v. Davis*, 103 F.3d 660, 672 (8th Cir. 1996) (upholding the use of expert testimony to link bullets recovered from a crime scene to a firearm associated with the defendant); *Lauzon v. Senco Products, Inc.*, 270 F.3d 681 (8th Cir. 2001) (finding expert testimony on ballistics admissible based on *Daubert* factors after a preliminary hearing was held); *United States v. Foster,* 300 F.Supp.2d 375 (D.Md. 2004) (noting "the general reliability of the science of ballistics"; that "[b]allistics evidence has been accepted in criminal cases for many years"; and that "[i]n the years since *Daubert*, numerous cases have confirmed the reliability of ballistics identification"); *United States v. Taylor*, 663 F.Supp.2d 1179 (D.N.M. 2009) (concluding that "firearms identification testimony is admissible under Rule 702 and *Daubert*").

As another court found in rejecting a defendant's request for a *Daubert* hearing in firearm identification expert testimony:

> The Court has not conducted a survey, but it can only imagine the number of convictions that have been based, in part, on expert testimony regarding the match of a particular bullet to a gun seized from a defendant.... It is the Court's view that the Supreme Court's decisions in *Daubert* and *Kumho Tire* did not call this entire field of expert analysis into question. It is extremely unlikely that a juror would have the same experience and ability to match two or more microscopic images of bullets. In fact, in one recent opinion, the Supreme Court used the example of expert testimony on ballistics to provide a contrast to the marginal utility of polygraph evidence. The Court stated "unlike expert witnesses who testify about factual matters outside the juror's knowledge, such as the analysis of fingerprints, ballistics, or DNA found at a crime scene, a polygraph expert can supply the jury only with another opinion, in addition to its own, about whether a witness was telling the truth." *See United States v. Scheffer*, 523 U.S. 303, 312 (1998).

United States v. Santiago, 1999 F.Supp.2d 101, 111-12 (S.D.N.Y. 2002).

The testimony of firearms examiners such as Ms. Babcock has been a staple of criminal trials in this country for decades. The reliability of the science has long since passed beyond the point of serious challenge, within both the scientific and legal communities. *See Sexton v. State*, 12 S.W. 3d 517, 520 (Tex. Ct. App. 1999) (stating that the science of ballistics in general, and specifically the matching of toolmarks, enjoys wide acceptance in the scientific community); *State v. Futch,* 860 P.2d 264, 270 (Or. Ct. App. 1993) (ballistics comparisons are commonly admitted into evidence in criminal trials). Consequently, such testimony falls into that limited category of expert evidence as to whose reliability a court can and should take judicial notice. *See Goodyear Tire and Rubber Co. v. Thompson*, 11 S.W.3d 575, 578 (Ky. 2000) (courts may take judicial notice of reliability of ballistics evidence); *Schultz v. State*, 665 A.2d 60, 63 (Md. Ct. Spec. App. 1995) (same); *State v. Barker*, 366 S.E.2d 642, 644-45 (W.Va. 1988) (same). This Court, therefore, is entitled to take judicial notice of the reliability of the proffered expert ballistics testimony.

Kumho Tire instructs that the reliability of expert testimony does not turn on the grounding of the expert's opinion in scientific principles. Kumho Tire, 526 U.S. at 152. Rather, a district court has "considerable leeway in deciding in a particular case how to go about determining whether particular testimony is reliable."[5] *Otero*, 2012 WL 893077 (D.N.J.).

---

[5]As an example of how some courts determine reliability, the court in *Taylor* granted the Government's motion to exclude Professor Adina Schwartz's testimony at trial because the court found Schwartz was "not a firearms examiner" and "not qualified by knowledge, skill, training, education, or any other means to give opinion testimony in which she disagrees (or agrees, for that matter) with the specific conclusions of the Government's firearms examiner." — F.Supp.2d –, 2009 WL 6338569 (D.N.M.2009), at *3. Further, it "seriously question[ed] the reliability of her methodology." *Id.* at *7. Also, noting that it was not aware of "any case in

Further, *Kumho Tire* is clear that expert testimony related to specialized knowledge, or of a technical nature, can be admissible under Rule 702, as long as the proffered testimony satisfies the Court's test of reliability and relevance. *Id.* at 149; *see also United States v. Mitchell*, 365 F.3d 215, 234 (3rd Cir. 2004) (holding that "*Kumho Tire* extended *Daubert's* 'general principles' to all of 'the expert matters described in Rule 702' "and applying those principles to determine the admissibility of expert testimony on fingerprint identification).

F. Firearms testing has been subjected to empirical testing and is generally accepted within the field

A review of the sample body of available literature shows that the theory of firearm identification is scientifically sound, has been subjected to empirical testing, and is accepted within the field. The AFTE theory of toolmark examiners is the theory of toolmark identification used by Ms. Babcock and the NMDPS laboratory. This theory of toolmark comparison allows an examiner to conclude that two bullets or two cartridges are of common origin, that is, were fired from the same gun, when the microscopic surface contours of their toolmarks are in "sufficient agreement."

The sufficient agreement standard is as follows:

> This sufficient agreement is related to the significant duplication of random toolmarks as evidenced by a pattern or combination of patterns of surface contours. Significance is determined by the comparative examination of two or more sets of surface contour patterns comprised of individual peaks, ridges and furrows. Specifically, the relative height or depth, width curvature, and spatial relationship of the individual peaks, ridges and furrows within one set of surface contours are defined and compared to the corresponding features in the second set of surface contours. Agreement is significant when it exceeds the best agreement demonstrated between toolmarks known to have

---

which Dr. Schwartz was allowed to testify as an expert in front of a jury at trial," the court found that her trial testimony "would not be very helpful to the jury" and "would very likely confuse the jury." *Id.* at *6.

> been produced by different tools and is consistent with agreement demonstrated by toolmarks known to have been produced by the same tool. The statement that "sufficient agreement" exists between two toolmarks means that the agreement is of a quantity and quality that the likelihood another tool could have made the mark is so remote as to be considered a practical impossibility.

Otero, 2012 WL 893077 at *5 (quoting *Theory of Identification, Range of Striae Comparison Reports and Modified Glossary Definitions - An AFTE Criteria for identification Committee Report*, AFTE Journal, Vol. 24, No. 3, 1991, at 337).

Numerous studies have been conducted regarding the AFTE theory, which demonstrates that the theory is testable and has been tested.. *See, e.g.*, Ronald G. Nichols, *Firearms and Toolmark Identification Criteria: A Review of the Literature*, J. Forensic Sci., Vol. 42, No. 3, 1997, at 466; Ronald G. Nichols, *Firearm and Toolmark Identification Criteria: A Review of the Literature, Part II*, J. Forensic Sci., Vol. 48, No. 2, 2003, at 1. These studies have shown that tools can be individualized, even when marks are made by tools such as consecutive manufacture of various firearms of the same make. *See, e.g.*, Amy C. Coody, *Consecutively Manufactured Ruger P-89 slides*, AFTE Journal, Vol. 35, No. 2, Spring 2003, at 157 (the "Coody study"). This study examined whether "breechface marks on cartridge cases fired from consecutively manufactured slides are distinguishable and identifiable based on individual characteristics present on the breechface of each slide." *Id.* The study concluded there was a positive identification of the cartridge cases to their respective slides, despite the similar characteristics of the ten Ruger P-89 slides employed. *Id.* Other studies have examined consecutively manufactured barrels, including an internationally administered test involving consecutively rifled barrels, completed by 507 different examiners, resulting in 7,597 correct identificaiton

conclusions and no false positive conclusions. *See* James Hamby et al, *The Identification of Bullets Fired From 10 Consecutively Rifled Barrels*, International Forensic Laboratory and Training Centre, AFTE Journal, Vol. 41, No. 2, Spring 2009.

Numerous validation studies have also been done, with a focus on determining if distinguishable toolmarks made by firearms are reproducible, including whether over time the marks continue to be individualized to a particular firearm. One study by Robert J. Shem, *Comparison of 501 Consecutively Fired Bullets and Cartridge Cases from a .25 Caliber Raven Pistol*, AFTE Journal, Vol. 15, No. 3 (the "Shem study"), fired 501 rounds of one type of ammunition from one .25 caliber Raven Arms pistol. This study concluded that as to bullets, sufficient individual characteristics persisted to permit a positive identification (with acknowledgement that they do tend to erode), and it concluded that individual characteristics on the breechface markings remained unchanged. *Id.* at 109-110.

The *Journal of Forensic Sciences* is the official publication of the American Academy of Forensic Sciences (AAFS). It is devoted to the publication of the original investigations, observations, scholarly inquiries, and reviews of the various branches of the forensic sciences. All papers are reviewed. In a 1995 article, *Toolmark Examinations - A Review of Its Development in the Literature*, Journal of Forensic Science, Vol. 40, No. 6, November 1995, pp. 964-68, E. Springer presented a historical overview of the firearm toolmark identification literature and the evolution toward an objective standard for identification. The history begins in fragments around the turn of the past century and progresses to the 1930s, when Julian Hatcher published his seminal work (Textbook on Firearms Investigation, Identification, and Evidence). Hatcher explained the theory of identification based on uniqueness caused by the manufacturing

process. Although he spoke in terms of probabilities, he described his standard for a match in terms of "near perfect" or "near congruent" matches.

The article continues by noting that Alfred Biasotti brought considerably greater scientific and statistical rigor to identification in the 1970s. He analyzed two groups of guns and twelve hundred comparisons and showed the importance of "consecutive matching" striae or marks at a time when the "raw percentage" of such matches was the dominant descriptive language. More recent scholarship, according to Springer, has focused on the efficacy of technological advances in lasers, light-scattering measurement of surface typography, and software to provide an objective, automated method of toolmark comparison. Despite advances, the field continues to rely on a subjective match standard substantially informed by the training and experience of the examiner.

In *Firearm/Toolmark Identification: Passing the Reliability Test Under Federal and State Evidentiary Standards*[6], AFTE Journal, Spring 2003, Vol. 35, No. 2, Richard Grzybowski discusses the toolmark literature in support of the proposition that testimony by a properly trained expert meets the *Daubert* standard. He cites two papers by Ronald Nichols that summarize the scientific studies supporting the theory that, assuming no sub-class influence, (1) different firearms will produce discernibly different marks, despite some agreement and (2) the same firearm will produce toolmarks that can be identified with one another because they exhibit a greater degree of agreement than any known non-matching toolmarks. The AFTE Theory of Identification incorporates this theory into a standard for identification adopted in 1992.

---

[6] The Grzybowski article as well as the Hamby article referenced above will be provided under separate cover in reference to this response.

The article goes on to discuss the literature with respect to the various *Daubert* elements. With regard to error rates, they note that the Collaborative Testing Service ("CTS") conducts proficiency testing and publishes results from which error rates in practice may be derived, with certain limitations. For testing done from 1978 to 1991, the observed error rates, according to papers by Peterson and Markham and by Grzybowski and Murdock, are as follows: the error rate is 12% if an "inconclusive" response by an examiner is regarded as incorrect. If only incorrect responses are included, the error rate drops to 1.4%, which includes false eliminations. If false eliminations are excluded, the percentage of false identification is only 0.6%. More recent data suggest that from 1998 to 2002, the false identification rate is 1.0% or less. Limitations include the possible influence of uneven test administration, changes from year to year in test make-up and difficulty, and the fact that many labs were required by policy to report inclusive results because the firearm itself was not supplied. Grzybowski notes that internal controls and peer review likely further reduce the error rate for routine casework.

Gryzybowski describes the pre- and post- peer review process of articles published in the AFTE journal and the Journal of Forensic Science. Finally, Gryzybowski summarized the evidence in the literature that firearm and toolmark examination is generally accepted by the relevant scientific community.

G. The Court should follow the lead of *Taylor* and other districts that have given little weight to Defendant's "expert"

Rather than addressing the fact that no federal court has ever excluded ballistic expert testimony (*see Glynn,* supra), Defendant puts forth the affidavit of Professor Adina Schwartz in support of his arguments. The Court should give little, if any, weight to Schwartz's affidavit due

to her complete lack of expertise in the actual field of firearm examinations and the fact that her various claims and assertions have been rejected by courts that have considered them. As mentioned above, while she may be conversant in the literature, she is not a ballistics expert. To the best of the Government's knowledge, she has not held a position as a firearms examiner in any crime laboratory or law enforcement agency, never received training or been qualified as a firearms examiner, and never rendered an opinion with respect to whether bullets could be matched to a particular firearm. Significantly, Defendant does not offer the affidavit of a trained and experienced firearms examiner to challenge the reliability of the methodology employed by Ms. Babcock. More importantly, Defendant has not challenged Ms. Babcock's qualifications as an expert in the field of firearms and toolmark identification.

Professor Schwartz is a professor at John Jay College of Criminal Justice and The Graduate Center, City University of New York. She has testified and/or provided affidavits in several cases addressing the same issues as her affidavit states in this case. In *Diaz*, a case in which Mr. Burt served as defense counsel, Schwartz testified as a defense witness during a hearing to determine admissibility of ballistics evidence; in *Monteiro*, the defense submitted her affidavit; in *Taylor*, where Mr. Burt again served as defense counsel, Schwartz testified at a pre-trial hearing; and in *Otero*, she testified at a pre-trial hearing. Not one of those district courts allowed her to testify at trial. Moreover, each of these courts rejected her claims and admitted the expert testimony Ms. Schwartz sought to exclude. In *Monteiro*, and in *Taylor,* as in this case, the defense offered Schwartz's affidavit in which she made substantially the same claims she has made here. The *Monteiro* and the *Taylor* courts likewise rejected Schwartz's claims and held that the methodology employed by the Government's firearms and toolmark examiner was

reliable under *Daubert* and *Kumho Tire*. Consequently these courts concluded that the expert testimony offered by the Government was admissible under both *Daubert* and Rule 702. *Monteiro*, 407 F.Supp.2d at 372; Taylor, 663 F.Supp.2d at 1180.

With regard to Defendant's/Schwartz's claims that the methodology Ms. Babcock used is inherently subjective, the *Diaz*, *Monteiro*, *Taylor, Otero,* and *Willock* courts found that the mere fact that firearms identification is subjective in nature does not invalidate the methodology employed. *See Monteiro,* 407 F.Supp.2d at 363; *Diaz*, 2007 WL 485967 at *8-9; *Taylor* 663 F.Supp.2d at 1180; *Otero,* 2012 WL 893077 at *6; and *Willock*, 696 F.Supp.2d at 569-70. The process of determining whether a spent bullet or casing was fired by a specific firearm is based primarily on a visual microscopic inspection of patterns of toolmarks. As such, it is largely a subjective determination, albeit one founded on *scientific principles* and the examiner's training and experience. *Monteiro,* 407 F.Supp. *2d* at 363.

These courts also addressed Schwartz's complaint surrounding the absence of a known or established rate of error. In *Monteiro*, after reviewing relevant publications and considering relevant testimony, the court concluded that, due to the subjective and qualitative nature of firearm identifications, it was not possible to calculate an absolute error rate for routine casework but, nevertheless, found that the government established that the known error rate was not unacceptably high. 407 F.Supp.2d at 367-68. In *Diaz,* the court similarly agreed that, due to the subjective nature of firearms identification, it was not possible to calculate an absolute error rate. Nevertheless, the court concluded that based on peer-reviewed literature, proficiency testing, and testimony, that it was reasonable to infer that the error rate among trained examiners is quite low. *Diaz*, 2007 WL 485967 at *13-15.

H. The uniqueness proposition is unfalsifiable

Next, Defendant advances the not-so-novel proposition that "the uniqueness proposition supporting firearm identification is unfalsifiable." In fact, the firearms profession itself recognizes that establishing absolute uniqueness is largely impossible. The Government submits that if absolute uniqueness (as opposed to practical uniqueness) were necessary before an analyst could testify, very few if *any* disciplines would qualify for forensic use. Firearms analysts would have to test every gun on the planet, and DNA examiners would have to develop a genotype for every human. Further, attempting to require DNA-like probabilities as a condition of admissibility for toolmark analysis is misleading. "DNA identification is so different from firearm and toolmark identification that any analogies are intellectually inappropriate." Nichols, R., *The Scientific Foundations of Firearm and Toolmark Identification - A Response to Recent Challenges*, CAC News, Second Quarter, 2006. This is true because, unlike firearms examination, "DNA identification is based on a combination of subclass characteristics for which a statistical treatment is inherently necessary." *Id.*

Along similar lines, Defendant also complains that toolmarks and firearms are not unique nor are they permanent. This argument misses the point. As discussed above, the Government does not contend that toolmarks are absolutely unique. Whether they are permanent is largely irrelevant to a *Daubert* analysis and the proper subject of cross-examination. It is worth pointing out, however, that the test-fired casing obtained by Ms. Babcock was in all likelihood the first projectile fired by the seized weapon after the ones that killed Gary and Linda Haas. In other words, the casings retrieved from the camper and the test-fires (in all likelihood) were consecutively fired from the weapon in question. Because casings were consecutively fired, any

concerns about the weapon changing over time are misleading and irrelevant. Moreover, although Defendant likens Ms. Babcock's comparison between the three casings recovered from the burned camper to Defendant's firearm a "show-up" in that it creates a predisposition to find a match, Defendant fails to acknowledge that comparisons were done with all the firearms recovered in this case. Additionally, the fact that Ms. Babcock was not able to match two of those recovered casings with any of the firearms recovered shows there was no predisposition of a match.

Almost as an aside Defendant argues that Ms. Babcock should not be allowed to testify as to "inconclusive" results. (Dkt. 418 at p. 134). That argument is akin to asking a DNA analyst to not discuss analysis that resulted in finding human DNA on specific pieces of evidence, but not in sufficient quantity to complete further DNA testing. It is a request which cancels out a large portion of what the analyst did, which testimony is necessary to share with the jury the work that was conducted on this case, as it relates to the facts of the case. Indeed, the side-by-side comparisons show the work in surprising detail as to the points of comparison. To obscure these comparisons with red marks, as Defendant has suggested, would defeat the purpose of providing it as discovery so that an independent observation can be made.

Defendant also claims the Government cannot establish firearms leave equally distinctive traces of themselves in any environment and on any surface. In so doing, he cites a study on dust traces for the proposition that the government has the daunting responsibility of establishing the validity of Locard's Theory of Exchange (or transfer) as it relates to firearm identification. The Government is unaware of any court that has required a proponent of firearms analysis evidence to establish the validity of Locard's theory.

I. A *Daubert* hearing is unnecessary in this case

The Court should not order a *Daubert* hearing in this case. Contrary to Defendant's assertion that the Government has agreed that "the Court should hold an evidentiary evidentiary [sic] hearing to resolve the present motion." (Dkt. 418 at p.137), that is not the Government's assertion. Rather, the Government has repeatedly submitted to the Court that this motion does not require a hearing, in that the proper forum for Defendant to challenge Ms. Babcock's findings is at trial, before a jury, as each of his arguments go to the weight, not the admissibility, of the evidence. As has been repeatedly made clear, while the gatekeeping function requires the district court to ascertain the reliability of an expert witness's methodology, it does not necessarily require that a separate hearing be held in order to do so. *Kumho Tire*, 526 U.S. at 152 (district courts possess "latitude in deciding how to test an expert's reliability, and to decide whether or when special briefing or other proceedings are needed to investigate reliability"); *United States v. Nichols*, 169 F.3d 1255, 1263 (10th Cir. 1999) (pre-trial hearing on chemist testimony not required because the "challenged evidence does not involve any new scientific theory and the testing methodologies are neither new or novel"); *United States v. Williams*, 506 F.3d 151, 161 (2nd Cir. 2007) (separate hearing not necessarily required to determine the reliability of methodology); *United States v. Alatorre*, 222 F.3d 1098, 1102 (9th Cir. 2000) ("Nowhere ... does the Supreme Court mandate the form that inquiry into reliability must take ... "); *see also United States v. Crisp*, 324 F.3d 261, 268 (4th Cir. 2003) ("Under *Daubert*, a trial judge need not expend scarce judicial resources reexamining a familiar form of expertise every time opinion evidence is offered. In fact, if a given theory or technique is 'so firmly established as to have attained the status of scientific law,' then it need not be examined at all, but instead may properly be subject

to judicial notice); *United States v. Cooper*, 91 F.Supp.2d 79, 82 (D.D.C. 2000) (denying defendant's request for pre-trial evidentiary hearing with respect to, among other things, fingerprint expert testimony).

CONCLUSION

Based on the foregoing law, literature, and the fact that Defendant did not challenge the qualifications of Ms. Babcock, nor did he assert her testimony would not be relevant, the United States requests the Court deny without evidentiary hearing Defendant's Motion to Exclude Firearms Identification Evidence and Request for Daubert Hearing, and permit Ms. Babcock to offer expert testimony that will not only assist the jury to understand whether the casing retrieved from the burned camper was fired from the .40 caliber handgun that Defendant confessed to using to shoot Gary and Linda Haas, but also to discuss her overall analysis as it pertains to the facts of this case.

Respectfully submitted:

KENNETH J. GONZALES
United States Attorney

Filed Electronically
LINDA MOTT
GREGORY J. FOURATT
Assistant U.S. Attorneys
201 Third St., NW, Suite 900
Albuquerque, New Mexico 87102
(505) 346-7274

MICHAEL S. WARBEL
Trial Attorney
United States Department of Justice
Capital Case Unit

1331 F. St. NW, Rm. 346
Washington, DC 20004
(202) 514-5605

I HEREBY CERTIFY that I electronically filed the foregoing with the Clerk of the Court using the CM/ECF system which will send notification to Michael Burt and Theresa Duncan, Esqs.

/s/
LINDA MOTT
Assistant U.S. Attorney