

1 IN THE UNITED STATES DISTRICT COURT
2 FOR THE DISTRICT OF NEW MEXICO

3 UNITED STATES OF AMERICA,
4 Plaintiff,

5 vs.

CR-07-1244 WJ

6 DONALD SCOTT TAYLOR,
7 Defendant.

8
9 Transcript of Motion to Exclude Firearm
10 Identification Evidence, Re Docket Entry Number 277, before
11 THE HONORABLE WILLIAM P. JOHNSON , United States District
12 Judge, held in Albuquerque, Bernalillo County, New Mexico,
13 commencing on Thursday, September 3, 2009, at 9:00 a.m.

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1 MOTION TO EXCLUDE FIREARM IDENTIFICATION EVIDENCE

2 RE DOCKET ENTRY NUMBER 27

3 THE COURT: All right. We're back on record in
4 United States v. Taylor, 07-CR-1244. Counsel is present.
5 Defendant is present. We are here this morning to hear the
6 testimony of the government's firearm expert; is that
7 correct?

8 MS. NEDA: Yes, Your Honor. May I call him?

9 THE COURT: Sure.

10 MS. NEDA: United States calls Ronald Nichols.

11 LAW CLERK PHYLLIS AMATO: Would you raise your
12 right hand, please. Do you solemnly swear or affirm that
13 the testimony you're about to give in this case is the
14 truth, the whole truth, and nothing but the truth?

15 THE WITNESS: I do.

16 LAW CLERK PHYLLIS AMATO: Please be seated.
17 State your name for the record, please.

18 THE WITNESS: My name is Ronald Nichols.

19 RONALD NICHOLS

20 after having been first duly sworn under oath,
21 was questioned and testified as follows:

22 DIRECT EXAMINATION

23 BY MS. NEDA:

24 Q. How are you employed?

25 A. I'm currently employed as a firearm and tool mark

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1 examiner with the Bureau of Alcohol, Tobacco, Firearms &
2 Explosives.

3 Q. And where is your lab?

4 A. Our laboratory is located in Walnut Creek, California.
5 It services San Francisco and the western area.

6 Q. Briefly, would you describe your education, and then go
7 into your training that you rely on to operate as a
8 firearms examiner.

9 A. Sure. I graduated from the State University College of
10 New York at Buffalo, with a bachelor of science degree in
11 forensic science. I then was employed by a laboratory in
12 Contra Costa County, beginning in 1984.

13 With respect to my firearms training, it came
14 while I became employed with the Oakland Police Department.
15 I was employed there from 1999 to approximately the year
16 2000. It was there that I received extensive in-service
17 training with regard to firearm and tool mark
18 identification. It included performing a number of
19 training exercises; reading all the pertinent literature in
20 the field. And these training exercises were designed to
21 make me proficient in all the different areas in which I
22 would have responsibility as a firearm and tool mark
23 examiner.

24 I then took a series of proficiency tests, was
25 deemed qualified, and have ongoing literature that I become

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1 aware of. I attend regular training conferences, and I
2 also participate in regular proficiency testing.

3 Q. Okay. And do you hold any certifications in your
4 field?

5 A. Yes, I do.

6 Q. And what are they?

7 A. I hold a diplomate certification with the American
8 Board of Criminalistics. I also hold three certifications
9 with the Association of Firearm and Tool Mark Examiners,
10 otherwise known as AFTE. Those certifications are in
11 firearm evidence examination and identification, tool mark
12 evidence examination and identification, as well as gunshot
13 residue evidence examination and identification.

14 MS. NEDA: If I may approach the witness, Your
15 Honor?

16 THE COURT: You may.

17 Q. This is Government's Exhibit 1. Is it your curriculum
18 vitae?

19 A. Yes. It is the most current one.

20 Q. Does it accurately list all of your formal training
21 seminars you've attended, the publications that you've
22 authored, professional organizations you belong in, and
23 awards given to you in the field of firearm and tool mark
24 identification?

25 A. Yes, it does.

1 MS. NEDA: I ask that this be admitted into
2 evidence.

3 THE COURT: Any objection?

4 MR. BURT: No, Your Honor.

5 THE COURT: It will be admitted for purposes of
6 this hearing.

7 MS. NEDA: Okay.

8 (Government's Exhibit 1 admitted into evidence.)

9 Q. Can you give us a brief overview of the field of
10 firearm and tool mark identification? What's the purpose
11 of the field, and how do you obtain that purpose or reach
12 that goal?

13 A. Okay. Firearm and tool mark identification is a
14 discipline wherein we examine evidence that is related to
15 either tools or firearms, in an effort to determine whether
16 or not a particular tool or firearm, which is nothing more
17 than a specialized tool, made a particular tool mark.

18 That is the goal, to examine evidence from a
19 crime scene and try and determine if there's any tool marks
20 available, and whether or not those tool marks may have
21 been made by a particular tool. Or in the absence of a
22 tool, whether a same tool may be involved, or different
23 tools.

24 We base that work on over a century of work that
25 has been done in the field to establish whether or not we

1 can actually make that determination. There have been over
2 60 empirical studies that have demonstrated that we are
3 able to determine and distinguish between tool marks made
4 by the same tool and tool marks made by different tools.

5 Q. All right.

6 A. In addition, there are validation studies that have
7 demonstrated the same thing. So we are able to look at
8 tool marks from a crime scene -- as an example, maybe
9 striations on a bullet -- and compare those to striations
10 on other bullets, such as test fired bullets from a
11 suspected weapon, and we can look for a certain level of
12 pattern agreement.

13 If we feel that there is sufficient pattern
14 agreement, based on our training and experience, we know
15 that there is sufficient scientific background that allows
16 us to make calls of identification, such that we can say
17 that a particular tool mark or bullet was made by a
18 particular tool; or in this case, fired by a gun.

19 Q. Let's go through some of the terminology, just briefly.
20 Starting with class, can you inform the Court what class
21 is?

22 A. Sure. Class characteristics are those features of a
23 tool that are purposefully designed by manufacturers. In
24 the instance of a gun, that would include the number of
25 lands and grooves in a barrel; the width of those lands and

1 grooves; and the direction of twist. In addition, it would
2 include other things such as the breach orientation,
3 extractor and ejector marks, and the firing pin impression.

4 Q. All right. The rotation that's inside the barrel of
5 the gun that is purposely placed there by the manufacturer,
6 is that to not just propel the bullet, but to cause it to
7 turn through the barrel as it's moving out?

8 A. Yes. The purpose of the lands and grooves, otherwise
9 known as rifling, is to impart a spin onto the bullet so
10 that it has greater distance and accuracy and flight, much
11 like a spiral football.

12 Q. Okay. And as a bullet travels through the barrel and
13 picks up the markings of the rifling, the lands and the
14 grooves, does it also expand, itself, the bullet?

15 A. The bullet, itself, under a tremendous amount of
16 pressure, when it's fired and released from the cartridge
17 case from which it is originally a part of, it will expand
18 generally to fill the bore, and it creates a seal. And
19 that is so that there won't be a significant pressure drop
20 behind a bullet.

21 Q. Okay.

22 A. So yes, it does swell. It does fill the bore of the
23 barrel.

24 Q. All right. And in a nano-nanosecond, you could have
25 variance as to when the expansion takes place in the

1 bullet, itself?

2 A. Yes, you can. There may be slight variations and we're
3 talking a tremendous amount of pressure in the firearm,
4 itself. And in addition, the bullet does not necessarily
5 engage the rifling immediately. It is going forward under
6 such high pressures that sometimes it takes a little while
7 for the bullet to actually engage the rifling. And so what
8 can occur are what is referred to as slippage marks on the
9 surface of the bullet.

10 Q. All right. And if the bullet -- since each bullet
11 going through the barrel of a firearm may expand and in
12 its twisting in a minute nanosecond, at a nanosecond
13 difference, you will not always see exactly the same
14 markings on each bullet, even when fired from the same
15 firearm; is that correct?

16 A. That's correct.

17 Q. And we will see that later when we look at some images,
18 but my point being that if the bullet, itself, does not
19 expand to make sufficient contact on the barrel at that
20 particular narrow nanosecond, you may not see impressions
21 from the lands and grooves of the interior of the barrel?

22 A. There may be differences --

23 Q. All right.

24 A. -- in the individual markings that are placed on the
25 bullet.

1 Q. Now, what is a subclass characterization -- or
2 characteristic? Excuse me.

3 A. A subclass characteristic is less than a class
4 characteristic. It is not a design feature of a particular
5 tool; or in this case, the barrel of a firearm. But what
6 does happen upon occasion is the tool that is actually
7 manufacturing the barrel of the firearm can have a
8 significant defect on it. This defect can impart what
9 would appear to be an individual mark on the inside surface
10 of the barrel; that if the mark persists long enough, it
11 can be placed onto several barrels manufactured one right
12 after the other.

13 I'll also refer to them as consecutively
14 manufactured barrels.

15 Q. Okay. And the third characterization?

16 A. Individual characteristics.

17 Q. All right.

18 A. These are random in nature. And a combination of
19 individual characteristics will be unique to a given tool.

20 Q. And is that what the examiner looks at when they are
21 comparing patterns?

22 A. Specifically when comparing patterns? Yes.

23 Q. All right. Can a trained examiner tell the difference
24 between a subclass characteristic and an individual
25 characteristic?

1 A. Yes, they can.

2 Q. And how is that accomplished?

3 A. Subclass characteristics can be determined whether or
4 not they are present on the tool, if they extend from one
5 end of the tool to the other end of the tool. So they have
6 to extend for the full length of the tool. If they do not,
7 then by definition they are not subclass characteristics.
8 In addition, subclass characteristics are rather gross in
9 nature, and they tend to be very evenly spaced.

10 In addition, they are generally produced only
11 when metal is actually cut away from the surface of the
12 tool that is being formed. As an example, a broach, when
13 it is used to form rifling in a barrel, actually cuts metal
14 away from the barrel.

15 It has been demonstrated that subclass
16 characteristics can exist in a groove impression, which is
17 an area that is cut away by the broach. On the flip side,
18 or on the opposite side, a barrel that is suaged by a
19 button does not cut away any metal. And unless there is a
20 defect on the button, the only thing that occurs is a
21 polishing of the drilling and reaming marks on the inside
22 surface of the barrel which are actually perpendicular to
23 the bullet travel in the barrel.

24 Q. So in barrels tooled in the suage method, by the suage
25 method, you will not find what you have characterized as

1 subclass characteristics; is that correct?

2 A. Again, not unless there's a defect on the button,
3 itself.

4 Q. Okay. And with respect to the particular rifle in this
5 case, the Marlin Winchester -- it is a Marlin Winchester?

6 A. Yes.

7 Q. A 30-30? How was that tooled? Was that done via
8 broach, or was that done via suage?

9 A. I prepared a cast of the inside surface of the barrel
10 and observed reaming and drilling marks, which led me to
11 believe that it was suaged.

12 Q. All right. So you would not expect to see some
13 subclass characteristics in that, a bullet fired from that
14 particular rifle?

15 A. Not only would I not expect to see any, I did not
16 observe any.

17 Q. And we'll get to your specific observations in a few --
18 well, in a while.

19 MS. NEDA: Does the Court need any more
20 explanation on what a land and groove is?

21 THE COURT: No, but whatever you feel like you
22 need to make the record.

23 MS. NEDA: Okay.

24 Q. Then just real briefly for the record's purpose, so
25 it's clear, just give me a very brief definition what a

1 land is and what a groove is, and if you could move on to
2 striations.

3 A. Okay. A groove is the area of a bore that is cut out
4 or formed away. It is actually a depressed area on the
5 inside surface of the barrel. It will form a raised area
6 on a bullet.

7 Q. Uh-huh.

8 A. The land is the raised area inside the bore of a
9 firearm, and it will cause a depressed area on the surface
10 of a bullet. A striation is a mark which is essentially
11 the individual mark on a bullet or a striated tool mark.
12 And I should clarify. A striated tool mark is formed when
13 one object, which is the tool, moves across or there is a
14 motion of two surfaces against one another, such that a
15 striated tool mark which looks like a series of scratches
16 or lines is formed.

17 An impressed tool mark is when one surface comes
18 into hard contact with another surface, such as pressing a
19 pencil eraser into the palm of my hand. It forms a
20 negative duplicate of the tool that made that mark.

21 Q. And where does that occur with respect to firearms and
22 bullets, impressed?

23 A. It will not occur on bullets as they are fired through
24 a barrel.

25 Q. Okay.

1 A. Impression marks generally occur from the ejector.

2 Q. Uh-huh.

3 A. The firing pin, and the breach face on cartridge cases,
4 with respect to a gun.

5 Q. Where the explosion takes place?

6 A. Yes.

7 Q. But the sides of the bullet, itself, as it's traveling
8 through the rifling of the barrel, those are where you look
9 for striations or individual characteristics?

10 A. Correct.

11 Q. Okay. Now, you mentioned AFTE. Would you again tell
12 us what AFTE stands for?

13 A. AFTE?

14 Q. Yes.

15 A. That's the Association of Firearm and Tool Mark
16 Examiners.

17 Q. All right. And what is it?

18 A. It is an organization, an international organization of
19 individuals who have training in firearm and tool mark
20 identification, and it has approximately now over 750
21 members. And it also includes technical advisors, as well.

22 Q. All right. And must you be a member of law enforcement
23 in order to be a member of AFTE?

24 A. No. There are a number of private examiners who are
25 members of AFTE.

1 Q. But you can't just join AFTE by sending in a check; is
2 that correct?

3 A. That is correct.

4 Q. And how does one become a member? How does a firearm
5 examiner become a member of AFTE?

6 A. One needs to have the recommendation of two AFTE
7 members.

8 Q. All right. Does AFTE set out guidelines on how to
9 practice in your profession?

10 A. Yes, they do.

11 Q. Do they also set out or do they have an oversight on
12 ethics and the practice of examiners?

13 A. They do have an ethics committee and an oversight of
14 examiners who are actual members of AFTE.

15 Q. Do they investigate ethics charges against examiners?

16 A. Yes, they do.

17 Q. And do they publish findings?

18 A. If the ethics charges are founded, yes.

19 Q. Are you a member of AFTE?

20 A. Yes, I am.

21 Q. And you also testified that you have obtained various
22 certifications from them, as well?

23 A. Yes.

24 Q. AFTE has a theory of identification; is that correct?

25 A. That is correct.

1 Q. And is this what the examiners go by when trying to
2 ascertain whether or not they have a match?

3 A. Yes, it is their guideline.

4 Q. Is it set out in one of your publications, so we don't
5 need to read it into the record, I believe -- hold on a
6 second. You have it verbatim in one of your articles. I
7 was just going to see. Do you know which one it is?

8 A. I have a verbatim in the CACNews article.

9 Q. Okay.

10 A. As well as the Journal of Forensic Sciences article.

11 Q. All right. That's what I have in my hand. Okay. Now,
12 I'm going to -- we're going to talk more about these
13 publications, but at this point I just want to put them
14 into evidence.

15 MS. NEDA: If I may approach the witness?

16 Q. Here's Government's Exhibit 4. Can you tell us what
17 that is?

18 A. This is a copy of an article I wrote. It is entitled
19 The Scientific Foundations of Firearms and Tool Mark
20 Identification -- A Response to Recent Challenges. It was
21 published in the CACNews in 2006.

22 MS. NEDA: If I may move this article into
23 evidence as Government's Exhibit 4?

24 MR. BURT: 4, you say?

25 MS. NEDA: 4.

1 MR. BURT: No objection.

2 THE COURT: It will be admitted for purposes of
3 this hearing.

4 (Government's Exhibit 4 admitted into evidence.)

5 Q. Where in this article does the AFTE theory of
6 identification appear? Is that on Page 9? Is that right?

7 A. It appears in the second column of Page, 9 and it
8 continues on to the first column of Page 10.

9 Q. All right. Now, without reading this, since it is now
10 in the record, could you just paraphrase the theory of
11 identification promulgated by AFTE?

12 A. Basically, the AFTE theory of identification allows
13 opinions of common origin for opinions that two tool marks
14 were produced by the same tool when there is sufficient
15 agreement of unique surface contours.

16 Q. All right. Now, there is a traditional pattern or a
17 traditional method as a referred reference. Can you
18 describe what that is?

19 A. What we do, as firearm and tool mark examiners, when
20 we're comparing tool marks, we're looking for significant
21 pattern agreement. Patterns of striations would indicate
22 something that would not occur by mere chance. And by
23 that, simply I mean when we look at tool marks known to
24 have been produced by different tools, we expect to see
25 some coincident correspondence of striations. But it will

1 be isolated lines, one or two here and there, possibly
2 three.

3 But when we're looking for pattern agreement,
4 we're looking for a pattern of lines that is much more
5 extensive than just that, so we're looking for an actual
6 pattern.

7 Q. All right. And then what is CMS?

8 A. CMS?

9 Q. Yes.

10 A. CMS is an acronym for consecutive matching striations.
11 That is simply a way of describing the pattern that is
12 being observed, the pattern agreement that is being
13 observed. It is a numerical description, if you will, and
14 it applies to striated tool marks only, because it's
15 consecutive matching striations, and striations only occur
16 in striated tool marks.

17 Q. And what is the numerical criteria?

18 A. Basically, there are two different things we need to
19 consider with CMS. One: What is CMS? Again, it is just a
20 numerical description of the pattern agreement.

21 There is also a CMS criteria, and that CMS
22 criteria has been established as identifying the sufficient
23 correspondence needed to offer an opinion of common origin.
24 That criteria for three-dimensional tool marks is at least
25 two sets or two runs of three consecutive matching

1 striations, or one run of at least six.

2 Q. And again, these would be individual characteristics?

3 A. Yes.

4 Q. Have you written an article on consecutive matching
5 striations?

6 A. Yes, I did.

7 MS. NEDA: If I may approach?

8 Q. I'm showing you Government's Exhibit 6. Is this your
9 article?

10 A. Yes, it is a copy of it.

11 Q. Incidentally, this was published in the AFTE journal.
12 Is that a peer-reviewed publication?

13 A. Yes, it is.

14 MS. NEDA: I move into evidence Government's
15 Exhibit 6.

16 MR. BURT: No objection.

17 THE COURT: It will be admitted for purposes of
18 this hearing.

19 (Government's Exhibit 6 admitted into evidence.)

20 Q. Before a firearms examiner is permitted to function as
21 one at the ATF, what training on the job must he undertake?

22 A. Well, for ATF --

23 Q. Yes.

24 A. -- if that individual has received training from
25 another laboratory, they will come into the laboratory at

1 ATF, as I did.

2 Q. Okay.

3 A. They will receive supplemental training if it is deemed
4 necessary.

5 Q. Okay.

6 A. And then they will perform a series of competency
7 tests, which will determine their competency to examine
8 casework, using the methods and procedures that are in
9 place at ATF.

10 Q. What about one coming right out of college?

11 A. They will go through a training program. Typically,
12 the training program for ATF examiners would include being
13 a member of the National Firearm Examiners Academy, which
14 is held in Ammendale, Maryland. That academy deals with an
15 introduction to the field of firearm and tool marks, a very
16 significant introduction. It is typically a year long,
17 with at least 15 to 16 weeks on-site in Ammendale,
18 Maryland.

19 And that on-site training will include training
20 in how to examine bullets; how to examine cartridge cases;
21 other tool marks; how to compare them; different tours and
22 what-have-you.

23 However, once they come back to the laboratory,
24 they will also receive more training in each of those areas
25 which will include a number of hours on the microscope,

1 comparing bullets and tool marks made by the same tool, and
2 comparing bullets and tool marks known to have been made by
3 different tools. And that's so that they can establish a
4 baseline for which they can say, again, there will be
5 coincident correspondence of striations in bullets fired
6 from different guns. And as a result we have to have an
7 appreciation for how much that may be.

8 We do that by examining a number of tool marks
9 made by different tools or bullets fired from different
10 guns. That helps us to establish a baseline above which we
11 feel confident that if we see a pattern of correspondence,
12 we can conclude that they were fired from the same gun.

13 They would then undergo a series of proficiency
14 tests and competency tests and ongoing proficiency
15 testing.

16 Q. And moving into the ongoing proficiency test, what, for
17 instance, do you, as an ATF firearms examiner, undergo
18 periodically to maintain your proficiency?

19 A. To maintain my proficiency, I attend training
20 conferences. I read the relevant literature as it's being
21 published. In addition, my proficiency is tested through
22 annual proficiency tests -- one for firearms; one for tool
23 marks other than firearms; and actually a third in gunshot
24 residue, which I participate in for the purposes of my
25 certification.

1 Q. Now, with respect to the proficiency test, it's
2 provided to the ATF examiner not in-house but by a company;
3 is that correct?

4 A. The one for the bullets and the tool marks are provided
5 by a private company.

6 Q. The company is?

7 A. Collaborative Testing Services, also known as CTS.

8 Q. All right. And in your proficiency testing, did you
9 pass them all?

10 A. Yes, I have.

11 Q. Now, in addition to proficiency tests, when an examiner
12 actually conducts an examination after the lengthy hours of
13 training under the comparison microscope, etc., what, in
14 addition to making their own observations, do they do? In
15 other words, start with documentation. What do they do?

16 A. For our notes, we make narrative descriptions of what
17 we're observing with regards to the bullets, the firearms,
18 and the comparative results. We then also take photo
19 documentation or photomicrographs of any areas which we
20 feel to be compelling, whether it is for purposes of
21 exclusion or identification.

22 Q. And does that comport with the guidelines of AFTE?

23 A. AFTE does not require photo documentation. The ATF
24 does require photo documentation, especially in instances
25 of identification and, where necessary, for purposes of

1 exclusion.

2 Q. So in addition to narrative documentation the ATF
3 prepares microphotographs of their observations in the
4 comparison microscope?

5 A. Yes.

6 Q. And did you do that, as well, in this case?

7 A. Yes, I did.

8 Q. And once an examiner has completed his or her
9 examination, does he have a peer examine results?

10 A. A peer will review our case notes and our report to
11 determine whether there is sufficient documentation to
12 support the conclusions that were reached.

13 Q. And does that comport with AFTE's guidelines, to have a
14 peer review one's work?

15 A. AFTE's guidelines are that a certain percentage of
16 casework should be peer-reviewed.

17 Q. All right. So not every examination needs to be
18 peer-reviewed under the AFTE guidelines?

19 A. Correct.

20 Q. But in ATF's Lab, you do have a peer review after each
21 examination?

22 A. That is also correct.

23 Q. And that was done in this case, as well?

24 A. Yes.

25 Q. So we'll just go right back to CMS for a moment. I

1 meant to cover one aspect of consecutive matching
2 striations and using that method in addition to or as an
3 extension of the traditional pattern matching. Am I
4 characterizing that right, that it's a mere extension of
5 the traditional pattern matching?

6 A. You characterized it in part correctly.

7 Q. Okay.

8 A. You began by saying that it's a method that is actually
9 an extension of a method. CMS by itself is not a method.
10 CMS is simply a characterization, a numerical model, if you
11 will, of the pattern that we're observing.

12 Q. And that being the six striations, or the two pairs of
13 three?

14 A. No.

15 Q. Okay.

16 A. Because it could be eight. It could be twelve. Or it
17 could be two. Consecutive matching striations is simply a
18 numerical descriptor of the pattern that we are observing.

19 Q. All right.

20 A. You were mentioning the criteria.

21 Q. Okay.

22 A. So in essence, those who use pattern matching and those
23 who use CMS are doing the same thing. We're looking for
24 pattern agreement. Those who use CMS choose to describe
25 that pattern in forms of numbers.

1 Q. Is it a more conservative approach?

2 A. I believe it to be a more conservative approach, yes.

3 Q. So if examiners don't apply it, it's not because of its
4 lack of accuracy, but it's an unnecessary, conservative
5 approach to determining whether or not a match exists
6 between two bullets?

7 MR. BURT: Object to the leading.

8 THE COURT: I'm sorry?

9 MR. BURT: Object to the leading.

10 THE COURT: Rephrase it.

11 MS. NEDA: I can ask without leading if it's
12 really important, with no jury.

13 Q. (By Ms. Neda) Did you understand my question? Because
14 maybe I should just give it back to you. Do all examiners
15 use CMS?

16 A. No, they do not.

17 Q. And why is that so?

18 A. They do not use the CMS criteria, from my discussions
19 with examiners who do not use the criteria, because they
20 believe it to be overly conservative, and they are
21 concerned that they will miss identifications if they have
22 to apply that criteria to their examinations.

23 Q. So is the concern that you will have more inconclusives
24 if you use the more conservative approach, that being CMS?

25 A. Yes.

1 Q. And you mentioned a pattern of six as a criteria, and a
2 pattern of two sets of three as a criteria. Who
3 established that pattern criteria?

4 A. That criterion, which again is for three-dimensional
5 tool marks, was established and first published by John
6 Murdock and Alfred Biasotti in 1997 in Modern Scientific
7 Evidence, which is edited by Michael Saks, among others.

8 Q. And do you follow that recommendation by Biasotti and
9 Murdock?

10 A. Yes, I do.

11 Q. You keep saying three-dimensional. Are you making a
12 distinction between an examiner who's looking at the actual
13 bullet under a comparison microscope, versus looking at
14 photographs?

15 A. That would be one example, yes.

16 Q. Now let's turn to the National Research Council's
17 committee, and I guess it was -- the mission was set out by
18 the National Academy of Science?

19 A. Yes.

20 Q. First, if you would address the 2008 committee report
21 just very briefly. What was its mission?

22 A. The mission was to determine whether or not a ballistic
23 imaging database or a computer database could be
24 established, into which we could input images from bullets
25 and cartridge cases on a nation-wide level, so that we

1 could obtain potential hits or matches, if you will, when
2 we would also input bullets or tool marks from crime
3 scenes.

4 Q. And the committee was formed by what type of experts?

5 A. The committee was typically formed by individuals who
6 were very knowledgeable in computers, computer software,
7 and statistics.

8 Q. Were there any firearm examiners on the committee?

9 A. No. In fact, the committee stated that they chose to
10 form the committee knowingly not including a firearm and
11 tool mark examiner.

12 Q. So then you disagree with Dr. Schwartz, who said there
13 was a firearms examiner on the committee?

14 A. I do disagree.

15 Q. And the chairperson of that committee -- yes, the
16 chairperson of that committee was who?

17 A. Dr. John Rolfe.

18 Q. And ultimately, he prepared an affidavit -- in fact, a
19 series of them appears -- that followed the conclusions of
20 the 2008 ballistic imaging report by the NRC committee; is
21 that correct?

22 A. Yes, he did.

23 Q. Can you tell us what the affidavit's purpose was?

24 A. The affidavit's purpose was to clarify for the Court
25 that the NRC report on ballistic imaging was not meant to

1 determine whether or not firearm and tool mark
2 identification was actually founded on scientific
3 grounds.

4 MR. BURT: I'm going to object, just based on
5 hearsay and confrontation.

6 THE COURT: Overruled.

7 A. The purpose of the committee was to look into, and the
8 entire context of the report, is in the context of the
9 purpose of ballistic imaging. And there are concerns
10 that they recognized, that ballistic imaging may have,
11 that firearm and tool mark examiners may not typically
12 have.

13 Q. Then Dr. Schwartz spoke of a 2009 NRC committee report.
14 What was its mission?

15 A. The mission was to examine forensic science, in
16 general, and to offer suggestions on how forensic science
17 can be strengthened.

18 Q. Did it touch on a firearms and tool marking
19 identification?

20 A. Yes, it did.

21 Q. However, were there any firearm examiners on that
22 committee?

23 A. Not on the committee, no.

24 Q. Did it give some floor time to a firearms examiner,
25 however? Did the committee listen to a firearms examiner?

1 A. Yes, they did.

2 Q. And who was that person that was committed to present
3 to the committee?

4 A. That individual is Peter Striupaitis. He is a private
5 examiner formerly with Illinois.

6 Q. S-T-R-I-U- --

7 A. S-T-R-I-U-P-A-I-T-U-S.

8 Q. All right. And how much time did they permit him to
9 speak?

10 A. Approximately they allowed him to speak for one hour in
11 conjunction with someone else.

12 Q. Did the NRC refer to both of the literature and the
13 subject of firearm examination and tool mark
14 identification?

15 A. I cannot be confident of what they actually looked at,
16 other than what they actually cited as footnotes in their
17 three to four pages on firearms and tool marks.

18 Q. And how many articles did they cite?

19 A. I believe six, possibly seven.

20 Q. And was Dr. Schwartz's article one of them?

21 A. Yes.

22 Q. And was your article one of them?

23 A. Yes.

24 Q. Now, for a true view of the pros and cons of your
25 field, would one have to rely on more than the six or seven

1 that apparently were cited in the 2009 general report by
2 the NRC committee?

3 A. Yes.

4 Q. This committee not only critiqued negatively your
5 field, but they critiqued negatively a variety of other
6 fields; is that correct?

7 A. Yes, it did.

8 Q. And that included bite marks?

9 A. Yes.

10 Q. Footprints?

11 A. Yes.

12 Q. Tire marks?

13 A. Yes.

14 Q. Anything else?

15 A. Fingerprints.

16 Q. Fingerprints. Of course. The most important thing.
17 Fingerprints. Now, if one were to do a thorough
18 investigation of the literature pertaining to the litany
19 of your field, who are some of the authors that one must
20 read?

21 A. There are a number of authors that have done -- that
22 have raised concerns about various variables or issues that
23 may impact one's ability to correctly identify tool marks.
24 And those individuals have published, as I said, in excess
25 of 60 articles. There's a number of different authors.

1 Because I would always want to look at the original study.
2 The studies have been primarily published in the AFTE
3 journal, as well as the Journal of Forensic Sciences.

4 Q. Would one be like Mr. Biasotti, for instance?

5 A. He would be one of the more prominent ones, as would be
6 John Murdock, Bruce Moran, and myself.

7 Q. All right. And all these four, including yourself,
8 what you published are self-examination of your field; is
9 that correct?

10 A. That is correct.

11 Q. And is the purpose to improve your field?

12 A. Absolutely.

13 Q. All right. Was the ultimate conclusion in any of these
14 articles that the science, itself, was invalid?

15 A. No.

16 Q. As a matter of fact, Mr. Biasotti -- did he practice as
17 a firearms examiner throughout his life after his first
18 publications in the 1950s?

19 A. Yes, he did.

20 Q. And does Mr. Murdock continue to practice as a firearms
21 examiner?

22 A. Yes, he does.

23 Q. And you still do?

24 A. I still do.

25 Q. And Mr. Miller?

1 A. Mr. Jerry Miller?

2 Q. Yes.

3 A. Yes, he does, as well.

4 Q. And what about Bruce Moran?

5 A. He does, as well.

6 Q. You reviewed Defendant's Exhibit B, which is the
7 article authored by Adina Schwartz, called Systemic
8 Challenge to Reliability and Admissibility of Firearms and
9 Tool Mark Identification?

10 A. Yes, I did.

11 Q. And in doing so, after reviewing this, you also
12 published an article; is that correct?

13 A. That is correct.

14 Q. And I think we've already offered that or put that into
15 evidence as Government's Exhibit 4, The Scientific
16 Foundations of Firearms and Tool Mark Identification -- A
17 Response to Recent Challenges?

18 A. Yes.

19 Q. All right. What was the point of your publication?

20 A. The point of the publication was, after reading Dr.
21 Schwartz's publication that was published in the Columbia
22 Science and -- STLR -- Science and Technology Law Review --
23 I found a number of instances where the literature had
24 either been misquoted, misparaphrased, or completely taken
25 out of context, to support an opinion that I did not

1 believe nor did the firearms community believe was a valid
2 opinion, and that was that firearm and tool mark
3 identification did not rest on scientific foundations, and
4 that it should not be permitted in a court of law.

5 Q. You heard me ask Dr. Schwartz if any professional
6 firearms examiner agreed with her point of view, two days
7 ago in court?

8 A. Yes, I did.

9 Q. And she did say there was one person, and that's Martin
10 Dante, right?

11 A. Correct.

12 Q. Do you know who Martin Dante is?

13 A. Yes, I do.

14 Q. So this one person that testified agreed with her point
15 of view, is he in fact an experienced firearms examiner?

16 A. Not that I am aware of.

17 Q. As a matter of fact, isn't he a general investigator
18 with the San Bernardino County Public Defender's Office?

19 A. Yes, he is.

20 Q. Do you know Mr. Dante?

21 A. I have spoken to him.

22 Q. Has he ever expressed an agreement with Dr. Schwartz's
23 opinions?

24 A. No, he has not.

25 Q. Now, you know Bruce Moran and John Murdock personally,

1 do you not?

2 A. I do.

3 Q. And you've known them through many years?

4 A. I have.

5 Q. Do you know whether or not they agreed with Dr.
6 Schwartz's opinion with respect to the validity of the
7 science?

8 A. I am certain that they do not.

9 Q. Agree with it?

10 A. Correct.

11 Q. All right. Now, you said the purpose of your article,
12 which is Exhibit 4, was to set out in detail her
13 mischaracterization and paraphrasing and taking quotes out
14 of context?

15 A. Yes.

16 Q. Did she also simply omit huge bodies of literature that
17 were pertinent to the field?

18 A. Yes.

19 Q. And we won't go into that now, but a few examples is a
20 detailed article -- we're not going to take up the Court's
21 time -- that was admitted into evidence, but I do at this
22 time want you to focus on maybe no more than four points,
23 perhaps.

24 A. Okay.

25 Q. Which clearly demonstrate your position that Dr.

1 Schwartz's critique of the field is not an unbiased one, I
2 should say.

3 A. Okay.

4 Q. Go right ahead.

5 A. Well, probably one of the more flagrant ones can be
6 found on Page 15 of this article.

7 Q. Your article?

8 A. Yes. And again, that's probably one of the most
9 flagrant ones.

10 Q. Okay.

11 A. On Page 15 of my article I cite Footnote 64. And if I
12 may, Your Honor, read -- if I may actually read from the
13 article?

14 Q. Yes.

15 A. It says in Footnote 64: "Schwartz writes, 'Changes in
16 manufacturing processes are likely to increase the risk of
17 misidentifications resulting from the confusion of subclass
18 with individual characteristics'."

19 She pulls this quote from an article by Stephanie
20 Eckerman that was published in 2002. The quote is actually
21 from the introduction of Eckerman's paper, and it is formed
22 as a hypothesis which Eckerman's paper and study would
23 actually test. And in that article, she actually falsified
24 the hypothesis, and that was never appreciated nor was that
25 ever cited by Dr. Schwartz.

1 In fact, Eckerman says that results -- on the
2 very same page that that statement can be found, Eckerman
3 says that, "Results showed that each ground chisel produced
4 individual and identifying characteristics, and that there
5 was no carry-over of features due to the finishing process
6 between consecutively finished tools."

7 Q. All right. So to summarize what you just said, so it's
8 clear, Dr. Schwartz quoted the hypothesis to be tested by
9 Ms. Eckerman as a fact?

10 A. Yes.

11 Q. And yet, that hypothesis was actually disproved by
12 Ms. Eckerman during the test, itself?

13 A. Yes.

14 Q. I don't think I need to go through all the other
15 aspects of her mischaracterization.

16 Also in evidence is Government's Exhibit 1.
17 Bruce Moran's declaration demonstrates the same type of
18 thing. But I would like to go on to speak a little bit
19 more about the proficiency tests offered by the CTS. Would
20 you at least agree with Dr. Schwartz that they do not
21 precisely represent the real world?

22 A. They do not.

23 Q. And tell us why that is.

24 A. There are many limitations with regards to the
25 proficiency tests that crime laboratories participate in.

1 One, they are distributed on a wide basis. And in order to
2 validate the proficiency test as being accurate
3 representations whether or not examiners can get the
4 correct answers, that large batch of tool marks or bullets
5 or cartridge cases has to be actually examined by a firearm
6 and tool mark examiner.

7 Because not every sample can be examined, they
8 have to test a subset of that. They are generally a little
9 bit easier than we would expect to see in normal casework.
10 They're not as challenging. In addition, the tool marks in
11 the bullets in the cartridge cases are received in pretty
12 good condition, nearly pristine condition. And oftentimes
13 the bullets or tool mark evidence that we will get from
14 crime scenes can be damaged.

15 In addition, other limitations include that
16 anybody can purchase the CTS test.

17 Q. Before we get to that -- and that's a very important
18 point. But before we get to this, up to this point what
19 you are describing is the need for CTS to standardize its
20 test, so it must make some compromises?

21 A. Yes.

22 Q. And before we get to what you were just saying --

23 A. Sure.

24 Q. -- there were some calculations done on proficiency
25 tests and air raids, one in 1995, and then a recalculation

1 in 2003. Can you very briefly explain that.

2 A. In 1995, Joseph Peterson and Markham -- I don't know
3 what his first name is -- published a study where they
4 reviewed proficiency testing for the variety of forensic
5 sciences disciplines, and they defined an error rate that
6 was relatively high, and the reason being is because they
7 included inconclusive results as errors.

8 In 2003, when we were examining error rate to try
9 and provide in the literature some sort of potential error
10 rate upon which courts may at least in part rely to see how
11 often the discipline using accepted methods and procedures
12 can make a false identification, what we demonstrated was
13 that for that purpose, defining error rate in that manner,
14 that the error rate for firearm and tool marks using the
15 same data Peterson and Markham used was 1 percent for
16 firearms and 1.3 percent for tool marks.

17 Again, that error rate is defined as a false
18 positive error rate.

19 Q. One other thing that made the findings in 1995 skewed
20 with respect to the inconclusives is, it didn't take into
21 account like the FBI, when they don't have the tool, what
22 must they do?

23 A. The FBI laboratory policy, when they do not have a tool
24 and class characteristics are similar, they are not
25 permitted to exclude.

1 Q. All right. And so if they can't exclude, what do they
2 do?

3 A. If it's not an identification, they have to call it an
4 inconclusive.

5 Q. So in the 1995 calculation, they count it as an error;
6 is that correct?

7 A. Correct.

8 Q. Without taking into account the requirements of the
9 FBI?

10 A. Correct.

11 Q. Now, even with the 1 percent and the 1.3 percent low
12 error rate that was determined by Moran --

13 A. Murdock, Richard Grzybowski, Robert Thompson, myself,
14 and Jerry Miller.

15 Q. All right. That was conducted in 2003. Even at that
16 low error rate -- well, keep that in mind because now I
17 want you to go through what you have to say about the CTS
18 test, itself.

19 A. Okay.

20 Q. Anything else you can tell us about that?

21 A. The CTS test, anybody can actually purchase the test
22 and take the test. They have no control over who actually
23 takes the test. It could be trainees within the
24 laboratory, or it could be a private individual, and so
25 long as they submit results to CTS within a specified

1 time frame, CTS will include the results in the overall
2 study.

3 Q. So the test-takers are not controlled and not limited
4 to firearms examiners?

5 A. No, they are not.

6 Q. In fact, let's say Dr. Schwartz wanted to get all her
7 students together and submit a test. They could do so?

8 A. Yes, they could.

9 Q. All right. And even with that lack of control as to
10 the quality of the test-taker, the error rate was 1
11 percent?

12 A. Yes, for firearms.

13 Q. For firearms. Since proficiency tests are not as
14 reflective of real conditions, real life conditions, are
15 there what's called validation studies?

16 A. Yes.

17 Q. And do they more reflect the real world?

18 A. Yes, they do.

19 Q. Describe what they are and what their purpose is.

20 A. A validation study is a study wherein the author of the
21 study will prepare a number of test kits, and these test
22 kits will include tool marks -- which, again, could include
23 bullets or cartridge cases -- that the individual who is
24 taking part in the validation study will actually compare
25 underneath a comparison microscope. They will then come to

1 a conclusion as to whether or not any of those items were
2 produced by the same tool.

3 These validation studies are restricted to
4 trained firearm and tool mark examiners.

5 Q. Have you written an article that summarizes some of
6 these validation studies?

7 A. Yes, I have.

8 Q. And is this --

9 MS. NEDA: If I may approach?

10 THE COURT: You may.

11 Q. -- Government's Exhibit 5?

12 A. Yes, it is.

13 Q. What's the title of the article?

14 A. The title of the article is Defending the Scientific
15 Foundations of the Firearms and Tool Mark Identification
16 Discipline -- Responding to Recent Challenges.

17 Q. And in what publication or what journal is that
18 published?

19 A. That was published in the Journal of Forensic Sciences
20 in 2007.

21 Q. Is that a peer-reviewed journal?

22 A. Yes, it is.

23 MS. NEDA: If I may admit it or offer it into
24 evidence?

25 THE COURT: Any objection?

1 MR. BURT: No, Your Honor.

2 THE COURT: It will be admitted for purposes of
3 this hearing.

4 (Government's Exhibit 5 admitted into evidence.)

5 Q. Let's go through just a few of the validation studies,
6 then. Starting with 1992 and Mr. Brundage -- am I saying
7 that right? Brundage?

8 A. Brundage.

9 Q. Brundage? What was the purpose of his test?

10 A. The purpose of his test was to determine whether
11 trained firearm and tool mark examiners could look at
12 bullets known to have been fired from ten consecutively
13 manufactured rifle barrels and correctly associate them
14 from the barrel from which they were fired.

15 Q. And why did he choose consecutively manufactured
16 firearms?

17 A. Because consecutively manufactured firearms -- or
18 barrels, in this case.

19 Q. Excuse me.

20 A. -- present a more challenging situation because we
21 would expect the potential for subclass characteristics to
22 be present. If you recall when I was talking about
23 subclass characteristics, they are restricted to tools
24 manufactured close in sequence with one another. And so we
25 could expect the potential for subclass characteristics to

1 be present and lend to some confusion with individual
2 characteristics.

3 Q. So in effect, was he creating a worst case scenario?

4 A. Yes.

5 Q. Now, you said he had 15 unknown?

6 A. In each test, there were 15 unknowns fired from 10
7 different barrels, and the tests also include test fires
8 from each of those 10 barrels.

9 Q. And how many examiners?

10 A. In the original study, 30.

11 Q. And does that equal about 450 samples?

12 A. Yes.

13 Q. And of the 450 samples or matches, what was the result?

14 A. There were no false identifications, nor any false
15 eliminations.

16 Q. Now, in 2003, can you describe the validation test
17 conducted by Murphy and Bunch?

18 A. Murphy and Bunch in 2003 looked at 360 cartridge cases,
19 and they presented the test kits so that there would be
20 exclusions in those. And there were no false
21 identifications.

22 Q. And I don't know if we have on the record Mr. Bunch's
23 first name. Do you know it?

24 A. His first name is Stephen, S-T-E-P-H-E-N.

25 Q. And then in 2004, Kneel and Miller conducted a

1 validation test?

2 A. Yes. Neel is Mike Neel, Michael Neel. He works with
3 ATF, as does Jerry Miller. What they did is, they looked
4 at two-dimensional tool marks, two-dimensional models of
5 tool marks, and in 1,000 different samples, if they applied
6 the criteria for identification for two-dimensional tool
7 marks, at no point would that criteria have been violated.
8 So there were no false inclusions.

9 Q. And in 2005, Erich Smith's test? I think I asked this
10 of Dr. Schwartz. You're familiar with it at least?

11 A. Yes.

12 Q. Can you tell us about it?

13 A. Erich Smith -- and his first name is spelled E-R-I-C-H.
14 Erich Smith is an examiner with the FBI. His study
15 consisted of eight different examiners. Each examiner was
16 provided with 45 bullets and 45 cartridge cases with a high
17 number of known exclusions within those. There were no
18 false identifications with the sample size of approximately
19 720.

20 Q. And in 2009, Mr. Hamby, Thorpe, and Brundage conducted
21 a test?

22 A. Actually, that test is an extension of the original
23 test that was done by David Brundage to include now over
24 500 examiners, each looking at 15 unknowns. And that study
25 has concluded that there have been no false identifications

1 to this date.

2 Q. What are reproducibility tests?

3 A. As we discussed earlier, when two bullets are fired
4 from a firearm, they will not have 100 percent agreement
5 with regards to the individual markings, due to the number
6 of different things that are occurring and the dynamics of
7 actually a bullet traveling down a barrel.

8 As a result, firearm and tool mark examiners have
9 to be relatively certain that we would expect to see at
10 least a good reproducibility of individual markings from
11 bullet to bullet, cartridge case to cartridge case, or tool
12 mark to tool mark. Otherwise, the point of trying to
13 identify a particular tool would be pointless because the
14 marks would be changing so rapidly.

15 Q. Yes.

16 A. Reproducibility tests or reproducibility studies are
17 designed to determine at which point we might, as firearm
18 and tool mark examiners, expect to see a significant change
19 in the markings, such that we would no longer be able to
20 identify a bullet as having been fired from the same gun as
21 another bullet.

22 Q. Let's start with 1974, Mr. Hamby again.

23 A. Yes. James Hamby test fired 500 or 501 bullets from a
24 5.56 millimeter NATO rifle. It is a military weapon that
25 the United States uses. He fired 500 or 501 rounds,

1 bullets, through that rifle as rapidly as possible.

2 Q. What was his purpose for doing it as rapidly as
3 possible?

4 A. To make the conditions as miserable as possible.
5 Because the barrel would heat up, and he wanted that
6 variable to be there, as well, because he wanted to, again,
7 have something akin to a worst case scenario, where the
8 conditions were as deleterious as possible.

9 Q. And in doing this, he was trying to see whether or not
10 there was significant change from the first to the 501st
11 bullet, to see if he wouldn't be able to identify the last
12 fired bullet; is that right?

13 A. Correct.

14 Q. What did he find?

15 A. He found that he was still able to make an
16 identification between the first bullet and the last
17 bullet.

18 Q. All right. In 1981, again, Mr. Biasotti conducted a
19 test; is that correct? A reproducibility test?

20 A. He did.

21 Q. And what type of bullets did he use?

22 A. He actually used lead bullets fired from a .22 caliber
23 weapon.

24 Q. All right. And what did he find with respect to lead
25 bullets? And also Mr. Kirby did so as well; is that

1 correct?

2 A. Mr. Kirby later test fired 900 lead bullets.

3 Q. What is Mr. Kirby's first name, for the record?

4 A. I do not know his first name.

5 Q. Okay. In any event, with respect to lead bullets, what
6 was found?

7 A. That the conditions of the barrel -- because as lead
8 bullets travel down a barrel, lead will actually be
9 deposited onto the inside of the barrel. This changes the
10 interior condition of the barrel, such that if lead bullets
11 are fired down a barrel and the barrel is not cleaned, it
12 was demonstrated that bullets would have to have been fired
13 in close sequence with one another in order to make a
14 determination that they were fired from the same weapon.

15 Bullets that were fired in sequence far apart, if
16 the weapon was not cleaned, could not have been determined
17 to have been fired from the same weapon even though it was
18 known that they were.

19 Q. All right. In the particular case of the Marlin
20 Winchester and the ammunition examined, that was not lead
21 bullets; is that correct?

22 A. No, it was jacketed.

23 Q. Now, what about 1983, Shem and Striupaitis conducted a
24 reproducibility test. Can you describe that?

25 A. Yes. It was Robert Shem, first name. They conducted a

1 test where they test fired 501 bullets from a .25
2 auto-caliber pistol, and they were able to identify bullet
3 number 1 and bullet number 501 as having been fired from
4 the same firearm.

5 Q. Also, in 1983 Yoshimitsu Ogihara conducted a
6 reproducibility test?

7 A. Yes.

8 Q. Can you describe that?

9 A. He was one of the authors of that test. They test
10 fired 5,000 bullets from a .45 auto-caliber pistol, and
11 they were able to find reproducibility in markings on
12 bullet number 1 and bullet number 5,000.

13 Q. In 2001 -- I don't have his first name -- Doelling.

14 A. Correct. I'm not sure of his first name.

15 Q. Okay. Did he conduct a study that was published?

16 A. Yes, he did; again, with approximately 4,000 jacketed
17 bullets, and he could identify the first to the last.

18 Q. Now let's talk about the ATF Lab in which you practice.
19 Is the lab accredited? And if so, by what entity?

20 A. It is accredited, and it is accredited by the
21 Association of Crime Laboratory Directors Laboratory
22 Accreditation Board, otherwise known as ASCLD Lab.

23 Q. All right. And do they, ASCLD, do they audit your lab?

24 A. ASCLD Lab audits our laboratory, themselves, once every
25 five years.

1 Q. And do you folks conduct any internal audit, in
2 addition to the five-year periodic audit that ASCLD
3 performs?

4 A. Yes, we do.

5 Q. How often do you perform internal audits?

6 A. We perform internal audits once a year.

7 Q. What do those audits include? What do they involve?

8 A. Those audits include an evaluation of the methods and
9 procedures we use, to determine whether or not they are
10 generally in acceptance within the scientific community and
11 the discipline.

12 In addition, they actually review our case
13 records, which includes our notes, any photographs, and any
14 reports, to determine whether or not we are actually
15 following the procedures we say we use. They also include
16 a check of the maintenance records of our instrumentation,
17 to ensure that we are using, one, proper instrumentation
18 and, two, that we check it to ensure that it is functioning
19 properly.

20 Q. All right. And with respect to the work you do on tool
21 mark examination of bullets, one of the tools you use would
22 be the comparison microscope?

23 A. Yes.

24 Q. And the other would be the micrometer?

25 A. We also use a micrometer.

1 Q. Excuse me.

2 A. And I use that to measure bullet diameters.

3 Q. Uh-huh.

4 A. And I also use what is referred to as a mini scale. It
5 is a fixed ruler that allows me to measure the approximate
6 widths of the lands and grooves.

7 Q. And were all the pieces of equipment used in performing
8 your analysis in this case properly maintained?

9 A. Yes, they were.

10 Q. And was that documented?

11 A. Yes.

12 Q. Then let's get to the results here.

13 MS. NEDA: If I may approach?

14 THE COURT: You may.

15 Q. This is Government's Exhibit 3. What is that?

16 A. Government's Exhibit 3 is a copy of my laboratory
17 report, as well as the case records, which includes an
18 action sheet and all my case notes.

19 Q. All right. I'll have you testify about it.

20 MS. NEDA: At this time I would like to move it
21 into admission so the Court can refer to it at times.

22 MR. BURT: No objection.

23 THE COURT: It will be admitted for purposes of
24 this hearing.

25 (Government's Exhibit 3 admitted into evidence.)

1 MS. NEDA: Can you see if that works? Touch the
2 screen. Here, let me put something on the screen. Now you
3 touch it.

4 THE WITNESS: It does work.

5 MS. NEDA: Okay. Do you know how to erase those
6 green marks you just did?

7 THE COURT: Touch the lower --

8 MR. BURKHEAD: Left, I believe.

9 THE COURT: Lower left corner of the screen.

10 THE WITNESS: No, that's not it.

11 THE COURT: Try the lower right.

12 MR. BURKHEAD: Your Honor, I believe it can only
13 work from the one at the podium.

14 THE COURT: Okay.

15 MR. BURKHEAD: I believe that's the only one that
16 can erase.

17 MS. NEDA: Okay. Well, let's see. So only I
18 can. Okay. Maybe when we get to these, since it doesn't
19 look like you can actually point effectively to such fine
20 features, I might actually ask you to come up here in a few
21 minutes.

22 THE WITNESS: Okay.

23 MS. NEDA: To actually use the television camera.

24 Q. (By Ms. Neda) What firearm were you provided to
25 examine?

1 A. I was provided with a Marlin, Model 336, 30-30
2 Winchester caliber rifle.

3 Q. Were you provided with any spent bullets?

4 A. I was provided with one spent or fired bullet.

5 Q. Did you identify this with an exhibit number in your
6 report?

7 A. Yes.

8 Q. And the rifle was marked as what?

9 A. Exhibit 8.

10 Q. And the spent bullet?

11 A. Exhibit 36.

12 Q. Okay. You obtained these two items from where?

13 A. I obtained them from our evidence, secured evidence
14 storage room.

15 Q. But ultimately, did it come from Mr. Guerra here in New
16 Mexico?

17 A. No. Actually, they were submitted by Special Agent
18 Flores.

19 Q. Oh, from ATF?

20 A. Yes.

21 Q. Okay. All right. But it is your understanding that
22 these are the items that Mr. Guerra examined here in New
23 Mexico?

24 A. Yes.

25 Q. Am I saying his name right, Guerra?

1 A. Yes.

2 Q. Okay. Let's go to your ultimate conclusion, and then
3 we'll go to how you got to it. Ultimately, did you
4 conclude that the spent bullet marked as 36 came from the
5 Marlin model Winchester caliber rifle?

6 A. Yes, I did.

7 Q. Now, tell us what you did to come to that conclusion.

8 A. What I did to come to that conclusion was, I examined
9 the bullet. I examined the bullet for design, class
10 characteristics, and whether the individual characteristics
11 may be sufficient for identification.

12 I then examined the Marlin rifle for its overall
13 functioning, class characteristics. I then test fired that
14 Marlin rifle, using two cartridges from our laboratory
15 ammunition collection.

16 And then I proceeded to do a comparison between
17 my test fired bullets and the bullet that was provided as
18 Exhibit Number 36.

19 Q. All right. Now, as an example of the narrative --
20 well, is this an example of the narrative that you were
21 just describing earlier as procedure conducted by the ATF
22 on Government's Exhibit 3? It would be Page 2, of the
23 bullet worksheet.

24 A. Page 2, which is entitled Bullet Worksheet, is actually
25 the worksheet upon which I recorded my observations with

1 regards to the bullet as I examined it and measured the
2 various characteristics of that bullet.

3 Q. All right.

4 THE COURT: May I interrupt just a second? I'm
5 sorry. You said Page 2?

6 THE WITNESS: It is identified as Page Number 2,
7 lower right-hand corner, and it's of my case notes, so it
8 will not be the second page in the packet.

9 MS. NEDA: It will be one, two, three, four --
10 five pages in, Your Honor.

11 THE COURT: Oh, okay. I see.

12 MS. NEDA: Unfortunately, we're going to have a
13 lot of pagination variation because it's in sections.

14 THE COURT: Got it. I'm there. Go ahead. You
15 may proceed.

16 MS. NEDA: All right.

17 Q. But I really want to go two more pages in, Page 4,
18 where it says Firearms Worksheet. Is that, then, the
19 example of the narrative?

20 A. Again, the Firearms Worksheet documents my observations
21 and what I did with regards to the firearm.

22 Q. All right.

23 A. The actual narrative for the comparisons that I started
24 would begin on Page 5.

25 Q. Entitled Case Notes?

1 A. Yes.

2 Q. Okay. Now, on the top it says Inter-comparison of Test
3 Fired Bullets T8.1 and T8.2. What are those numbers
4 identifying?

5 A. Those numbers actually are the designations for the
6 various test fires that I would perform. The "T"
7 represents test fire. The "8" represents the exhibit
8 number of the firearm from which they are test fired. And
9 the ".1" and ".2" are individual designators that tell me
10 not only the sequence in which they were fired, but also
11 uniquely identifies them so that I can more carefully
12 document my observations and my notes.

13 Q. So T8.1 and T8.2 are the two bullets that you fired
14 from the rifle?

15 A. They are.

16 Q. Okay. All right. Now, I just want you in a brief
17 fashion to describe what you did with the comparison
18 microscope, going on to your Page 9, "Documentation of
19 Bullet Comparison," explaining what that is.

20 A. What I did is, I first compared the first test fired
21 bullet, which is T8.1 with the evidence bullet. I compared
22 it under a low power on a comparison microscope. And I
23 should affirm or describe what a comparison microscope is.

24 A comparison microscope is a microscope in which
25 two objects, which are physically separate in space -- they

1 are on two different microscopes -- these two different
2 microscope pieces are linked by an optical bridge so that I
3 can view them as if they were right next to each other,
4 when in actuality they're in separate physical space.

5 But it allows me, so long as the magnification on
6 both sides is the same, it allows me to proceed with a
7 comparison and to evaluate class and individual
8 characteristics.

9 For each of the two test fired bullets, I scanned
10 them against the exhibit bullet, Exhibit 36, in an effort
11 to determine whether or not there was any similarity. What
12 I did observe was that the tests were better marked under
13 the groove engraved areas which represent the groove
14 impressions of the actual barrel. The test fired bullets
15 were better marked on those than the evidence bullet was.

16 And the evidence bullet had some good markings
17 in the land engraved areas, which represent the land
18 impressions or the lands of the barrel. And the test fires
19 had some variability in the markings on the lands.

20 So then what I did, after doing that initial scan
21 or examination under low power, I then performed a very
22 detailed exam of each test fire against the exhibit bullet,
23 and that is documented in detail on Page 9 of my notes.

24 And what Page 9 represents is two different
25 comparisons. The first column represents T8.1 versus the

1 exhibit bullet. The second column represents the second
2 test fire, T8.2. And basically what I do is, in this
3 documentation, I am looking at the land and groove engraved
4 areas, and I am trying to determine how much correspondence
5 I'm actually seeing on each of the total of 24 different
6 areas on this bullet.

7 Q. When you're looking under the comparison microscope,
8 you have the two bullets, and you are rotating them; is
9 that right?

10 A. Correct.

11 Q. So when we look at Page 9 of the form called
12 Documentation of Bullet Comparison, this is as you roll
13 the bullet along, looking under the comparison
14 microscope?

15 A. Yes. What I do is, I find an area that I believe to be
16 of significant correspondence, that is not there by mere
17 chance, but is there because a potential exists that they
18 were made by the same tool or fired by the same firearm. I
19 will then rotate the bullets, what I refer to as "in
20 phase," and that means I will keep them in that same
21 configuration with respect to one another as I actually
22 rotate the bullets.

23 Q. All right. In addition to documenting this in
24 longhand, as you demonstrate, you also took photographs?

25 A. Yes, I did.

1 Q. Okay.

2 MS. NEDA: May I approach?

3 THE COURT: You may.

4 Q. Is 16 -- would you go ahead and describe what 16 and 17
5 are, please.

6 A. 16 and 17 are printouts of digital images I took of a
7 number -- of just two of the many digital images I took,
8 when I compared T8.2, which is the second test fired
9 bullet, versus Exhibit 36, the fired bullet I was provided.

10 Q. All right. And we'll put that --

11 MS. NEDA: May Mr. Nichols go over there so he
12 can point?

13 THE COURT: Yes.

14 MS. NEDA: Okay. So if you'll come over here so
15 you can point and put those green blobs on the exhibit on
16 your screen. If you could go ahead, and I'll just leave
17 you alone here. Just go ahead and describe shoulders and
18 what you're looking for as you matched the bullets.

19 MR. BURT: Can we identify what photo he's
20 talking about here from the case records?

21 THE COURT: Sure. Sure.

22 THE WITNESS: The actual file number for the
23 photo is 09S0205(1041).TIF.

24 MR. BURT: Thank you.

25 THE WITNESS: You're welcome.

1 Q. (By Ms. Neda) The Xerox is not a very good likeness,
2 Mr. Burt, but you can see this on your screen?

3 THE COURT: One thing, Mr. Nichols, you have the
4 ability to zoom in on the photograph if you wish.

5 Q. As you're looking at Government's Exhibit 16, what is
6 the Court looking at on the right?

7 A. What the Court is looking at on the right, and as you
8 can see at the bottom, underneath at the bottom in the
9 white border is the number "36." On the right-hand side of
10 that line that goes down the middle of the photograph, that
11 is Exhibit Number 36.

12 Q. And what is all this obliterated area?

13 A. That is an area of Exhibit 36 that was damaged.

14 Q. That is a spent bullet?

15 A. That is a spent or fired bullet. The image on the left
16 is my actual test fire. And the line that goes down the
17 middle, that is the line in my field of view where those
18 images are divided. Again, they are separate in physical
19 space.

20 These lines that are going horizontal across the
21 photograph, for the case record and the court reporter,
22 those are called the shoulders. Those define the
23 separation between the land engraved areas, which are the
24 depressed areas on the bullet, and the groove engraved
25 areas, which are the raised areas on the bullet. Those

1 represent what I will refer to as shoulders, and what they
2 do is, they help me determine whether or not these are in
3 the same position with respect to one another.

4 For instance, if I were to have these shoulders
5 way out of sync, then any marks that I would be identifying
6 would be questionable in nature because they do not line up
7 with well-defined edges on the bullets.

8 The smaller, finer markings that are running
9 nearly through the middle of the photograph in a horizontal
10 nature are what I will refer to as individual
11 characteristics. These are -- a pattern of which will be
12 unique to a given tool; or in this case, a barrel.

13 Q. If we could, are the shoulders you just described,
14 broader or horizontal lines, are they also known as class
15 characteristics?

16 A. Well, the shoulders are there to define the distinction
17 between the land and groove engraved area, so they are a
18 part of what the class characteristics form.

19 Q. All right.

20 A. If one set of shoulders was very wide and one set of
21 shoulders was very narrow, those would be different class
22 characteristics, a clear indication they were not fired
23 from the same gun.

24 Q. All right.

25 A. So again, what I was looking at were the finer markings

1 within a land engraved area in this photograph, and I did
2 see some correspondence of some of the coarser marks across
3 the middle of those land engraved areas on People's --
4 Government's Exhibit 16.

5 Q. Now, this line, for instance, as we see it, continues
6 into the spent bullet, but not clearly. Can you explain
7 that?

8 A. Basically, because of the dynamics that occur when not
9 only a bullet is fired from a firearm, but also when it
10 passes into some material, whether it be test material that
11 I will use for test firing purposes or whether it be an
12 object or an individual, sometimes these markings will not
13 extend for the full length of the land impression, and
14 there can be interruptions.

15 What I looked for is some decent length that I
16 can ascertain that it's an actual striation, as opposed to
17 some sort of artifact on the bullet, itself.

18 MS. NEDA: If I may, I'll move into evidence
19 Government's Exhibit 16.

20 MR. BURT: No objection.

21 THE COURT: It will be admitted for purposes of
22 the hearing.

23 (Government's Exhibit 16 admitted into evidence.)

24 Q. And with respect to Government's Exhibit 17, is that
25 another photograph of the two bullets that you have

1 described?

2 A. Yes, it is another photograph of the same two bullets
3 that I was describing. It is actually a groove engraved
4 area.

5 MR. BURT: Can we identify what photo you're on?

6 THE WITNESS: Sure, Mr. Burt. The photo is
7 09S0205(1021).TIF.

8 MR. BURT: Thank you.

9 A. Sure. It is actually the first photograph I took with
10 respect to these two bullets, and this is the groove
11 engraved area that I saw such compelling agreement of
12 individual markings that I felt that it was this area upon
13 which I would actually phase the two bullets and keep them
14 in that phase as I rotated them together.

15 About the middle of the photograph, there are a
16 number of individual marking, both gross and fine, that can
17 be seen to extend across that dividing line.

18 Q. And when you were describing earlier in your testimony
19 the idea that no two bullets will expand at the same time
20 nor will they begin their rotation at the same time, is
21 that demonstrated in this photograph on the right?

22 A. Yes, it is, actually, because the photograph itself
23 depicts the grooves. The grooves of the barrel are the
24 depressed areas of the barrel, and there are times in which
25 the bullet may not obdurate or expand fully, so that it is

1 in solid contact with the groove of that barrel.

2 And as a result, you can see some variability of
3 markings, and the striations may not be formed as well on
4 the grooves.

5 Q. Could that explain the cessation of the striations are
6 much less pronounced where I'm pointing right now?

7 A. In that area on Exhibit 17 was the evidence bullet,
8 Number 36, on the groove engraved area. And yes, that is a
9 possible reason for that.

10 Q. All right. Now, although you saw this correspondence,
11 were you able to do the more conservative extension between
12 the criterion for CMF?

13 A. No, I did not.

14 Q. So what did you do?

15 A. If I may take the stand again?

16 Q. Yes, except we're going to be doing pictures, but you
17 can take the stand. We'll do more pictures.

18 A. I was not in direct contact with the case agent
19 assigned to this case.

20 Q. Uh-huh.

21 A. So I asked my supervisor, Jeffrey Lewis, who is the
22 chief of the identification section, that I wanted to have
23 any cartridges that were submitted with the firearm or that
24 were found with the firearm, and I also wanted to have any
25 test fires that the previous examiner performed in his work

1 that he did with regard to this case.

2 Q. Before you go on with that, I should ask you: When you
3 received the evidence that's Exhibit 8 and Exhibit 36, the
4 rifle and the spent bullet, were you aware of Mr. Guerra's
5 results at that point?

6 A. No, I was not.

7 Q. So did you obtain the two test -- well, two of the test
8 fired bullets from Mr. Guerra's lab?

9 A. I actually received four cartridges that were reported
10 to have been recovered with the firearm, in addition to
11 test fires, which totaled six, six bullets; or actually,
12 five in tact bullets and one bullet jacket that were test
13 fires, as well as six cartridges.

14 Q. What did you do with those items once you received
15 them?

16 A. What I did is, I examined the cartridges to determine
17 the general character and whether or not they were similar,
18 at least in manufacture and design, to the ammunition I
19 used in my test fires.

20 Q. Uh-huh.

21 A. I then looked at the test fired bullets and measured
22 their class characteristics; found that they were similar
23 to those on my test fired bullets, as well as the Exhibit
24 Number 36. I then selected three of those test fires, and
25 I performed inter-comparison among those three, and I

1 selected two that I thought would represent best my test
2 fires as well as potentially the exhibit bullet.

3 I compared my test fires with the test fires that
4 I was provided, which were Exhibit 37, and I was able to
5 conclude independently that those bullets were fired from
6 the same gun.

7 Q. You took photographs of this second phase of your
8 testing?

9 A. Yes, I did.

10 Q. So with the Court's permission, I would ask you to come
11 up here. Exhibits 7, 8, 9, 10, 11, 12, and 13, just
12 generally, sir, are these the microphotographs taken by you
13 during your test phase of testing or analysis?

14 A. Yes, they were.

15 MS. NEDA: Do you have any objection? I'll offer
16 them now.

17 MR. BURT: No, no objection. Again, if he could
18 just identify them.

19 THE WITNESS: I will.

20 MR. BURT: Just the .TIF numbers.

21 THE COURT: Just a second. They will be
22 admitted. How did you mark them, for purposes of this
23 hearing?

24 MS. NEDA: As I just said, Exhibits 7 through 13.
25 But what Mr. Burt would also like is, each photograph has

1 its own file number.

2 THE COURT: Right. I just want to get the
3 exhibits, and then Mr. Nichols said that he'll refer to
4 that .TIF number for the record.

5 MS. NEDA: Yes.

6 (Government's Exhibits 7, 8, 9, 10, 11, 12, and 13
7 admitted into evidence.)

8 MS. NEDA: Yes.

9 Q. (By Ms. Neda) Sir, I'm not dictating what order to do
10 this in, but just however you wish to. Describe to the
11 Court what you did under the comparison microscope, and
12 keeping in mind that in addition to identifying the
13 government's exhibit number, include the file number for
14 each photo.

15 A. Sure. First, I will do these actually in order,
16 Government's Exhibits 7 through 13.

17 Government's Exhibit 7 is file number -- and I'm
18 just going to give the last three digits -- 063.TIF. That
19 photograph actually represents two of the test fires that I
20 was provided, that I was told it was reported that they
21 were test fired by Mr. Guerra. And those two test fires
22 are designated on the bottom, 37-B and 37-A.

23 So this is actually an inter-comparison or a
24 documentation of the inter-comparison of those two test
25 fires. And as you should be able to see from this

1 photograph, it is a groove engraved area. Not only that,
2 but there is an overwhelming amount of pattern agreement
3 across that fiduciary line of a number of individual
4 characteristics within that groove engraved area.

5 Exhibit Number 8, with the .TIF Number 062,
6 represents a different groove engraved area of the same two
7 bullets, 37-B and 37-A. And again, as the photograph has
8 tried to demonstrate and document, there was overwhelming
9 and very significant and compelling correspondence of
10 individual markings across those two bullets.

11 So I was able to conclude -- and Government's
12 Exhibits 7 and 8 helped to document some of what I looked
13 at -- that the test fired bullets were indeed fired from
14 the same firearm and that they were reproducible with one
15 another.

16 I then wanted to determine whether or not I could
17 actually identify my test fires with the test fires that I
18 was provided, so Government's Exhibit 9, which is File
19 Number 043, shows bullet 37-A, which was one of the test
20 fires I provided on the left-hand side, and test fire 8.1
21 on the right side, which is one of my own test fires. It
22 is a groove engraved area, and it was documenting that
23 there was significant correspondence and very compelling
24 correspondence of individual markings running horizontally
25 in the photograph within that groove engraved area.

1 Government's Exhibit Number 10 is another
2 photograph -- and the file number on that is 044.TIF -- of
3 the same two bullets and a different groove engraved area.
4 And again, it was designed to document a number and very
5 compelling correspondence of individual markings within
6 that groove engraved area.

7 So I was able to conclude, based on that
8 correspondence that I observed, that my test fires were
9 test fired in the same gun or were fired from the same gun
10 as the test fires I was provided. So I was able to
11 identify my test fires with the test fires that I was
12 provided.

13 So then what I did is, I took one of the test
14 fires that I was provided and compared it against the
15 evidence bullet.

16 The first photograph that I'll show you is
17 Government's Exhibit 11, and it is File Number 047.TIF. It
18 is a land engraved area. And this photograph, as we can
19 see, the land engraved area looks larger than the groove
20 engraved areas we looked at before. The magnification on
21 this is at 80X, and that's why there's a difference.

22 Within the middle of that land engraved area
23 there is a very compelling amount of correspondence and
24 pattern agreement between the test fire that I was
25 provided, 37-B, and the evidence bullet, 36. Again, that's

1 one of the photographs that I took.

2 Another photograph is Exhibit Number 12, and that
3 is File Number 049. This is a different land impression.
4 And again, as we can see, there's a blurred area on the
5 right-hand side of the photograph. That is damage that was
6 done to the exhibit bullet. This is a land engraved area
7 that has, again, compelling correspondence of individual
8 striated markings across that land impression.

9 Government's Exhibit Number 13, which is the last
10 of the photographs, which is File Number 048, is actually
11 the same land engraved area as Government's Exhibit 12, but
12 a different part of that land engraved area. Again, the
13 photograph is at 80X. And as we can see in the center of
14 the photograph, there is a compelling amount of agreement
15 of individual characteristics.

16 We also see some differences. And again, we
17 don't expect to see 100 percent agreement from bullet to
18 bullet known to have been fired from the same gun, and we
19 can expect to see some differences in individual markings.
20 And in fact, as we can see on the left-hand side of the
21 photograph, there is a very coarse marking, I would say
22 about a third of the way down that land engraving, that
23 stops and does not continue on for the rest of the bullet.

24 So even on a single bullet, those various
25 striations will start and fall off.

1 And that is the last of the photographs that have
2 been offered.

3 Q. All right.

4 THE COURT: You know, would this be a good time
5 to take a mid morning break?

6 MS. NEDA: Okay.

7 THE COURT: Let's take about 15 minutes.

8 (Recess from 10:42 a.m. until 11:14 a.m.)

9 THE COURT: You may resume questioning the
10 witness.

11 Q. (By Ms. Neda) So with the first bullets, T8.1 and
12 T8.2, did you use them in combination to come to your
13 conclusion?

14 A. I used them to form some of the basis of my conclusion,
15 yes.

16 Q. All right. And how did you use them? Were you looking
17 at different areas and patterns on different areas of each
18 bullet?

19 A. In my case notes, I indicate that if I used
20 combinations of different areas of correspondence that I
21 saw when I compared T8.1 with the evidence bullet and T8.2
22 with the evidence bullet, using the combination of the
23 areas on those two comparisons, I would be able to conclude
24 that Exhibit 36 was fired from that firearm.

25 Q. But you went beyond that and got the test bullets here

1 in New Mexico?

2 A. That is correct.

3 Q. And we already saw the Photographs 7 through 13 of your
4 comparison of those bullets. In comparing those test
5 bullets, were you able to use CMS on one bullet?

6 A. On one combination of bullets, yes.

7 Q. Okay. So in looking at the test fired bullet from
8 Mr. Guerra, comparing that to the spent bullet that was the
9 evidence bullet, were there times when, looking at both
10 bullets, you exceeded the CMS criteria?

11 A. Yes. When I was actually comparing the bullets, the
12 consecutive matching striations, I noticed two bullets
13 exceeded the sufficient agreement which is the criterion --
14 exceeded the sufficient agreement to allow me to determine
15 whether or not these two shared a common origin. And that
16 sufficient agreement is defined for me by using the CMS
17 criteria.

18 Q. So all of the test bullets -- those of your making and
19 those of the making of Mr. Guerra -- and the evidence
20 bullet, itself, you can conclude beyond a reasonable degree
21 of scientific certainty that all of those bullets were
22 fired by the Marlin which is Exhibit 8?

23 A. The bullets that I actually compared, which are my two
24 test fires, T8.1 and T8.2, two of the test fires.

25 Q. 37-A and 37-B.

1 A. And Exhibit 36 bullet.

2 Q. And Exhibit 36 being the evidence bullet?

3 A. Correct.

4 Q. And all five of those bullets were fired from the

5 Marlin?

6 A. Correct.

7 Q. There is one correction. There's a typo that you

8 pointed out, that you wanted to correct, and I think it

9 appears -- not a typo, but handwritten there on the Bullet

10 Worksheet, Page 2 which actually physically it is the one,

11 two, three, four -- fifth page in Exhibit 3, where you say:

12 "caliber nominal .38"?

13 A. Correct. That should read "nominal .30."

14 Q. And you used .30 caliber throughout the rest of the

15 report?

16 A. Correct.

17 Q. So it only appears incorrectly there once?

18 A. Correct.

19 Q. Was that the only correction you wanted to make on

20 Exhibit 3, which is your reported analysis?

21 A. Yes.

22 Q. Okay. Now, this report, which is Government's Exhibit

23 Number 3, was reviewed by a peer named --

24 A. Howard Kong, K-O-N-G.

25 Q. All right. And is he a firearms examiner at the ATF

1 Lab?

2 A. Yes, he is.

3 Q. Okay. And did he concur with your conclusion that the
4 test, spent bullets, T8.1 and T8.2, as well as 37-A and
5 37-B from Mr. Guerra, those four, and Exhibit 36, which was
6 the evidence bullet, all five came from the Marlin that is
7 marked Exhibit 8 in your chain of custody?

8 A. Yes.

9 Q. And if I can put into evidence -- well, first let me
10 have you identify this. Is Government's Exhibit 2 the CV
11 for Mr. Kong?

12 A. Yes, it is.

13 Q. Okay.

14 MS. NEDA: I just move it into evidence to show
15 his credentials as the peer reviewer of Mr. Nichols'
16 analysis in this case.

17 THE COURT: Any objection? Mr. Burt, do you
18 object?

19 MR. BURT: No, Your Honor. I'm sorry.

20 THE COURT: That's fine. It will be admitted for
21 purposes of this hearing.

22 (Government's Exhibit 2 admitted into evidence.)

23 Q. Mr. Nichols, on a final point here -- we are at the
24 end -- you have indicated that CMS, consecutive matching
25 striations, which is an extension of pattern matching, is a

1 more conservative approach, right?

2 A. Yes.

3 Q. But you do subscribe to it and you do use it?

4 A. Yes.

5 Q. Have you made a review of the studies that have
6 compared CMS -- well, let me ask you this: Have you
7 conducted a review of studies involving the testing of the
8 viability of CMS?

9 A. CMS? Or the criteria, itself?

10 Q. Criteria.

11 A. Yes.

12 Q. Can you tell us what that involved.

13 A. There have been studies in which known non-matching
14 tool marks have been compared.

15 Q. Known non-matching meaning --

16 A. Tool marks made by different tools have been compared
17 to determine whether or not the amount of coarse CMS,
18 consecutive matching striations, if in any of those
19 instances they would actually exceed the published criteria
20 of Murdock and Biasotti in 1997.

21 Q. The criteria being, again, either six in sequence, or
22 two pairs of three?

23 A. And that's for three-dimensional tool marks.

24 Q. Yes.

25 A. In each of those instances, it has been demonstrated

1 that the criteria would not be exceeded.

2 Q. How many samples?

3 A. 6,000, between three-dimensional and two-dimensional.

4 Q. All right.

5 MS. NEDA: That concludes my direct examination.

6 THE COURT: I have just a couple of quick
7 questions. Let me ask them in case they prompt any
8 additional questions by counsel. The weapon, the rifle
9 that you examined, was manufactured by Marlin?

10 THE WITNESS: Correct.

11 THE COURT: The ammunition was Winchester; is
12 that correct?

13 THE WITNESS: The caliber is Winchester. It's a
14 30-30 Winchester caliber.

15 THE COURT: Why do they refer to it as a 30-30?
16 Is that because Winchester was the first manufacturer to
17 develop the 30-30 caliber rifle?

18 THE WITNESS: I believe they refer to it as 30-30
19 WIN, W-I-N, Winchester, because Winchester was the first
20 one to develop that caliber rifle. The 30-30, the first
21 number refers to the bore diameter, and the second number
22 generally refers to the powder charge.

23 THE COURT: Okay. In terms of the ammunition,
24 who manufactured the ammunition?

25 THE WITNESS: The one that I used in the test

1 fires -- if I may refer to my notes. The ones that I used
2 in my own test fires were manufactured by Remington.

3 THE COURT: Remington. Okay. In terms of the
4 ammunition you selected, were you attempting to test fire
5 the same ammunition, the same manufacturer of Number 36?
6 Or were you able to tell who manufactured Number 36? Or
7 would it even make a difference?

8 THE WITNESS: I try and test fire ammunition as
9 similar to the exhibit bullet as possible. But because I
10 only had the bullet, I was not able to determine the
11 manufacturer.

12 THE COURT: You would need the casing?

13 THE WITNESS: I would need the cartridge case for
14 that, Your Honor.

15 THE COURT: The old song goes, "This is not your
16 first rodeo," so I'm assuming this is not the first time
17 you've ever testified as an expert in Federal Court; is
18 that correct?

19 THE WITNESS: It is not the first time, no.

20 THE COURT: Or you've testified in -- I think at
21 one time you referenced "People's Exhibit." So that would
22 be -- that's what they refer to in California State Court;
23 is that correct?

24 THE WITNESS: They do.

25 THE COURT: How many -- would you just

1 approximate how many times, State or Federal Court, that
2 you have been recognized as a firearm and tool mark
3 examiner, an expert in that field and allowed to give
4 expert opinion testimony.

5 THE WITNESS: Approximately 90 times.

6 THE COURT: Has there ever been occasion when you
7 have not been recognized as an expert or where your expert
8 opinions have been excluded?

9 THE WITNESS: No.

10 THE COURT: Thank you.

11 THE WITNESS: Thank you.

12 THE COURT: Mr. Burt, you may begin your
13 cross-examination.

14 MS. NEDA: May I just add one thing?

15 THE COURT: I'm sorry. Do you have any follow-up
16 questions in light of mine?

17 MS. NEDA: Only one point to correct.

18 FURTHER DIRECT EXAMINATION

19 BY MS. NEDA:

20 Q. Is it correct that in your CV, you list the times
21 you've been qualified as an expert witness -- they appear
22 on Page 2 of Government's Exhibit 1 -- 92 times, firearm
23 and tool mark identification?

24 A. Yes.

25 Q. Is that accurate?

1 A. Yes.

2 THE COURT: I guess if I had looked at the entire
3 exhibit, I wouldn't have asked the questions, so thanks for
4 pointing that out. I didn't realize it was there.

5 MS. NEDA: Yes, Your Honor.

6 THE COURT: Mr. Burt?

7 MR. BURT: Thank you.

8 CROSS-EXAMINATION

9 BY MR. BURT:

10 Q. Good morning, Mr. Nichols.

11 A. Good morning, Mr. Burt.

12 Q. You and I have met before in court, in a hearing
13 similar to this, one out in San Francisco, correct? The
14 Diaz case in 2007?

15 A. Yes, we have.

16 Q. I want to start, if I could, by giving the Court a
17 little overview of your literature, since it has been
18 referred to and marked as an exhibit. You began writing
19 about tool mark and firearm identification issues back in
20 1997?

21 A. Correct.

22 Q. You started out your career doing other areas of
23 forensics besides firearms?

24 A. Yes, I did.

25 Q. And correct me if I'm wrong, but I think your firearm

1 career began in about 1991?

2 A. That is correct.

3 Q. And it began in the Oakland Police Department?

4 A. Yes, it did.

5 Q. And then I think you also did some firearm work after
6 you left the Oakland Police Department, at a private lab,
7 forensic analytical, over in Hayward, California?

8 A. Yes, I did.

9 Q. But your primary duties there were running the lab? It
10 wasn't your primary function to do firearms work, was it?

11 A. That is also correct.

12 Q. Okay.

13 A. It was running the laboratory.

14 Q. And then when you left forensic analytical, refresh my
15 memory where you went next.

16 A. I went to the Bureau of ATF.

17 Q. Okay. And there, your job has been principally doing
18 tool mark and firearms comparison, correct?

19 A. That's correct.

20 Q. Okay. And while you were still working in the Oakland
21 Police Department, you published your first article
22 reviewing the literature on firearm and tool mark
23 identification, correct?

24 A. That is correct.

25 Q. That was an article that was in the Journal of Forensic

1 Sciences in 1997 called Firearm and Tool Mark
2 Identification Criteria -- A Review of the Literature?

3 A. Correct.

4 Q. Why did you feel at that point that that was a timely
5 and important topic to write about in 1997?

6 A. In 1997 there was a developing concern that I had about
7 familiarity of examiners within the field, with the amount
8 of literature that was available in widely different areas,
9 that there were small reports in the AFTE journal, small
10 studies in the AFTE journal, small studies in other
11 journals, that I wanted to be able to collect all of these
12 articles together and provide a summary.

13 It also provides me a way, with better
14 understanding of the literature, as well as being able for
15 my own purposes, to have that as a basis. I like to write
16 summary articles that reflect the current state of the
17 literature so that I can demonstrate my own understanding
18 of it, as well.

19 Q. Okay. And one of the things you noted in that first
20 review article was that Biasotti and Murdock had written a
21 state-of-the-art kind of article back in 1984, and you kind
22 of summarized what they had said?

23 A. Correct.

24 Q. One of the things you said, back when you wrote this
25 article in 1997, was that they, referring to Biasotti and

1 Murdock, also discussed the benefits and drawbacks of three
2 types of studies: Empirical studies, mechanical models,
3 and mathematical models. Empirical studies were deemed to
4 have much benefit for the individual taking part in the
5 study. However, due to the subjective nature of
6 comparisons, any studies that did not document the
7 examination in more objective ways were very difficult for
8 other examiners to utilize.

9 Now, that was Murdock and Biasotti's conclusion,
10 right?

11 A. Correct.

12 Q. And did you understand what they were talking about
13 when they said that these empirical studies, which I assume
14 are the same ones that you have referred to here in your
15 testimony, were of somewhat limited value due to the
16 subjective nature of the comparisons?

17 A. I did understand what they were referring to, yes.

18 Q. And could you explain to the Court what that is?

19 A. I would be happy to. When we deal with two different
20 things -- when we deal with firearm and tool mark
21 identification, we're dealing with two different things.
22 One is the validation of firearm and tool mark as a
23 science. And the second is the validation of the criteria
24 or the sufficient agreement that we need to make an
25 identification.

1 So the studies, while they are good for the
2 purposes of validating firearm and tool mark as a science,
3 because they use traditional pattern matching, they had
4 less value for an individual in developing their own
5 personal criteria for identification, which is based on
6 their knowledge and experience of how much correspondence
7 to expect in a known non-matching situation.

8 So as an example in those studies, I do not have
9 personal knowledge of how much correspondence that
10 individual needed to declare that those two bullets were
11 fired from the same gun or that the two bullets were fired
12 from different guns.

13 Q. And in your own writings, you have stated, have you
14 not, that in terms of what needs to be validated here, you
15 believe that both the general science of firearms
16 examination needs to be shown to be reliable; and also,
17 separate and apart from that, there needs to be a showing
18 of reliability regarding your identification criteria,
19 whatever that may be?

20 A. In my writings, I have stated that I believe, based on
21 the studies, that there is solid foundation for the
22 validation of the science. And in those writings, I have
23 also said that an individual's identification criteria
24 should be validated in some form or another. And those
25 studies that I read in 1997 do not help in validating my

1 own criteria for identification.

2 Q. Because they're just based on subjective criteria,
3 basically?

4 A. They are based on what another examiner believes is
5 sufficient correspondence to reach an identification, and I
6 don't know what that individual examiner needs.

7 Q. And when we're referring to those studies and
8 limitations of those studies, that would include all the
9 studies that were referenced in your direct examination,
10 correct?

11 A. It would, many of them.

12 Q. Now, let me get some terminology straight here. You
13 referred to something called traditional pattern matching.
14 And in your articles, I think you also referred to
15 something called line counting?

16 A. Okay.

17 Q. Is line counting the same as CMS?

18 A. Line counting is a poor use of words for what we do
19 when we're looking at CMS, because we are essentially
20 counting lines in sequence.

21 Q. Then in this one exhibit, which was marked Exhibit
22 Number 6, you make the statement at Page 299 of that
23 article, quote, "The courts are becoming increasingly
24 discontent with such answers as, 'I know a match when I
25 see it,' or that an identification is based solely on,

1 'My education, training, and experience, and not a
2 numerical count of striations.' The courts have a right to
3 better answers than what they have been accorded in the
4 past, and it is the responsibility of the firearms and tool
5 mark examiners to provide those answers," end quote.

6 When you are referencing there the, "I know a
7 match when I see it," are you referring to the traditional
8 pattern matching method of doing business?

9 A. I am referring to a statement that was made by the
10 witnesses in the Ramirez case, where they basically said,
11 "I know a match when I see it." And they did use
12 traditional pattern matching.

13 Q. Okay. And the point of that quote that I just read to
14 you is, I take it, your opinion that the courts, in terms
15 of reliability, are entitled to more than just simply a
16 firearms examiner who takes the stand and says, "Trust me,
17 these two things match; and not only do they match, but I
18 can tell you that this bullet was fired from this gun to
19 the exclusion of all other guns in the entire world"?

20 That's the kind of opinion that you are
21 essentially critiquing there, correct?

22 A. If I may?

23 Q. Yes.

24 A. I feel the Court has a right to know the basis for
25 someone's opinion; that it should be well articulated; that

1 there are individuals who use traditional pattern matching
2 who can articulate their basis very well.

3 In addition, there was a second part of that
4 question, to the exclusion of all other firearms. It is my
5 opinion that we can testify as to the practical exclusion
6 of all other firearms. But since I cannot examine every
7 firearm in the world, I cannot say that it is to the
8 absolute exclusion of all other firearms unless I have a
9 look at all other firearms.

10 But I can talk about practical exclusion, and
11 that's what my identifications are based upon.

12 Q. In your report, you actually say that the bullet, the
13 questioned bullet, 36, was fired from the Marlin?

14 A. Yes.

15 Q. At least on the face of it, that sounds like an
16 absolute conclusion, right? Is that what you're going to
17 testify to?

18 A. No, it is not.

19 Q. Okay.

20 A. It is not the absolute identification. It is to the
21 practical exclusion of all other firearms.

22 Q. And when you say "the practical exclusion of all other
23 firearms," what is that language based on? In other words,
24 is there empirical basis for that opinion? Or how do you
25 arrive at that language, "to the practical exclusion of all

1 other firearms"? And how is that different? Well, let's
2 answer that question.

3 A. Okay.

4 Q. Because I don't want to ask more than one.

5 A. That's okay. Based on the correspondence that I saw
6 when I compared these two tool marks or these two bullets,
7 if I were to compare other bullets, I would say one a day
8 for 25 years, that had similar class characteristics, I
9 would not expect to see the level of correspondence that I
10 observed in these two bullets.

11 Q. Okay. Now, let's talk a little bit about how you go
12 about that. The first issue is, do they match? Does the
13 known and the unknown match, right?

14 A. Correct.

15 Q. And then in order to reach some conclusion about
16 whether the unknown bullet was fired from a particular
17 weapon, you also have to not only decide whether they
18 match, but you have to decide whether they match any other
19 firearms that are out there, correct?

20 A. Or whether there is that potential.

21 Q. Whether there is that potential?

22 A. Yes.

23 Q. So how do you go about reaching the second part of that
24 conclusion in this case? Do you make any sort of a
25 comparative analysis with, for instance, other Marlins that

1 are fired with similar ammunition?

2 A. No, I will not.

3 Q. And why is that?

4 A. That is because, based on my training and experience,
5 the use of CMS as my criteria for the identification, I
6 have sufficient knowledge of the literature, as well as my
7 own training and experience, for me to feel sufficiently
8 comfortable with the fact that I would not expect to see
9 the amount of correspondence I saw between those bullets
10 unless they were actually fired from the same gun. Once I
11 reached that conclusion, I see no need to examine other
12 guns.

13 Q. And that is based on your review of the literature in
14 which you discuss in the various articles that you referred
15 to, right?

16 A. Correct.

17 Q. Now, I may have missed it, but can you point to me a
18 single instance in that literature dealing with Marlin
19 firearms?

20 A. I do not think that any of those articles dealt
21 specifically with Marlin firearms.

22 Q. And one of the things you have written is that it's
23 very important in your work to take into account the
24 individual manufacturing process?

25 A. Correct.

1 Q. True?

2 A. Correct.

3 Q. And the reason for that is that not all manufacturing
4 processes are created equal?

5 A. Correct.

6 Q. Theoretically, you could have a manufacturing process
7 that could not produce individual characteristics when you
8 fire a bullet through the barrel, correct?

9 A. Yes.

10 Q. And in the case of Marlin, they have a very unique way
11 of doing their rifling, do they not?

12 A. I would disagree.

13 Q. You wouldn't agree with that?

14 A. I would not agree with that.

15 Q. Is it a patented process?

16 A. The process that they use to manufacture their barrels?

17 Q. Right.

18 A. They have 12 lands and grooves, which is unusual.

19 Q. Yeah.

20 A. But they use a button to suage their barrels. And
21 button suaging is very common for barrel manufacture and is
22 represented in the studies I have looked at.

23 Q. Button suaging is common, but is microgroove rifling
24 common?

25 A. Microgroove, which is the fact that it's a number like

1 12 or 16, that is not common. That is very unique or
2 specific to Marlins.

3 Q. In fact, it's a patented process, is it not?

4 A. I don't know if it's patented, but it's very
5 distinctive and unique for Marlins.

6 Q. Well, do you know what the manufacturing process is for
7 Marlins? You said it's important to consider. Do you know
8 what it is?

9 A. I do. And that barrel was manufactured using a suaging
10 method.

11 Q. And it was manufactured using microgroove rifling, was
12 it not?

13 A. Yes. Because again, the microgroove refers to the
14 number and the dimensions of the actual grooves,
15 themselves.

16 Q. Now, you write in this article, Exhibit Number 6, that
17 Hatcher's text has oftentimes referred -- has oftentimes --
18 I think that means been referred to as the text upon which
19 the field of firearms and tool mark identification is
20 based?

21 A. Right.

22 Q. Is that true?

23 A. True.

24 Q. That's sort of the foundation for everything that came
25 after?

1 A. Correct.

2 Q. Do you know what Hatcher says about microgroove
3 rifling?

4 A. I'm not familiar with what Hatcher says in his book in
5 the 1950s about microgroove rifling.

6 Q. Well, he says that it's a nightmare to identify. Did
7 you know that?

8 A. It certainly is.

9 Q. Do you know why it's a nightmare to identify?

10 A. Yes. Because the dimensions of the lands and grooves
11 are such that for myself, in my experience, that the bullet
12 does not fully engage the rifling as well, and that the
13 amount of individual markings that I might expect to see is
14 not as many as I would see on other firearms that are
15 rifled five and six.

16 Q. What he says -- and this is quoting from his text --

17 A. Okay.

18 Q. Quote, "Identification-wise, the Marlin microgroove
19 rifling is going to be an extreme headache. The number of
20 grooves presents a problem in itself. Since each groove
21 must be compared with every other groove, it is probable
22 that a negative identification will take an expert about
23 two days, rather than an average of two hours as at
24 present. Further, positive identification will have to be
25 checked extremely carefully since the work that the authors

1 have done in connection with test bullets fired through
2 these Marlin barrels indicates that when the weapons are
3 new, there are closer family resemblances than are usually
4 present in consecutive barrels of other designs."

5 Were you aware that he wrote that?

6 A. No.

7 Q. Were you aware that he wrote, again from the same text,
8 quote, "A far more important potential problem is the new
9 microgroove barrel being produced by Marlin. We have three
10 groups of bullets shot from three new barrels. They are
11 the toughest identification job that we have ever tackled.
12 The bores were beautifully smooth. All striae on each of
13 the three groups are remarkably even and uniform. There
14 are so many grooves that negative comparisons take about
15 two to three days. Further positive comparison seem to
16 show up far less clearly."

17 Were you aware that Hatcher had written that
18 statement in his book, about trying to make an
19 identification on a microgroove rifling?

20 A. No.

21 Q. And it's your testimony today that none of those
22 studies that you cited and referred to as validation
23 studies, none of the other studies referred to in your
24 literature had ever looked at validation in terms of
25 microgroove rifling, correct?

1 A. That is correct.

2 Q. Okay. Now, one of the things that you say in your --
3 and by the way, while we're on that topic, these studies
4 about reproducibility, the point of these studies, this
5 test firing 500 bullets, it's to see whether the marks
6 persist across many firearms, correct?

7 A. Correct.

8 Q. And I think it was characterized, as well, in that one
9 study, the Shem study, I think it was, they were able to
10 reproduce the marks from bullet 1 to bullet 500?

11 A. Correct.

12 Q. Remember that? That's not correct, though, is it?
13 That's not what happened.

14 A. In the Shem study?

15 Q. Yes.

16 A. If you have a copy of it, I would like to see it and
17 check.

18 MR. BURT: I'll mark this as next, Your Honor. I
19 think we're up to Exhibit I.

20 LAW CLERK PHYLLIS AMATO: Yes, that's it.

21 MR. BURT: Exhibit I. May I approach the
22 witness, Your Honor?

23 THE COURT: Sure.

24 A. Thank you, Mr. Burt.

25 Q. Take a minute to refresh your memory. I assume you've

1 read this at some point, right?

2 A. I have read it.

3 Q. I think you've written about this, that people who
4 summarize studies, it's really in the best interests of
5 everybody to actually read the studies, not the summaries
6 of the studies?

7 A. I would strongly encourage people to read the
8 individual studies.

9 Q. And isn't it true that in this study, that under the
10 results and discussion section, they say, quote, "When
11 examining the bullets, a gradual evolution and erosion of
12 the individual characteristics was noted. The rate of
13 evolution and erosion was the greatest with the finest
14 individual characteristics."

15 A. They do state that. But again, you must put that into
16 context of the entire report and the results and the
17 conclusion, as well.

18 Q. Okay. So at least the finer points of the striae were
19 disappearing over time? Am I reading that correctly?

20 A. You are reading that correctly, but that does not come
21 in conflict with the testimony that I've provided.

22 Q. And then they say, "The coarser individual
23 characteristics carried over from first to last"?

24 A. Correct.

25 Q. And they say they were able to make an

1 identification?

2 A. Correct.

3 Q. And this is one of the studies where you say: Yeah,
4 but they don't say how they made the identification, so
5 it's kind of a worthless study in terms of assessing the
6 reliability of whatever identification criteria they're
7 using?

8 A. They don't state what their identification criteria
9 was. I can only assume, because they were able to reach an
10 identification between 1 and the 500th bullet fired after
11 that, that whatever their criteria was, that these bullets
12 exceeded that. But I have no way of objectively knowing
13 what that criteria is.

14 Q. And is this one of the studies that we talked about
15 when we began about the subjective criteria?

16 A. Yes.

17 Q. Okay. However, it's not -- if you read the study, it's
18 not a clear-cut conclusion that all striae got reproduced
19 from bullet 1 to bullet 500, right?

20 A. No, nor would I ever assume that all striae would be
21 reproduced from bullet 1 to bullet 2. There will be some
22 differences, even in test fires that are right next to each
23 other.

24 Q. In fact, in this case when you test fired this Marlin,
25 the first thing you did was, you took two test fires,

1 correct?

2 A. Correct.

3 Q. Before you did anything else?

4 A. Correct.

5 Q. And then you compared your two test fires with each
6 other?

7 A. Yes.

8 Q. And what you concluded was that there was not exact
9 reproducibility between test fire 1 and test fire 2, even
10 though you fired them one right after the other; isn't that
11 true?

12 A. That's correct. That is true.

13 Q. And is that an expected result?

14 A. That is an expected result.

15 Q. And is it an expected result for Marlins, in
16 particular?

17 A. It's an expected result for all firearms.

18 Q. And how much validation work have you, yourself, done
19 on Marlins?

20 A. On Marlins, themselves?

21 Q. Yes.

22 A. I've only encountered them in case situations, and not
23 often. I would say two or three.

24 Q. So you've never -- you personally have never done the
25 kind of validation study that is reflected in this Shem

1 paper, where they took 500 bullets, fired it through a
2 Marlin, and compared bullet 1 to bullet 500?

3 A. No.

4 Q. What we can say is that you fired two bullets, and that
5 they did not exactly reproduce bullet 1 to bullet 2?

6 A. Nor would I expect them to.

7 Q. If I'm reading your notes and reports correctly, you
8 compared test bullet 1 and test bullet 2 with the evidence
9 bullet, correct?

10 A. Correct.

11 Q. And your conclusion as to -- let's take first test
12 bullet 1.

13 A. Sure.

14 Q. You were not able to make an identification, comparing
15 test bullet 1 with the evidence bullet, 36, correct?

16 A. Correct.

17 Q. You said it's possible, but there's just not enough
18 there in terms of comparative information for you to make
19 the conclusion that test fire 1 and the evidence bullet
20 were fired from the same gun?

21 A. Right. The correspondence I was seeing did not measure
22 up to the criteria I need to make an identification.

23 Q. Okay. Then you compared test bullet 2 with the
24 evidence bullet?

25 A. Correct.

1 Q. And there again, you concluded that there was
2 insufficient comparative information for you to conclude,
3 using your CMS standard, that you could identify the
4 unknown and the test bullet?

5 A. Correct.

6 Q. And it was at that point in your analysis that you
7 decided that you would get some other test fired bullets
8 that were fired not by you, but by the other examiner in
9 New Mexico, correct?

10 A. Well, it was at that point I concluded two things:
11 One, that if I were to take information that I used from
12 both test fired bullets, because it was in different areas,
13 I could have reached an identification. And that is
14 spelled out in my notes.

15 Q. Right.

16 A. Then, because I prefer to get it all on one
17 bullet-to-bullet comparison, I wanted first -- and my
18 primary purpose was to look at the cartridges that were
19 actually recovered with the gun, as well as test fires.
20 Because if I needed to, if the cartridges that were
21 recovered with the gun were of a different make and
22 manufacture than my own test fires, I would have asked for
23 permission to actually test fire those, and I would have
24 produced more test fires.

25 But because those cartridges appeared similar to

1 the ones that I test fired, I then went ahead and examined
2 the other test fires.

3 Q. Okay. Now, you are a proponent of the science of
4 firearms examination, correct?

5 A. Yes.

6 Q. Under certain conditions?

7 A. I am.

8 Q. And it's your view that if certain standardized
9 procedures are followed and there are certain safeguards
10 such as peer review, certification of analysts, adequate
11 protocols, that that is sufficient protection against
12 erroneous conclusions. Would that be fair?

13 A. All of those help to prevent erroneous conclusions.
14 I'm not saying that one will never be reached, but all of
15 those do help to limit.

16 Q. Right. I think that in the Diaz case you testified
17 that you are aware that false positives have been made,
18 correct?

19 A. Correct.

20 Q. Your industry does not have an error rate calculated at
21 this point in the history of its development, correct?
22 There's nothing solid that we can point to that is an
23 acceptable error rate or an established error rate?

24 A. There are only things that give a potential error rate,
25 and those are the proficiency test studies and the

1 validation studies that have been performed.

2 Q. Okay. But in terms of whether there is an established
3 error rate, you believe that there is not at the present
4 time, correct?

5 A. I believe that those studies help to communicate the
6 potential error rate.

7 Q. But you agree, you testified previously there is no
8 error rate that your profession has calculated at this
9 point?

10 A. Correct.

11 Q. Okay. Now, one of the things that you believe is
12 important is protocols of standards, correct?

13 A. Yes.

14 Q. I think that was alluded to in your statement about
15 courts are not going to accept this "I know it when I see
16 it" approach?

17 A. Correct.

18 Q. You have a protocol that the ATF has formulated,
19 correct?

20 A. Yes.

21 Q. That protocol actually establishes CMS as part of the
22 protocol, does it not?

23 A. It establishes CMS and the theory of identification
24 part of our protocol as a manner in which we can describe
25 the pattern agreement. It does not establish the CMS

1 criteria, itself, as the minimum standard.

2 Q. Okay. And you believe that the identification criteria
3 needs to get validated in order for the science to be
4 valid, correct?

5 A. I believe that the criteria that an individual uses to
6 reach an identification should be able to be described and
7 the Court should be able to have confidence that it is
8 based on appropriate review of the literature and our own
9 training and experience.

10 Q. Showing you Exhibit G, is this that portion of your
11 protocol which sets forth the standard for identification?

12 A. This is the protocol that talks about the theory of
13 identification and a range of conclusions.

14 Q. Okay. And what does it say about CMS? I think there's
15 a line in there about CMS.

16 A. There is.

17 Q. If you could read it?

18 A. If I could read it, and I would like to read it in
19 context.

20 Q. Sure.

21 A. If I may.

22 Q. Absolutely.

23 A. Point number 2, approximately halfway down Page 1 of 3.
24 It says, "This sufficient agreement is related to the
25 significant duplication of random tool marks as evidenced

1 by the correspondence of a pattern or a combination of
2 patterns or surface contours. In striated tool marks,
3 correspondence of a pattern relates to the presence of
4 consecutive matching striae." And in parentheses it says
5 "(CMS)."

6 And further down in that same paragraph, it says,
7 "Agreement is significant when it exceeds the best
8 agreement demonstrated between tool marks known to have
9 been produced by different tools." That point then
10 concludes by saying, "The statement 'sufficient agreement
11 exists between two tool marks' means that the agreement is
12 of a quantity and quality that the chances another tool
13 could have made the mark are so small that for practical
14 purposes, it can be disregarded."

15 Q. Okay. Now, nowhere in your protocol does it adopt the
16 numerical criteria that you reference in your direct
17 examination?

18 A. It does not.

19 Q. And is each examiner within the ATF free to use
20 whatever numerical standard he or she feels most
21 comfortable with?

22 A. They do not necessarily use a numerical standard. They
23 will determine whether or not the agreement they are seeing
24 or observing is sufficient for them to reach a conclusion
25 of identification.

1 Whether or not they clarify that or specify that
2 as a run count, most of them do not.

3 Q. Now, when did that CMS language in that protocol get
4 out? Because when you and I talked about this in 2007, you
5 said that ATF did not have a policy about using CMS, and
6 here I see it in the protocol.

7 A. When we talked before -- and I'm not sure of the
8 context in which it was spoken of before, ATF has never
9 adopted the CMS criteria as the criteria that they will use
10 for sufficient agreement.

11 This statement, which is simply a clarification
12 of what a pattern is, was introduced into this document as
13 a result of a meeting that the firearm and tool mark
14 examiners had in Colorado Springs in, I believe, 2002.

15 Q. 2000?

16 A. 2002.

17 Q. But the language about CMS just must recently have been
18 added, right? Because your old protocol, the one you
19 looked at in Diaz, didn't have that language in there, did
20 it?

21 A. I did not examine any case work in Diaz.

22 Q. I'm not asking that.

23 A. Sure.

24 Q. I'm asking what your protocol -- the protocol that's in
25 front of you now references the CMS method. And my

1 question is: Isn't it true that you had an earlier version
2 of that protocol that did not reference that?

3 A. One, CMS isn't a method. It's just a clarification of
4 what a pattern is. And two, it should have been present in
5 the protocol in 2007.

6 Q. Well, let me mark this as next in order.

7 MR. BURT: And this is?

8 LAW CLERK PHYLLIS AMATO: J.

9 MR. BURT: Exhibit J?

10 MR. PORI: Yes.

11 Q. (By Mr. Burt) This was the ATF protocol that was in
12 evidence in the Diaz case in 2007. If you compare the two,
13 it's the exact same section of your protocol, but it
14 doesn't have that language about CMS, does it?

15 A. No, it does not. But also, the date of this revision
16 is 05/2000.

17 Q. 05/2000?

18 A. Correct. And the date of this revision is December of
19 '02. So I do not know why you were given this protocol in
20 the Diaz case.

21 Q. Okay. So at least when that earlier protocol was in
22 place, it did not include CMS as part of the analysis,
23 correct?

24 A. It did not include that CMS language, no.

25 Q. Now, you're familiar with the 2009 National Research

1 Council report that has been referenced here, right?

2 A. Yes, I am.

3 Q. Okay. And one of the things that they say, that I want
4 to ask you whether you agree with this or not, at Page 520,
5 it says, "Recent research has attempted to develop a
6 statistical foundation for assessing the likelihood that
7 more than one tool could have made specific marks by
8 assessing consecutive matching striae. But this approach
9 is used in the minority of cases."

10 Do you agree with that, that the CMS approach is
11 used in a minority of cases?

12 A. I agree that the criteria is used by a minority of
13 examiners. But since consecutive matching striations is
14 inherent in pattern matching, I believe that when an
15 individual is looking at two patterns to see if there is
16 sufficient agreement, they're looking not only at the
17 quality of what they're seeing, but the quantity.

18 So even though they may not phrase their actual
19 identification in terms of CMS, I believe that all
20 examiners are inherently using CMS when they do pattern
21 matching, again, though the actual use of the CMS criteria,
22 which is something different, would be used in a minority
23 of instances.

24 Q. It is true, is it not, that the majority of
25 laboratories do not use CMS as a criteria for

1 identification?

2 A. That is correct.

3 Q. And you are aware that your organization, ATF, (sic)
4 sent out a survey in April of 2006, sent it to 225
5 laboratories, asking them what method they used, right?

6 A. Our laboratory did not send that study out.

7 Q. I'm not saying your laboratory. I'm saying your AFTE
8 organization.

9 A. AFTE organization?

10 Q. Correct.

11 A. Okay. I thought you said ATF. I'm sorry. The AFTE
12 organization did send out a survey, yes.

13 Q. Actually, let me correct that. Maybe I misspoke.
14 Reading from a study called SWGGUN Survey, AFTE Journal,
15 Volume 40, summer of 2008 --

16 A. Correct.

17 Q. It says, the abstract -- I'll be glad to show it to you
18 if you would like.

19 A. I would love to see it, please.

20 Q. Sure.

21 A. Thank you.

22 Q. This is one unfortunately I don't have a copy of, so
23 I'll show you this one.

24 MR. BURT: Do you have one? Okay. This will be
25 next in order.

1 LAW CLERK PHYLLIS AMATO: K.

2 Q. Showing you Exhibit K, take a minute to refresh your
3 memory, and then if you would read for us what the abstract
4 says.

5 A. Okay. I am familiar with the survey, and it was
6 actually put out by SWGGUN. And I'm going to say what that
7 is first. It is the Scientific Working Group for Firearms
8 and Tool Marks. The acronym is SWGGUN.

9 And the abstract reads, "During the April 2006
10 meeting, the Scientific Working Group for Firearms and Tool
11 Marks (SWGGUN) produced a survey to assess the general
12 acceptance of consecutively matching striae (CMS) as a
13 criteria for identification. This survey was sent to 225
14 laboratories from a list obtained from the National
15 Forensic Science Technology Center (NFSTC). A total of 180
16 individuals responded. It was found that the majority of
17 respondents do not use CMS as a criteria for
18 identification."

19 Q. And did they actually survey New Mexico labs in that?

20 A. I would have to review.

21 Q. Sure. I think it's on the next to the last page. I
22 think there's a chart in there somewhere.

23 A. New Mexico is represented with five respondents, one
24 saying that they used pattern matching and CMS, and four
25 saying that they used pattern matching only as a criteria

1 for identification.

2 Q. So would it be fair to say that the CMS criteria for
3 identification is not generally accepted within your
4 forensic community? And by that, I mean the firearm
5 community.

6 A. That's correct, because they believe it to be too
7 conservative.

8 Q. Okay. Now, getting back to your lab notes here, you
9 referenced on direct examination some technique where you
10 combined -- I'm not sure I understand it. Maybe you could
11 explain this to me. You didn't compare the two test
12 bullets and you -- you compared the two test bullets
13 individually and you concluded you couldn't make an
14 identification.

15 And then somehow you combined the information
16 from both test bullets and compared the combination off the
17 two test to the unknown?

18 A. It wasn't a technique, but basically what I do is
19 when I make tests, I expect to see some differences. So
20 what I did is, I looked at all the areas of correspondence
21 that I could observe between one test fire bullet and any
22 other test fire bullet, or the other exhibit, the exhibit
23 bullet.

24 I then had a number of land impressions and/or
25 groove engravers, land engravers with groove engravers that

1 showed some significant correspondence. I then saw some
2 other land engraved areas and groove engraved areas when I
3 looked at T8.2 with the exhibit bullet.

4 Since they were in different areas and I know
5 both test fired bullets came from that gun, I can use both
6 test fires, if I chose to, to reach my conclusion of
7 identification.

8 But since I didn't want to, that's why I asked
9 for the cartridges and the test fired bullets.

10 Q. Is the technique or method or means by which you looked
11 at striae from two separate test bullets and compared that
12 to the question, is that spelled out in the protocol as a
13 method that could be used?

14 A. It's not spelled out in the protocol specifically, no.

15 Q. And you've done a lot of bullet comparisons. Would it
16 be fair to say that it is a fairly unusual technique?

17 A. It is a fairly unusual coarse thing that I would have
18 to use two different bullets to reach my identification,
19 because in the vast majority of my cases, when I am able to
20 reach one, I'm able to reach it on a single bullet to
21 bullet. And that's why I pursued that route.

22 Q. And you've talked to other examiners in your field, and
23 have you ever heard of anybody using that technique or seen
24 any literature that subscribes to the validity of the
25 technique of combining test bullet information and

1 comparing it against the unknown?

2 A. I know of other examiners, and while they feel that it
3 is appropriate to be able to do that, they again would
4 prefer to see it on a single bullet-to-bullet comparison.

5 Q. And in fact, you put in your notes, "Ideally, I would
6 see such sufficient correspondence on a single bullet,"
7 correct?

8 A. Correct.

9 Q. And I take it since you took some further steps beyond
10 doing that comparative analysis, that you, yourself,
11 weren't comfortable reaching conclusions based upon that
12 comparative analysis, right? Otherwise, you wouldn't have
13 -- you could have said, "I got it. I don't need any test
14 bullets. I can combine these two, compare it to the
15 unknown, and make a match"?

16 A. I felt exactly, as I stated in my notes, ideally I
17 would like to see this on one bullet-to-bullet comparison,
18 and that's why I pursued that route.

19 Q. Do you know, besides the ATF protocol, is there any
20 other protocol in the nation that subscribes to that
21 method, that you're aware of?

22 A. I do not know that it is specifically laid out as such
23 in any protocol.

24 MR. BURT: Your Honor, this might be a good place
25 to stop. I was going to go into another topic.

1 THE COURT: All right. Let's go ahead and break
2 for lunch. Let's come back at 1:30.

3 MR. BURT: Thank you.

4 THE COURT: All right. We'll be in recess.

5 (Recess from 12:04 p.m. until 1:32 p.m.)

6 THE COURT: You may resume cross-examination,
7 Mr. Burt.

8 MR. BURT: Thank you.

9 CONTINUED CROSS-EXAMINATION

10 BY MR. BURT:

11 Q. Mr. Nichols, I want to ask you some questions about
12 your notes here. Directing your attention to Exhibit
13 Number 3, Page 9 of your notes, which I've put up on the
14 screen, can you read those? And if we have the exhibit,
15 maybe I'll put it in front of you.

16 A. I think I would prefer the exhibit in front of me.

17 Q. Sure.

18 A. Thank you.

19 Q. Page 9 of your notes represents your documentation of
20 the comparisons that you made across the various lands and
21 grooves that you were looking at on the question bullet and
22 your test fires, correct?

23 A. Correct.

24 Q. And is this the standard way in which firearm examiners
25 document their observations?

1 A. I believe this to be more thorough than what is
2 generally performed and practiced.

3 Q. What is generally performed and practiced?

4 A. A narrative with some discussion as to what particular
5 land impressions they may have found, some correspondence.

6 Q. Exhibit next in order --

7 MR. BURT: Which is what?

8 THE WITNESS: K?

9 MR. BURT: K?

10 LAW CLERK PHYLLIS AMATO: I think it is -- let me
11 check. You have a K already. L. I'm not sure what it is.
12 Here it is, right here, K.

13 MR. BURT: You know what, we've already got this
14 marked. No need to re-mark it. This is -- no, it's not
15 marked.

16 LAW CLERK PHYLLIS AMATO: So you need L marked?

17 MR. BURT: L would be document 235-3.

18 Q. Showing you Exhibit L and directing your attention to a
19 sheet which is marked Firearm Section Bullet Worksheet,
20 would --

21 MS. NEDA: Excuse me. What is Exhibit L?

22 MR. BURT: L is 235-3.

23 MS. NEDA: That's from the other examiner?

24 MR. BURT: Yes. Do you need that?

25 MS. NEDA: No. Well, let me look at it. I

1 didn't bring a copy.

2 MR. BURT: Sure.

3 Q. (By Mr. Burt) In terms of this standard of practice,
4 looking at Exhibit L and directing your attention to this
5 sheet called Firearm Section Bullet Worksheet, obviously
6 just looking at it and comparing it to yours, yours is
7 much more detailed in terms of describing what comparisons
8 you were making and the results of your observations,
9 correct?

10 MS. NEDA: Your Honor, this exceeds the direct
11 examination. I assume he's going to have Mr. Guerra to
12 speak with, but I haven't asked Mr. Nichols to review
13 Mr. Guerra's work either in preparing for his testimony,
14 nor did I ask him to render an opinion on Mr. Guerra during
15 my direct examination. So I think this line of questioning
16 will exceed my direct examination.

17 MR. BURT: That might be true, but I would ask to
18 call him as my own witness. I can go on to another
19 subject, but at the end of my cross or at the end of his
20 examination, I would seek to elicit some testimony that is
21 relevant to the other examination, since they're both at
22 issue.

23 THE COURT: Are you trying to use this witness to
24 call into question what Guerra did?

25 MR. BURT: Essentially, I am going to ask him for

1 an opinion about his documentation versus the other
2 examiner's documentation. And the question for me is
3 whether he can look at the other documentation and tell the
4 basis for the expert's opinion. And I believe this expert
5 will say that's an important part of the reliability, would
6 be the proffer.

7 THE COURT: What is your response, Ms. Neda? I
8 mean, technically, I agree with you. It does exceed the
9 scope of your direct. But I suppose he could turn around,
10 as he said, and re-call this witness to the stand.

11 MS. NEDA: I'm not so certain he could. Mr.
12 Nichols is here in a Daubert hearing. He is not here to
13 render an opinion on another expert's work, and I'm not
14 certain --

15 THE COURT: And that may be true from a
16 disclosure standpoint.

17 MS. NEDA: Because there was an effort to keep
18 him blind from everything involving the New Mexico DPS. As
19 you recall in his testimony, he didn't even know the
20 results, the conclusion, when he conducted his tests so
21 that he would be unbiased and blind in conducting his own.
22 He didn't even know there was a match until he did his
23 test.

24 MR. BURT: But that's a different issue.

25 MS. NEDA: Well, I don't even know if --

1 THE COURT: Well, here's what I'm going to do.
2 For purposes of trial -- I mean, I'm not so sure -- in
3 other words, if you want to do this at trial, I may very
4 well preclude any kind of questioning on that. But for
5 purposes of making a record here, I'll allow the question
6 and give the government a standing objection, and I'll take
7 the objection under advisement.

8 MS. NEDA: And one more thing I would say, so I
9 don't continue to interrupt. Without any foundation as to
10 protocol that New Mexico DPS follows, I would also have an
11 objection as to him testifying and comparing his protocol
12 to New Mexico DPS.

13 THE COURT: I think, yes, that's a valid point.
14 I think there would have to be a foundation laid. So
15 Mr. Nichols, you've done this, testified enough, where if
16 you feel that you can't answer a question because it is
17 calling for you to speculate, then you can indicate.

18 THE WITNESS: Okay. Thank you.

19 Q. (By Mr. Burt) Mr. Nichols, my question is whether,
20 looking at that bullet worksheet and comparing it to your
21 documentation of your comparisons, you were able to figure
22 out what this other person is doing in terms of a basis for
23 his opinion?

24 A. Not completely.

25 Q. Okay. And that's a subject you've written about,

1 correct? In terms of the scientific reliability of your
2 field, one of the points you made in your literature is
3 that the important issue is whether the examiners are
4 documenting and explaining the basis of their opinion?

5 A. If I may, in order to interpret this correctly, I would
6 need the policies and procedures and understand whether or
7 not their laboratory is accredited through ASCLD Lab.
8 Because, if I may, it would only be speculation on my part
9 to place my over-documentation standards onto someone else.

10 In some instances, some policies and procedures
11 are set in place to help reduce the documentation that
12 needs to take place in a specific case record. I don't
13 know if that's the instance in this case.

14 Q. Okay. Fair enough. And I'm not asking you to compare
15 what's in front of you on this document with what you
16 referred to as over-documentation. I'm just asking,
17 looking at this worksheet, can you tell the basis of the
18 examiner's conclusion, just looking at the worksheet and
19 the attached photos?

20 A. The attached photos are not of a quality, in the Xerox
21 copy, for me to assess those. Based on what I'm observing
22 here, I am seeing that the examiner recognizes that class
23 characteristics are similar, in that he documents in the
24 photographs what he believes to be sufficient
25 correspondence to reach an identification.

1 Q. Okay. And I noticed here that he is measuring, if I'm
2 reading this correctly, land width, groove width, and
3 weight, correct?

4 A. Correct.

5 Q. And your protocol, I believe, says specifically the
6 relative height or depth, width, curvature, and spatial
7 relationship of the individual peaks, ridges, and furrows
8 within one set of surface contours are defined and compared
9 to the corresponding features in the second set of surface
10 contours.

11 That's the methodology in your protocol, right?

12 A. Yes.

13 Q. Okay.

14 A. And that refers to individual features. The
15 measurements that he has on there for land width and groove
16 width would refer to class characteristics and not
17 individual features.

18 Q. Okay.

19 A. The photographs would represent the individual contours
20 that he was actually comparing on one bullet to another
21 bullet.

22 Q. Okay. And one question: You've got -- how many photos
23 did you take in your documentation?

24 A. I took 63.

25 Q. And that's 63 photos of every land and groove

1 impression on the question bullet?

2 A. Almost. If not every land and groove impression on the
3 question bullet, not every one is documented in a
4 photograph, then I would estimate that most every one.

5 Q. And did you do that because, in your opinion, you've
6 got to look at the whole picture before you draw
7 conclusions in your field?

8 A. Yes.

9 Q. Do you think you can make an identification based on
10 one comparison -- in other words, one land comparison or
11 one groove comparison -- and ignore the rest of the bullet?

12 A. I believe it is possible, but I would never ignore the
13 rest of the bullet.

14 Q. Your protocol talks about comparing the relative height
15 or depth or width of the individual peaks. That's
16 referring to the individual characteristics, correct?

17 A. In the pattern that they create, yes.

18 Q. And how in this case did you measure the relative
19 height or depth or width of the peaks?

20 A. It's a comparative examination only, so that when we
21 put one bullet on one side of the microscope and the other
22 bullet on the other side of the microscope, we are looking
23 -- if the relative height, distance, and whatever else that
24 protocol says, if those all are comparable, we don't
25 actually measure them. Because on a comparison microscope,

1 we don't have to actually discretely measure them.

2 In fact, I believe, and many firearm and tool
3 mark examiners believe, that the mind's ability to
4 discriminate on a comparison microscope is more accurate
5 than our ability to actually measure the actual height,
6 width, and location of those individual striations.

7 Q. So let me see if I got this straight. Although the
8 protocol refers to the relative height or depth or width of
9 the individual characteristics, you did not measure any of
10 those features in this case, correct?

11 A. Again, relative in that protocol means that they are
12 the same as another, so that if we could put them on a
13 comparison microscope, we can discern whether or not they
14 are the same as one another without actually measuring
15 those.

16 Q. Just from mind's eye kind of view?

17 A. Just by looking at it on a comparison microscope and as
18 documented in our photographs.

19 Q. So the answer to my question is -- you do not -- you
20 did not measure in this case the height, depth, or width of
21 any of the individual characteristics on the unknown and
22 compare those measurements to the same features on the
23 known, correct?

24 A. No, I do not.

25 Q. Okay. Now, you see in this Exhibit J there are -- it

1 looks like bad photocopies of two photographs, correct?

2 A. Correct.

3 Q. Okay. And if I could have the laptop. First of all,
4 this bullet that you are examining in this case was a
5 damaged bullet, correct?

6 A. Yes, it was.

7 Q. And in the validation studies that you referenced in
8 your direct examination, how many of those validation
9 studies examined damaged bullets?

10 A. None.

11 Q. None?

12 A. None.

13 Q. And in the literature, there are writings by you and
14 others indicating that there is clearly a difference
15 between case bullets that have been through bodies or
16 surfaces, and pristine bullets that are shot into a bullet
17 tech, correct?

18 A. Sure. Because the former can be more difficult.

19 Q. This photo which I have up -- and for the purpose of
20 the record, I'll have marked next in order the CD which has
21 the photocopies on it that I'm going to reference, get them
22 up on the screen at this point.

23 The first photo I'm going to show to you is
24 discovery number 1868, and this photo shows the microgroove
25 rifling of the barreling in this case, assuming these

1 photos are from this case. I'll ask you to make that
2 assumption.

3 A. What is depicted in that photo is the inside of a
4 barrel with microgroove rifling.

5 Q. One of the things about microgroove rifling which makes
6 it unique is that the grooves are very narrow, are they
7 not?

8 A. They are.

9 Q. And that's one of the reasons why, with microgroove
10 rifling, that you sometimes don't get the characteristics
11 transferred to the photo; isn't that true?

12 A. Yes.

13 Q. And also because of the narrowness, it makes it hard to
14 measure because there are so many lands and grooves packed
15 into the cylinder of the bore, correct?

16 A. It doesn't necessarily make it difficult to measure the
17 actual width of the grooves or the width of the lands.

18 Q. In this case, you didn't measure them anyway?

19 A. I did measure the width of the lands and the grooves.

20 Q. Okay. Now, showing you what is discovery Page 1872 --
21 and I realize you didn't take these photos; these were
22 taken by Mr. Guerra -- but does this generally depict what
23 the question bullet looked like?

24 A. Generally, yes.

25 Q. Were you given any history on what path the bullet

1 traveled, what it went through, where it was found, things
2 of that nature?

3 A. No.

4 Q. Were you given any history on the weapon in the sense
5 of when it supposedly was fired and where it was from the
6 time it was fired until the time it was recovered?

7 A. The answer to that -- and I need to clarify my first
8 answer.

9 Q. Yes, go ahead.

10 A. At the time of my examination, no. And at the time of
11 my examination with regards to the rifle, I had no
12 information.

13 Q. And have you since obtained that information?

14 A. Yes.

15 Q. What is your understanding?

16 A. My understanding is that the bullet was recovered from
17 a refrigerator, and that the gun had been recovered from a
18 spot a number of months after the actual shooting. That is
19 my understanding. I could be incorrect.

20 Q. Do you know where the gun was in terms of environmental
21 conditions? Was it outside, inside, from the time it
22 supposedly was shot until the time it was recovered?

23 A. I don't recall that part of the discussion, if I had
24 one.

25 Q. That generally is important information, is it not?

1 Because the barrel of a rifle can change if it's left in --
2 say if it's left out in the environment, things can happen
3 to that gun which makes it a different barrel than when it
4 was shot?

5 A. The conditions would have to be pretty significant. In
6 a barrel, such a long barrel as the Marlin rifle, it would
7 have to be in the water or some other very significant
8 conditions. But also, when I prepared a cast of the inside
9 of the barrel, I did not notice any unusual environmental
10 degradation of the inside surface.

11 Q. Were you able to compare that cast with what the barrel
12 looked like when it was shot, allegedly, in July?

13 A. No.

14 Q. That would be one way to determine if there were any
15 changes in the barrel between those two points in time,
16 right?

17 A. That would be one way of determining it, yes.

18 Q. Now, looking at your notes, did the condition of this
19 bullet, in certain of your comparisons, prevent you from
20 making comparisons? As you went land by land, groove by
21 groove, don't your notes reflect that you had one area in
22 your knowns, and you had a damaged area in the unknowns, so
23 that you couldn't make the comparison?

24 A. My notes do reflect that.

25 Q. Okay. And one of the things I noticed you kept

1 referring in your direct examination to "compelling"
2 similarities. Do you remember that word, "compelling"?

3 A. Yes.

4 Q. But I don't see that word in your notes. What I see in
5 your notes are characterizations of the comparisons as
6 being either fair or limited. Have I got that right?

7 A. Or in some instances, fair plus.

8 Q. Fair --

9 A. Plus.

10 Q. Fair plus. So in your protocol, is there a hierarchy
11 of comparisons that you are relying on? In other words,
12 does it spell out in the protocol, if you get a certain
13 level of correspondence, that's a limited comparison; if
14 you get more than that, it's fair; and if you get something
15 above that, it's fair plus?

16 A. Or good.

17 Q. Or good?

18 A. The answer is "No." Those are notations that I've used
19 throughout my career. And that's why I take photographs,
20 as well, so that when I say something is "limited" and
21 there's a photograph of it, an individual who is reviewing
22 my case record can understand what I mean by "limited."

23 Q. One of the criticisms of CMS is that like the "I know
24 it when I see it" approach, CMS too is subjective. Is that
25 one of the criticisms?

1 A. That is one of the criticisms, and I do not necessarily
2 agree with that criticism in whole.

3 Q. Explain to me what the basis of that -- and by the way,
4 that criticism doesn't just come from Dr. Schwartz,
5 correct?

6 A. That's correct.

7 Q. There are firearm examiners who also contend that CMS
8 is subjective, correct?

9 A. Yes.

10 Q. For instance, Dr. Bunch at the FBI?

11 A. Yes.

12 Q. Who is Dr. Bunch? What is his position at the FBI?

13 A. He is head of the firearm and tool mark unit.

14 Q. And he has written a critique of the CMS method. And I
15 realize you don't like to call it a method, but putting
16 that linguistic issue aside, it's true that he has written
17 a criticism of CMS, correct?

18 A. He did. I think it was back in 2000.

19 Q. And one of his criticisms is that just like the "I know
20 it when I see it approach," CMS is subjective?

21 A. That's what he says, yes.

22 Q. And one of the ways in which it would be subjective --
23 and again I understand you disagree with this criticism --
24 is that in characterizing the comparisons as limited, good,
25 or good plus, those are subjective calls, are they not?

1 A. Those are subjective terms, but that is not the basis
2 for the criticism.

3 Q. Okay. What is the basis for the criticism?

4 A. The basis for the criticism is that there has been
5 concern in the past that different examiners, when they're
6 looking at similar patterns, that they may count the number
7 of consecutive lines differently. They were concerned that
8 there was no standard as to what a line is, and when it
9 corresponds.

10 And I disagree with that on a number of different
11 reasons or for a number of different reasons. One, is that
12 individuals who have used CMS have defined what they will
13 use when they count a particular striation as part of a
14 pattern. It will have to exist for a certain length on the
15 surface of the bullet, and it will have to be the same in
16 relative distance, as well as height and width, as the
17 striation from another bullet.

18 In addition, in I think it was 2003, James
19 Hamiel, Fred Tulleners, and Mike Giusto did a study on CMS
20 that demonstrated that once we get to three CMS and above,
21 that the results of moderately trained students would be
22 pretty reasonably close to one another.

23 So I did not feel -- yes, in some instances.
24 Everything is subjective. But I don't think it is nearly
25 as subjective as Dr. Bunch pointed it out to me.

1 Q. And my main point here is that although you disagree,
2 there is controversy, difference of opinion on this
3 particular point, correct?

4 A. Yes.

5 Q. And there is a controversy and difference of opinion on
6 CMS versus the traditional approach, in the sense that some
7 people like Dr. Bunch are advocates of "I know it when I
8 see it approach," and there are other people like yourself
9 who are advocates of CMS?

10 A. There is a difference in opinion as to whether or not
11 the CMS satisfies an appropriate criteria. And again, they
12 believe it's too conservative upon which to base
13 identifications.

14 Q. Dr. Bunch has criticism beyond "it's too conservative,"
15 right?

16 A. Yes, he does.

17 Q. In fact, those words don't appear in his critique, do
18 they?

19 A. I don't recall those words in his critique, although
20 they have been mentioned in discussions that we have had.

21 Q. I mean, one of his main criticisms is that CMS has not
22 been validated; isn't that true?

23 A. The criteria has not been validated.

24 MR. BURT: Well, let me have this marked as next
25 in order.

1 Q. Showing you Exhibit N, is this the paper we've been
2 talking about, Dr. Bunch's 2000 article in the Journal of
3 Forensic Sciences called Consecutive Matching Striation
4 Criteria, a General Critique?

5 A. Yes.

6 Q. Okay. And one of the things he says in this paper is,
7 quote, "At this point, it must be observed that there is no
8 rational or scientific ground for making claims of absolute
9 certainty in any of the traditional identification sciences
10 which include fingerprints, documents, firearms, tool
11 marks, and shoe and tire tread analysis." You agree with
12 that statement, don't you?

13 A. I do.

14 Q. Okay. And then he goes on to set out a fairly lengthy
15 critique of the CMS approach?

16 A. Correct.

17 Q. You're okay with the word "approach"?

18 A. Yes.

19 Q. Okay. Let's stick with that, then. And one of the
20 things he says on the heading on Page 39959, under the
21 heading Practical Difficulties, the first criticism he has
22 is it oversimplifies reality.

23 A. Well, the use of CMS --

24 Q. Let me stop you there. That's what he says, correct?

25 A. That's what he says, yes.

1 Q. And do you understand the gist of his criticism that it
2 oversimplifies reality?

3 A. Yes.

4 Q. Can you explain what the gist is, and then you can
5 explain your response, just in fairness, so we can take
6 this point by point?

7 A. Sure. The criticism is that it oversimplifies what a
8 pattern looks like, when we reduce it to simple numbers.
9 Because in this criticism, he was concerned that we're just
10 looking at the number of lines that correspond. I don't
11 agree with that. It is a simplified model. That, I agree
12 with.

13 But I do feel that since we are looking at
14 relative height, width, and distance of a particular
15 striation and a combination of those marks, as it calls for
16 in the AFTE theory of identification, I believe it's a
17 simplified model in which we can describe what we're
18 seeing.

19 But to classify it as oversimplifying reality, I
20 wouldn't necessarily agree with that point.

21 Q. Okay. And then the next point he makes is: Next comes
22 the question of subjectivity in counting striations.

23 That's the topic we just talked about, right?

24 A. Correct.

25 Q. Then he says, "A more serious problem obtaining a truly

1 valid and usable CMS regime would necessitate a large scale
2 research program involving numerous varieties of bullets
3 and barrels, tens of thousands of test firings, and
4 possibly careful mathematical curve fitting."

5 That's another one of his criticisms, correct?

6 A. He does state that, yes.

7 Q. And that goes to the lack of validation for CMS?

8 A. That's what he is pointing out, yes.

9 Q. And essentially, that echoes what the 2009 National
10 Research Council report says about the literature, doesn't
11 it?

12 A. It does.

13 Q. In other words, their main critique of the
14 literature -- this is Page 521 in the study -- "Although
15 some studies have been performed on the degree of
16 similarity that can be found between marks made by
17 different tools and the variability in marks made by an
18 individual tool, the scientific knowledge base for tool
19 mark and firearm analysis is fairly limited."

20 And they go on to cite the Hamby, Brundage, and
21 Thorpe summary of all the studies you've been talking
22 about, right?

23 A. Yes.

24 Q. And they say, "The capsule summaries suggest a heavy
25 reliance on the subjective findings of examiners rather

1 than on the rigorous quantification and analysis of sources
2 of variability"?

3 A. That's what they do say, yes.

4 Q. And essentially, that's the same point that Dr. Bunch
5 was making or made back when he wrote this article?

6 A. Well, Dr. Bunch is talking about CMS in particular.
7 And it should be pointed out that I don't agree with Dr.
8 Bunch's statement because I feel that at this time he was
9 not recognizing what the CMS approach was and that he
10 lacked a fuller understanding of it.

11 In fact, I've seen affidavits later, more
12 currently, in which he recognizes that as just an extension
13 of what we do in pattern matching.

14 Q. You, yourself, have critiqued these studies in much
15 the same way that the NAS and Bunch have critiqued them,
16 right?

17 A. Yes.

18 Q. In your article, Consecutively Matching Striae, which
19 has been marked and introduced as an exhibit, you say that
20 these studies, quote, "Suffers because each fails to
21 articulate a criterion for identification in a manner that
22 can be fully understood and visualized by another examiner
23 without having to repeat -- without having to resort to
24 repeating the study for him or herself"?

25 A. Yes.

1 Q. Okay. And when Dr. Bunch talks about the need for
2 large scale research programs involving numerous varieties
3 of bullets and barrels, he's touching there on the limited
4 nature of the work that has been done in the sense that it
5 hasn't covered all the various manufacturing processes in
6 barrels, right?

7 A. He is saying that with respect to CMS only.

8 Q. Right.

9 A. And there haven't been studies that have applied the
10 CMS approach to all those different things.

11 Q. For instance, some of the studies you cite in your
12 writings have to do with chisels, for instance, right?

13 A. Correct.

14 Q. Would you apply a validation study involving chisels,
15 and generalize from that, that the same result would be
16 obtained from microgroove rifle barrels, without doing the
17 validation work on the microgroove barrels?

18 A. I would look at the manufacturing methods. And
19 microgroove rifling pertains, again, to the width of the
20 grooves and the number of lands and grooves in the barrel.
21 It does not necessarily reflect the actual method that was
22 used to produce the rifling.

23 The actual method that was used to produce the
24 rifling was a suage method. The drill and reaming marks
25 that are left on the inside surface of the barrel are

1 individual in nature, which produce striated tool marks.
2 So I do feel that it is appropriate to look at studies of
3 striated tool marks, in general, to draw more specific
4 conclusions.

5 Q. When you say that the manufacturing process produces
6 individual marks, what is that opinion based on? What
7 study has looked at whether the Marlin manufacturing
8 process produces individual marks when bullets are fired
9 from microgroove barrels?

10 A. There have been no studies that, again, have looked at
11 microgroove rifling. But there have been a number of
12 studies that have looked at the button suage method of
13 rifling. And in these empirical studies, examiners have
14 been able to determine that the striated tool marks that
15 are going to be found on the surface of barrels will be
16 individual in nature and that there will be sufficient
17 distinction between consecutively made barrels, such that
18 one would not reach a misidentification.

19 Q. And that is really the gist of the NAS report's
20 criticism of the literature, is it not, that you cannot
21 generalize from one group of studies to the next without
22 actually doing the studies?

23 A. They are saying that in general, yes.

24 Q. Okay. And you may disagree with it, but that is what
25 their criticism is?

1 A. And I believe it's an unfounded criticism.

2 Q. All right. You would agree that the National Research
3 Council is a force to be contended with, correct?

4 A. I would agree.

5 Q. And the reason you would agree is because they are
6 tasked with resolving the kind of controversies that
7 underlie what we've been talking about here, correct? I'm
8 not asking whether they were tasked to do it in this case.

9 I'm asking you, in general, one of the functions
10 of the National Research Council is to look at
11 controversies within a scientific field, use pre-eminence
12 and scientists who investigate issues, and write reports
13 which hopefully would reach a consensus of the scientific
14 community?

15 A. I would agree with the first two parts. I'm not sure
16 about the third. I do know that they exist as an arm to
17 advise the federal government on matters.

18 Q. And they have a review process before they issue these
19 reports, do they not?

20 A. They do.

21 Q. And they also have a process for getting input from
22 various scientists before they actually issue the reports?

23 A. They do.

24 Q. By the way, you said that the first report, the 2008
25 report, there was nobody on the committee who was a

1 firearms examiner?

2 A. Correct.

3 Q. The report indicates, does it not, that they submitted
4 it for review to the same gentleman who testified in front
5 of the 2001 committee?

6 A. I don't know if the report states that or not.

7 Q. No? And the review process would be -- showing you
8 Exhibit C and directing your attention to Page XVI, doesn't
9 the committee state, "We thank the following individuals
10 for their participation in the review of this report," and
11 then they list a bunch of people?

12 A. Okay.

13 Q. I think on that second page is the gentleman whose name
14 I can't pronounce, but I'll spell it.

15 A. It's Striupaitis. Do you want me to go ahead and spell
16 it? S-T-R-I-U-P-A-I-T-I-S. It does say that he did review
17 it. It does not mean that they accepted his comments.

18 Q. Right. And part of the process that the NRC engages in
19 is to get input, to consider the input, and then make a
20 decision if there's a controversy, right?

21 A. I would hope so.

22 Q. And the same is true of the 2009 report? One of the --
23 the process by which that report was written included
24 eliciting views from various people on the subject of the
25 various disciplines that were considered?

1 A. Yes.

2 Q. And you indicated that your paper was referenced in the
3 report, as well as Dr. Schwartz's, correct?

4 A. Yes.

5 Q. So from the fact that they reference the reports, do
6 you assume that the committee had before it the basic
7 controversy between your position and Dr. Schwartz's
8 position?

9 A. Yes.

10 Q. And by the way, Dr. Schwartz is not in isolation in
11 critiquing your field, is she? Is she the only one that's
12 raising criticisms?

13 A. No.

14 Q. You reference the publication by Dr. Saks, in which
15 Murdock and I think you said Biasotti had written a
16 chapter?

17 A. Correct.

18 Q. Dr. Saks essentially has made the same criticisms as
19 Dr. Schwartz has made, has he not, about your field?

20 A. Yes. Dr. Saks is a law professor.

21 Q. And he has a Ph.D. in social science?

22 A. I don't know what his Ph.D. is in.

23 Q. You are familiar with the paper he wrote in the
24 publication Science, called The Paradigm Shift -- finish it
25 for me.

1 A. I can recall the words Paradigm Shift, and I do know
2 that Michael Saks and Koehler -- last name Koehler; he's a
3 statistician -- wrote that paper as an invited editorial
4 to comment on the state of firearm and tool mark
5 identification, among other disciplines.

6 Q. Okay. And one of their criticisms echoes Dr.
7 Schwartz's, and that is that your field is deficient
8 because you don't have a statistical basis similar to DNA
9 databases, correct?

10 A. That's what they say, yes.

11 Q. And you don't necessarily disagree with that criticism,
12 do you?

13 A. I don't believe that statistical databases are
14 necessary, although it would be nice. Because you
15 remember, I talked about to the practical exclusion of all
16 other guns. It would be nice if we could provide the Court
17 with some sort of probability. And the way the current
18 state of the art of the literature is right now, we cannot
19 do that.

20 Q. You testified in the Diaz hearing that you thought
21 providing statistical numbers would be helpful, correct?

22 A. I do believe it would be helpful, yes.

23 Q. And you have actually written papers with statisticians
24 in an attempt to provide some statistical model for your
25 field; isn't that true?

1 A. Yes, I have.

2 Q. But, however, you feel that the statistical aspect of
3 your field is not ready for prime time at the present,
4 correct?

5 A. It is not sufficient enough.

6 Q. At this point?

7 A. At this point.

8 Q. Okay. And to that extent, you agree with the 2009
9 report, do you not, because they make that same point?

10 A. They made the point that they feel statistics are
11 necessary. I would not make that point. I would make the
12 point that statistics would be more helpful.

13 Q. You also agree with Dr. Schwartz that there are
14 legitimate issues about bias, contextual bias, things of
15 that nature, right?

16 A. There are concerns, yes.

17 Q. And you also agree with Dr. Schwartz that the
18 proficiency tests are not a true measure of error rate?

19 A. They are not, because of the limitations I discussed
20 earlier.

21 Q. And there are people out there that say one of the
22 reasons they are not a good indicator of error rate is
23 because they are too easy?

24 A. That is one of the concerns, yes.

25 Q. That is expressed not only by Dr. Schwartz, but people

1 within your profession, right?

2 A. Yes.

3 Q. Keith Inman, for one?

4 A. Keith Inman is not a firearm and tool mark examiner.

5 He is a general scientist.

6 Q. But he is not an academic; he is somebody who does
7 casework?

8 A. Yes.

9 Q. And he and other scientists have said these proficiency
10 tests cannot be used to establish error rates because
11 they're too easy?

12 A. I'm not familiar that Keith Inman specifically said
13 that, but I do know that, one, they are easy, and that is a
14 concern that firearm and tool mark examiners have
15 expressed, themselves.

16 Q. Dr. Bunch, in his article, also explains what he calls
17 theoretical problems with CMS, correct?

18 A. Where would those be?

19 Q. The very next page from the one we're on, 960.

20 A. All right.

21 Q. First, the final practical objection he raises is that
22 "There is difficulty explaining and defending in the
23 courtroom conclusions resting on a CMS regime"?

24 A. Where does he say that?

25 Q. It's the paragraph before the heading Theoretical

1 Problems.

2 A. Yes. The beginning of that final paragraph says, "The
3 final practical difficulty involves explaining and
4 defending in the courtroom conclusions resting on a CMS
5 regime."

6 Q. And then he reviews a number of theoretical problems,
7 correct?

8 A. Correct.

9 Q. And one of them is, he says, "The more serious weakness
10 in CMS counting, however, is that evidence bullets are not
11 fired in new clean barrels, as would be your research
12 bullets. Real barrels change over time."

13 A. I would make the same claim for any bullets that we
14 examine in comparative analysis.

15 Q. So that same criticism would apply to the "I know it
16 when I see it" approach?

17 A. And it's not a weakness. It's just a concern, and it's
18 a limitation that we can have, that when we're looking at
19 damaged bullets, it just makes the comparison more
20 difficult.

21 Q. Now, after detailing all these criticisms, the
22 conclusion that Dr. Bunch draws is that "Since there are
23 all these problems with CMS, therefore the scientific
24 method or the best method to use is the 'I know it when I
25 see it approach'," correct?

1 A. That's what he said.

2 Q. And you disagree with that conclusion, do you not?

3 A. I disagree, because I think it mischaracterizes what
4 CMS is, and I think it also mischaracterizes the criteria.

5 Q. And you have also said that if his criticisms are true,
6 then the same would apply to the "I know it when I see it"
7 approach?

8 A. I have said that, yes.

9 Q. And you've said that if you're going to look at lack of
10 validation, the lack of validation argument would apply
11 equally to the "I know it when I see it" approach?

12 A. And that's why I did not believe in his arguments.

13 Q. Okay. If we could for a moment go back to the
14 photos -- and I appreciate your patience. These, I
15 believe, are the photos attached to that worksheet I showed
16 to you. And this one is -- if you look -- you're free to
17 look to make sure that I'm correct, but this is what
18 appears to be a 32X photo of the unknown and the known.

19 Can you look at this photo, as an experienced
20 firearms examiner, and say, "Well, based on this photo,
21 this is a clear identification"?

22 A. I would never say that from photographs.

23 Q. And why not? Why in this case would you not say it
24 based on this photo?

25 A. Well, one, they show two different case numbers with

1 the same exhibit number, so I'm not confident that I know
2 what is actually taking place in the photographs. I see
3 some correspondence of markings on these two items. The
4 first one is, if we look again, the shoulders are in
5 alignment, and there is a clear line going down that center
6 of that land engraved area that is continuous.

7 The photograph is slightly out of focus, and it
8 only represents one small piece of what this examiner
9 observed.

10 Q. So this, standing alone, would not be adequate
11 documentation of an identification, in your opinion?

12 A. I would document more.

13 Q. So your answer is, it would not be adequate
14 documentation, based on your standards?

15 A. Again, we cannot make identifications from photographs.

16 Q. Okay. And showing you the second photo, which is a
17 Xerox -- this is Page 1883 of the discovery -- could you
18 make an identification based on this comparison? And I
19 understand the point that you need to look at the bullets
20 as well as the photos, but the purpose of the documentation
21 is to document the comparisons, is it not?

22 A. In our laboratory, it is.

23 Q. Right. And does this photo document a comparison that
24 you can say, "Well, clearly this is an identification based
25 on this photo alone"?

1 A. No.

2 Q. Are there differences between the left and the right
3 photo here?

4 A. I do see differences, yes.

5 Q. And where would the differences be?

6 A. The differences include the fact that the photo on the
7 right, or the image on the right, has clearly two strong
8 lines, but there is some information in the middle that's
9 missing. I don't know if it's not there because of the
10 position of the bullet or it's not there, in general.

11 So it could be there, and I'm just not seeing it
12 because that part of the bullet is not visualized in this
13 photograph.

14 Q. But you do see differences here between the one on the
15 left and the one on the right?

16 A. I do.

17 Q. The fingerprint people say that one of the guarantees
18 of reliability in their field is what's called the one
19 dissimilarity rule. Are you familiar with that rule?

20 A. I'm not completely familiar enough with fingerprints to
21 talk about their criteria.

22 Q. Let me state what I believe it is and ask you if
23 there's something similar in your field. The one
24 dissimilarity rule, as I understand it, is that no matter
25 how many points of similarity between the unknown and the

1 known, if there is one unexplained dissimilarity, you
2 cannot make an identification.

3 Is there something similar to that sort of rule
4 in your field?

5 A. No, there is not.

6 Q. And the reason there's not is because each bullet fired
7 from one gun is always going to have differences?

8 A. Correct.

9 Q. Correct? So you don't have -- to the extent that, you
10 know, that would be pointed to as some sort of safeguard,
11 you don't have a rule that says if you've got a
12 dissimilarity, as you do in this photo, that it has to be
13 declared a non-match?

14 A. That is correct.

15 Q. Are there any sort of rules for how much dissimilarity
16 there has to be before you declare a non-match?

17 A. The theory of identification, as published by AFTE,
18 talks about the amount of correspondence we would -- the
19 sufficient similarity has to be such that it exceeds the
20 amount that we would expect to see in tool marks known to
21 have been produced by different tools and approaches that
22 we would expect to see in tool marks produced by the same
23 tool. So there is no hard, fast number.

24 Q. Now, in some of the validation studies that you discuss
25 in your papers -- in particular the Miller papers --

1 A. Yes.

2 Q. His method of analysis was to use the computer database
3 system to generate some comparisons, correct?

4 A. He used the NIBIN system to generate some comparisons,
5 yes.

6 Q. And the NIBIN system is a bullet database? Or a
7 cartridge case database?

8 A. Both.

9 Q. And ATF has access to this system?

10 A. Yes, we do.

11 Q. Was the methodology that Miller used in his validation
12 studies to take a bullet, run it through the database, and
13 then come up with a candidate list of potential matches?

14 A. Yes.

15 Q. And then he looked at the question against the
16 candidate list to determine from -- these are now all
17 different bullets -- how much the two bullets -- how much
18 similarity there was between the question and the list of
19 candidate bullets?

20 A. Yes.

21 Q. And he was doing that to determine what the threshold
22 was for declaring a match?

23 A. He was using that to determine whether or not the CMS
24 criteria was a valid criteria, in that would it ever be
25 exceeded.

1 Q. Now, your theory, the basis for your opinion here, is
2 that based on your training and experience, no other rifle
3 -- no other Marlin rifle would produce the same pattern on
4 the unknowns that you observed here, correct?

5 A. Correct.

6 Q. Okay. And did you test out that theory by running your
7 unknown through your database system and coming up with a
8 candidate list of other Marlins that the computer matches,
9 and see what correspondence there was?

10 A. There are so many limitations to the NIBIN system that
11 it serves its use as a general search when we don't have a
12 known firearm. When I have a bullet and a firearm that I'm
13 actually going to compare, NIBIN never enters into the
14 picture.

15 Q. When you have an unknown bullet, as we do in this case,
16 you can program that into the computer database and come up
17 with -- the computer will produce a candidate list that, in
18 the computer's view, has similar correspondence to your
19 question bullet, correct?

20 A. Well, one, we don't input the whole bullet. We just
21 input digital images of the base portion of the land
22 engraved areas. That is the standard. So there is a lot
23 of the bullet surface that is actually never recorded in
24 the NIBIN, and that is one of the restrictions of that.

25 But given that, we can put the bullet in, and

1 then it will compare similarly collected areas on test
2 fired bullets and other evidence bullets, and come up with
3 a potential candidate list.

4 Q. And that's what Miller did in this validation study
5 that did not involve Marlin rifles?

6 A. Right.

7 Q. Correct?

8 A. Yes.

9 Q. You didn't do such a study in this case?

10 A. Again, there is no reason to.

11 Q. And as far as you know, no one has ever conducted a
12 study like Miller's on the computer system using Marlin
13 weapons?

14 A. That is correct.

15 Q. Okay. Now, you talked about peer review, correct?

16 A. Yes.

17 Q. And you personally believe that to have any value, peer
18 review should be an independent peer review, totally
19 independent from the first examiner?

20 A. I don't think I've ever said that.

21 Q. Well, do you believe that? Do you think --

22 A. I believe that adequate peer review is when another
23 examiner looks at the report and the documentation
24 supporting that conclusion, and determines whether or not
25 there is sufficient documentation to support the conclusion

1 that was reached.

2 Q. Okay. Your peer review in your lab does not include a
3 second independent examination, correct?

4 A. This one, this particular case, involved another
5 examiner putting the evidence on the microscope.

6 Q. After being informed of what your conclusions were?

7 A. Yes.

8 Q. And his task, as I read the notes, was to see if your
9 conclusions, as documented in your notes, were supported by
10 your photographs?

11 A. And by his observations, yes.

12 Q. Okay. You made a point in saying on direct examination
13 that you weren't aware of the results of the State exam; is
14 that correct?

15 A. No, I was not.

16 Q. And that's an important fact, is it not, that you did
17 your testing blind?

18 A. It's helpful, but I don't consider that it would
19 have -- even if I did know the results, I would still
20 conduct this in a manner that is unbiased as possible, and
21 that would be demonstrated through my documentation and
22 photographs.

23 Q. Okay. Do you agree with this statement? Have you read
24 Dr. Budowle's and Dr. Bunch's article in the upcoming issue
25 of The Journal of Forensic Sciences called A Perspective on

1 Errors, Bias, and Interpretation in the Forensic Sciences
2 and Direction for Continuing Advancement?

3 A. I have not read that one yet.

4 Q. You have not?

5 A. No, I have not.

6 Q. You know Dr. Budowle, don't you?

7 A. Yes, I do.

8 Q. And do you know Dr. Bunch?

9 A. I do know Dr. Bunch.

10 Q. Do you agree with this statement: "The best way to
11 overcome and prevent potential bias in judgment is through
12 peer review. Blind verification is a form of internal peer
13 review that can reduce the chance of error and is
14 complementary to the external review that is inherent in
15 the adversary legal system. Blind verification is defined
16 as an independent second examination of an item of evidence
17 by another qualified examiner who does not know the
18 conclusion of the original examiner"?

19 Do you agree with that?

20 A. I would have to see it in context, because I certainly
21 don't want to pull the statement out of context.

22 Q. Sure.

23 A. I feel that blind peer review is more rigorous than
24 non-blind peer review.

25 Q. And in this case, there was no blind peer review,

1 correct, in the sense that they're using it here? Because
2 this other examiner knew your results?

3 A. Correct.

4 Q. Were you informed in this case that the State examiner
5 initially concluded, based on a comparison in this screen,
6 that the question bullet did not match the known?

7 A. I was not aware of any of that. However, based on what
8 you just shared, because of the limitations with the NIBIN
9 system and how bullets are input, and it's only land
10 impressions, in the amount of correspondence that I saw,
11 which is toward the middle of land impressions, that would
12 not be surprising for me to hear that.

13 Q. Let me ask you, hypothetically, if after such a
14 comparison took place -- in other words, the examiner is
15 looking at the screen, he's got the question and he's got
16 the known, and he says they don't match. After that
17 happened, the examiner's notes state, "After that happened,
18 I was contacted by Special Agent Oscar Flores. He had
19 inquired about the IBIS result in reference to this rifle.
20 I explained that there had not been any associations. He
21 continued to explain that he had information that this
22 rifle had been used on the site."

23 Do you see any problem with that, in terms of
24 contextual bias?

25 A. No, because of the limitations of the IBIS system.

1 Q. So if the examiner concluded there was not a match and
2 the investigator then says, "Hey, I've got information this
3 bullet was used in the killing," there is no issue of
4 contextual bias in that scenario, putting aside the IBIS
5 limitations?

6 A. Well, I can't put aside the IBIS limitations. There
7 could be contextual bias when a person is told what to
8 expect. And there have been instances demonstrated,
9 although there haven't been any studies done in firearms
10 with regards to contextual bias, that sometimes, if they
11 are looking for something, as Dr. Schwartz said on Monday,
12 they will see it. If they expect to see it, they will see
13 it.

14 Q. Are you basing your opinion in this case on your
15 comparative analysis; in other words, your combining of
16 your two test bullets and comparing the combination with
17 the unknown?

18 A. No.

19 Q. Okay. What are you basing your opinion on?

20 A. I am basing my opinion on the fact that I test fired
21 two bullets from that Marlin rifle. I compared two
22 reported test fires, Exhibits 37-A and 37-B, and determined
23 that they were fired from the same gun. I then compared
24 one of my test fired bullets versus either 37-A or 37-B.
25 Specifically, I compared one of my test fires versus 37-A

1 to determine on my comparative results that they were fired
2 from the same firearm.

3 So since I know two test fires that I produced
4 were test fired from one gun, and I compared two other test
5 fires and determined they were fired from the same gun, and
6 then I compared one of my tests with one of those bullets
7 and determined that they were fired from the same gun, by
8 simple logic, all four were fired from the same gun.

9 Does that make sense?

10 Q. Not quite.

11 A. All right. Let me start over.

12 Q. Let me see if I can break it down a little bit. You
13 first concluded that your test fire number 1 could not be
14 identified to the unknown, correct?

15 A. Correct.

16 Q. Then you concluded that test fire number 2 could not be
17 identified to the unknown?

18 A. Correct.

19 Q. Then you said: Well, if I combine the features on test
20 fire bullet 1 and test fire bullet 2, I can make an
21 identification, but I prefer to be able to do it on a
22 single bullet?

23 A. Correct.

24 Q. So you're not basing your identification at this point
25 on that combination method?

1 A. Correct.

2 Q. Then what you did was, you said: Give me all the test
3 fired bullets that were fired by the State gun?

4 A. Correct.

5 Q. You got five test fired bullets?

6 A. Six. Well, five bullets and one bullet jacket.

7 Q. And the first thing you did was, you didn't look at the
8 question again; you started comparing your test fired
9 bullets to his?

10 A. No. What I did was, I started looking at his test
11 fired bullets to see how well they corresponded with one
12 another.

13 Q. And again, as in your test fired bullets, there wasn't
14 perfect correspondence, was there?

15 A. No, there was not.

16 Q. So presuming those test fires were fired at around the
17 same time, he did not get perfect reproducibility of all
18 the lands and grooves from one bullet to the next?

19 A. No, he did not.

20 Q. And comparing your test fires -- after you did those
21 comparisons, did you then compare your test fires against
22 his?

23 A. Yes, I did.

24 Q. And there was not perfect correspondence there, either,
25 was there?

1 A. No, there wasn't.

2 Q. Then what you did, as I understand it -- correct me if
3 I'm wrong -- you took one of the five and compared one of
4 the five test bullets against the evidence bullet?

5 A. Specifically, one of the five was one of the ones that
6 I actually was able to relate back to my test fires.

7 Q. Uh-huh?

8 A. Page 36 of my case notes, if I may.

9 Q. Yes.

10 A. Summarizes exactly what my comparisons were.

11 Q. Okay. Page 36?

12 A. It will be in the lower right-hand corner of my case
13 notes.

14 MR. BURT: May I approach the witness?

15 THE COURT: You may.

16 Q. Is this what we're looking at?

17 A. No. That's one of the summaries. What I'm trying to
18 point to is this.

19 Q. Okay. So did you compare the unknown to just one of
20 the State examiner's test fires, or to all of them?

21 A. Just one.

22 Q. So you never made a determination as to whether there
23 was correspondence with his other test bullets, just the
24 one, correct?

25 A. Just the one.

1 Q. All right. And you already had reached the conclusion
2 that your test fires could not be used to declare a match?

3 A. Individually, no.

4 Q. Yeah. Is there some standard by which you say: Well,
5 if I have ten test bullets and none of them match up, but
6 on the eleventh bullet there is a correspondence, that I
7 can ignore the first ten comparisons and just go with the
8 eleventh?

9 A. Yes. Because it could be that on the first set of test
10 bullets, there was insufficient, an insufficient quantity
11 of individual markings, that would not allow an examiner to
12 have sufficient agreement to reach a conclusion of an
13 identification.

14 Q. And if you repeat the experiment, as you did in this
15 case, more than once, and you keep getting no ID, no ID, no
16 ID, and then you finally hit an ID, do you then say: Well,
17 then I don't need to worry about the ones where I didn't
18 get an ID because I have at least one match where there's
19 sufficient correspondence?

20 A. Yes. Because it's important to remember that there was
21 nothing in those previous comparisons that would lend to
22 exclusion. It only would lend to an inconclusive.

23 Q. By the way, in terms of leading to an exclusion -- and
24 you and I have talked about this before in the Diaz case --
25 there is a bias in the standard in favor of inclusion and

1 against exclusion; isn't that true?

2 A. It was actually discussed, and there was actually a
3 question that the judge who was presiding over the case
4 asked me.

5 Q. He had problems with that?

6 A. Well, he asked if there was a pro prosecution bias
7 towards identification. And I explained that I did not
8 feel there was, and then I explained why there was not.

9 Q. Okay. But that their standard is, in many labs -- and
10 maybe even in your lab -- that unless there's disagreement
11 between class characteristics, you can never declare
12 exclusion, right?

13 A. In some laboratories that is the case, yes.

14 Q. For instance, the FBI has that standard, do they not?

15 A. They do.

16 Q. In the ATF Lab, do you have a standard that unless the
17 question and known have different class characteristics,
18 that you will never exclude the bullet?

19 A. No. We can't make an exclusion based upon significant
20 difference on individual characteristics.

21 Q. However, in your own practices, in the thousands of
22 comparisons that you have done, you have had maybe two
23 exclusions; isn't that true?

24 A. Correct.

25 Q. And there has been research on this, papers written

1 about this, and it's true that exclusions are a rarity in
2 these comparisons?

3 A. Based upon the individual characteristics?

4 Q. Right.

5 A. They would be rare.

6 Q. And the rules are sort of slanted in favor of
7 inconclusive findings, as opposed to exclusions?

8 A. I would disagree with the use of the language.

9 Q. Okay. Forget about the "slanted," but empirically?

10 A. Scientifically.

11 Q. That's better.

12 A. Scientifically, if we don't have sufficient information
13 about the potential for a tool being deliberately modified
14 so that it would create other markings, then we don't have
15 sufficient basis upon which to base an exclusion because we
16 don't have sufficient information about the tool.

17 So basically, inconclusive is actually a more
18 conservative answer, scientifically, than an exclusion
19 would be.

20 Q. So am I correct, based on everything that you've said,
21 that your opinion is based solely on the comparison between
22 test fired bullet 37-B and the unknown, as documented in --
23 my page is cut off, so I can't read your page, but I think
24 it is this page.

25 A. That is the actual documentation of 37-B to 36, and

1 your page is cut off, so let me give you the page reference
2 for that. It's cut off on mine, too. I apologize.

3 Q. Okay. But am I correct that this is the important
4 comparative sheet here? Because everything else, as I'm
5 reading it, does not lead to an opinion of identification?

6 A. That's not true.

7 Q. Okay.

8 A. And the reason I'm going to say that's not true is, I
9 don't have independent knowledge that Exhibit 37-B was
10 actually fired from the Marlin rifle, and that is the one
11 that I eventually identified to the exhibit bullet.

12 Q. Uh-huh.

13 A. So what I did was, I established that 37-B was fired
14 from the Marlin rifle by actually comparing it to my own
15 test fires. So in this summary of conclusions -- and if I
16 may read?

17 Q. Yes, go ahead.

18 A. On Page 36 of my notes it says, "Known test T8.1 with
19 bullet, Exhibit 36, possible." And that means an
20 inconclusive. "Known test T8.2 with bullet, Exhibit 36,
21 possible."

22 Q. Possible?

23 A. Possible.

24 Q. Possible meaning it's not an identification, but it's a
25 possible identification?

1 A. Correct.

2 Q. All right.

3 A. "Reported test, Exhibit 37-A, with reported test,
4 Exhibit 37-B, identified." That means I was able to
5 identify those two bullets as having been fired from the
6 same gun.

7 Q. Okay. But the question here is not whether the test
8 fires came from the same gun. The important question is
9 whether the unknown came from the gun, right?

10 A. Correct. And my opinion that the unknown was fired
11 from that gun is based on all of these comparisons.

12 Q. And the comparison -- the key comparison is the one
13 between 37-B and 36, correct?

14 A. Right.

15 Q. And your documentation of that, explain to me how this
16 comparison gets above your threshold. What is it that
17 you're using -- first of all, what is the threshold? I'm
18 not clear on your numerical threshold. And you talked
19 about two-D and three-D.

20 A. Okay.

21 Q. Could you explain to me which threshold you used?

22 A. Sure. There's a slight difference between
23 two-dimensional tool marks and three-dimensional tool
24 marks. Two-dimensional tool marks are tool marks in which
25 there is not a significant height, so the only means of

1 comparison we have are the width of the striation, itself,
2 as well as its distance from a particular landmark, such as
3 a shoulder.

4 In a three-dimensional tool mark, we also have
5 the height.

6 Q. Height? When you say "height," is depth the same
7 thing?

8 A. Depth, yes. Depth or height.

9 Q. Okay.

10 A. So we have three different things that we're looking
11 at. So a two-dimensional tool mark is more limited, in
12 that we only have the width of the mark, as well as the
13 distance.

14 Q. And what are we looking at here, with these microgroove
15 rifles?

16 A. Three-dimensional.

17 Q. Three-dimensional because it's got a depth?

18 A. It's got a depth, as well.

19 Q. Okay.

20 A. So basically, my criteria for striated tool marks, that
21 agreement that is sufficient would be two runs of three
22 consecutive matching striations.

23 Q. Two runs of three what?

24 A. Consecutive matching striations.

25 Q. As in consecutive land 1, land 2, and land 3?

1 A. No.

2 Q. Explain what you mean by "consecutive."

3 A. Consecutive is consecutive individual markings within
4 an individual pattern. As I showed in the photographs
5 earlier this morning, I had a single either land or groove
6 engraving, and within that land or groove engraving there
7 were a number of smaller, individual characteristics or
8 smaller lines. That's what I'm referring to.

9 So I'm not referring to land 1, land 2, when I'm
10 saying consecutive matching striations. What I'm saying
11 is, within the individual pattern, what is consecutive
12 matching striations within that pattern?

13 My sufficient agreement is two sets of three, or
14 one set of six. Beyond that, I feel comfortable in
15 declaring it an identification.

16 Q. And in this comparison between 37-B and Exhibit 36,
17 were there differences in each comparison? In other words,
18 you saw one comparison after the other where there were not
19 only similarities, but differences in the two images?

20 A. Yes.

21 Q. In each and every one of them?

22 A. Yes.

23 Q. And in spite of those differences, you used this
24 numerical standard to say: Well, once you've reached a
25 certain number of similarities, you can declare a match,

1 even if you had 100 dissimilarities?

2 A. I did not count the dissimilarities, but the
3 dissimilarities I observed I felt were explainable in terms
4 of just the normal variation we would expect to see from
5 bullet to bullet known to have been fired from the same
6 gun.

7 Q. And so there is some sort of process for explaining the
8 differences?

9 A. Yes.

10 Q. Is there a standard by which you judge whether a
11 difference is explainable or unexplainable?

12 A. In my training and experience, and that's what it's
13 based on, the answer is "Yes."

14 Q. And in terms of your writings, you have said that
15 basing answers on training and experience is not going to
16 be good enough in this modern Daubert hearing. Have you
17 said that?

18 A. I have said that with regards to explaining the
19 criteria for identification, yes.

20 Q. Do you agree with the NAS 2009 report that a
21 fundamental problem with tool mark and firearm analysis is
22 the lack of a precisely defined process?

23 A. I do not consider that to be a problem that is
24 insurmountable, nor do I consider it to be a problem that
25 makes it invalid for its current use and application.

1 Q. Do you agree with the conclusion of the report, that
2 the AFTE theory of identification -- and I'll quote here --
3 "Which is the best guide available for the field of tool
4 mark identification, does not even consider let alone
5 address questions regarding variability, reliability,
6 repeatability, or the number of correlations needed to
7 achieve a given degree of confidence"?

8 A. I would disagree with that statement because the
9 theory, as it's published, does take many of those issues
10 into account, even though they are not specified in the
11 theory.

12 Q. And after this report came out, did you personally or
13 on behalf of your organization take any steps to try and
14 change the report?

15 A. I was not permitted to.

16 Q. And why is that?

17 A. I wanted to participate on the committee for the
18 Association of Firearm and Tool Mark Examiners that was
19 tasked to respond to both the 2008 and 2009 reports, and I
20 was not permitted to.

21 Q. Did somebody else on behalf of your organization or
22 your agency?

23 A. On behalf of ATF?

24 Q. Yes.

25 A. No.

1 Q. How about on behalf of AFTE?

2 A. On behalf of AFTE, yes.

3 Q. Okay.

4 A. But as an employee of ATF, which is a department within
5 the Department of Justice for the federal government, I was
6 not permitted.

7 Q. So there was some input into the committee when the
8 preliminary report came out from the firearms community,
9 correct?

10 A. No. There was no input to the NAS committee at all.
11 There was a response that was published to the report, but
12 the committee neither solicited a review by AFTE, nor did
13 they even consider the review or see the review,
14 necessarily, before they published their final report.

15 Q. According to the report, Mr. Striapolis, or
16 Mr. Striupaitis, or whatever his name is, appeared on
17 behalf of SWGGUN, did he not?

18 A. Yes, he did.

19 Q. And as far as you know, he presented his information
20 not as an individual, but on behalf of the scientific
21 working group?

22 A. Yes.

23 Q. Did you happen to see -- do you know what input he gave
24 to the committee?

25 A. I saw a PowerPoint presentation, but since the

1 PowerPoint presentation just hits on highlights, that's all
2 I saw.

3 Q. So you didn't hear his presentation? You don't know
4 what he said or how extensive it was?

5 A. No.

6 Q. And you would have no idea what the committee members
7 read on their own in terms of literature, other than the
8 fact that your article is cited and Dr. Schwartz's article
9 is cited?

10 A. Correct.

11 Q. And in terms of the committee resolving conflict, you
12 would agree that they cite more in favor of the criticisms
13 leveled by Dr. Schwartz and others than on the side of your
14 paper?

15 A. They do not feel that there has been sufficient testing
16 done.

17 Q. Okay.

18 MR. BURT: Thank you. That's all I have. I move
19 into evidence the exhibits that I marked.

20 THE COURT: Any objection?

21 MS. NEDA: No, Your Honor.

22 THE COURT: They will be admitted for purposes of
23 this hearing.

24 (Defendant's Exhibits I, J, K, L, and N admitted into
25 evidence.)

1 MS. NEDA: I do have a few questions, if I may
2 redirect?

3 THE COURT: Sure.

4 REDIRECT EXAMINATION

5 BY MS. NEDA:

6 Q. With respect to the Marlin rifle, you said that it is
7 unusual, in that it either has 12 or 16 lands and grooves;
8 is that right?

9 A. I said the Marlin rifle, this Marlin rifle, has 12
10 lands and grooves, and that is unusual. Marlin does
11 manufacture other rifles with 16.

12 Q. All right. And the reason why that is a headache --
13 and you agreed it is a headache -- is just simply because
14 you have to match up 12, as opposed to five or six in most
15 rifles, is that right, on your microscope?

16 A. Yes. Because when I do an actual comparison, I keep
17 one bullet fixed, so I'm either looking at a single land
18 impression or groove impression. And then I rotate the
19 other bullet to try and find a land or groove impression,
20 or groove engraving, if you will, that has similar
21 individual characteristics, if any.

22 So when I'm doing an actual comparison of a
23 microgroove bullet, I have to look at not five or six, as I
24 normally would look at. I actually have to look at 12.

25 Q. And you did that in this case?

1 A. Yes, I did.

2 Q. And you meticulously demonstrate that, do you not, on
3 Page 9 of your documentation, a bullet comparison, in
4 Exhibit 3, in which you say, for instance, GIMP-12. What
5 is GIMP-12?

6 A. When I look at bullets, I individually mark each
7 impression so that I can keep them in phase and keep them
8 ordered for my notes. So I individually marked or
9 designated each of the 12 groove engravings and each of the
10 12 land engravings.

11 Q. So GIMP is Groove Impression Number 12?

12 A. Well, GIMP-12 would be Groove Impression Number 12.

13 Q. And LIMP-11 would be Land Impression Number 11?

14 A. Correct.

15 Q. And in doing that, what you did with T8.1 and T8.2, you
16 looked at identified areas, identified by either GIMP or
17 LIMP with a number, and you saw a correspondence on both of
18 those at two different places that matched the evidence
19 bullet known as Exhibit Number 36?

20 A. That corresponded to the evidence bullet, yes.

21 Q. All right. Let me see. Change over time. You went
22 through the reproducibility test to show that there were
23 many tests, with thousands of samples, in which they still
24 could identify the first to the last, right?

25 A. There were some studies that demonstrated 4,000 and

1 5,000 bullets.

2 Q. It is true that those were not Marlins? Is that your
3 recollection?

4 A. That is correct.

5 Q. Okay. However, in this Marlin, it was seized, as you
6 now have learned, and given to Guerra to conduct, and he
7 fired it how many times?

8 A. Well, based on the number of test fires, I would say
9 six.

10 Q. Okay. And so it was seized after the arrest of the
11 defendant, six fires in the New Mexico DPS Lab, and then
12 how many times did you fire it?

13 A. Twice.

14 Q. So nothing near the 500, the 4,000, the 5,000 samples
15 in the tests that you took a look at?

16 A. Provided those were the only times that gun was fired,
17 the answer is "No."

18 Q. All right. And at this point, to your knowledge, there
19 were no other firings of that rifle?

20 A. To my knowledge, no.

21 Q. Even if these were lead bullets, the difficulty in
22 identifying, because the change didn't happen until like
23 the 70th bullet in those studies, is something that Kirby
24 conducted, correct?

25 A. Well, that Kirby conducted, but that Biasotti found it

1 to be a much narrower range, 25.

2 Q. I'm sorry. What was his range?

3 A. Approximately 25.

4 Q. Okay, 25. But no matter what, these were not lead
5 bullets?

6 A. Correct.

7 Q. And there was no lead residue in the barrel that you
8 observed?

9 A. I did not examine the barrel for lead residue.

10 Q. But when you made the cast, would you have noticed it
11 then?

12 A. Yes.

13 Q. Did you notice it then?

14 A. I did not notice it.

15 Q. And you noticed no imperfections or -- I forget what
16 the word was that you used, but when you did make your cast
17 of the interior of the barrel, you noticed no --

18 A. Subclass characteristics.

19 Q. Now, with respect to Dr. Bunch, the article to which
20 Mr. Bunch was referring was published back in 2000; is that
21 right?

22 A. Correct.

23 Q. And you alluded, although it was not expanded upon,
24 that Dr. Bunch evolved over time on the issue of CMS?

25 A. His opinion has evolved over time, yes.

1 Q. You indicated that there have been some affidavits that
2 he has submitted that evidence that evolution in thought?

3 A. Yes.

4 Q. And one of which he agrees with you, does he not, in
5 that CMS is an extension of the traditional pattern
6 comparison conducted by those firearm examiners?

7 A. Yes.

8 Q. I quote, "Thus, CMS and pattern matching are not
9 mutually exclusive. In practice, rather, CMS is merely an
10 extension of pattern matching"?

11 A. That is correct.

12 Q. And he uses pattern matching, "he" being Dr. Bunch?

13 A. To my knowledge, that's what he uses.

14 Q. With respect to his comments and subjectivity, did he
15 not also state that subjectivity is not tantamount to
16 unscientific or unreliability?

17 A. Yes, he has said that.

18 Q. And addressing subjectivity a little bit more here,
19 it's true that you do make -- you do employ subjective
20 analysis as well as objective analysis; is that correct?

21 A. My interpretation of observations is generally
22 subjective.

23 Q. All right. For instance, could this be compared to
24 recognizing a human face?

25 A. That analogy has been used, yes.

1 Q. For instance, I know Judge Johnson. I've known him off
2 and on for some years, although I haven't seen him for
3 about three. If I say I'm looking at Judge Johnson and I
4 know him when I see him, is that a subjective observation?

5 A. Well, that's a subjective interpretation of your
6 objective observations.

7 Q. Okay.

8 A. Because you would actually know what he looks like.

9 Q. So the objective portion of that is taking into account
10 all of the features of his face?

11 A. Correct.

12 Q. And maybe the coloration of his hair and so forth?

13 A. Yes.

14 Q. The subjective portion is my conclusion?

15 A. Correct.

16 Q. Is that sort of what is done by a firearms examiner who
17 employs the pattern comparison approach, the traditional
18 approach?

19 A. That's a very rough analogy, but it's a good analogy.

20 Q. All right. For instance, one who is very schooled in
21 subtleties -- for instance, a parent with two twins,
22 identical twins, they can distinguish between their two
23 twins better than an outsider because they see them all the
24 time and they are much more familiar?

25 A. Yes.

1 Q. All right. And is the same thing that you were saying
2 to me, that if you're looking for your son and you go into
3 the crowd and you come upon your son, do you continue
4 looking for him after you have found him?

5 A. No, because I've found him.

6 Q. All right. So it's hard to characterize that or
7 quantify that as statistics?

8 A. It is hard.

9 Q. And unlike DNA, which is not a random association of
10 the fields, you have randomness in your field of expertise?

11 A. Yes.

12 Q. But there are some efforts to deal with the fact that a
13 portion of your field involves subjectivity; is that
14 correct?

15 A. That is correct.

16 Q. And one of these, as you have already pointed out, you
17 heavily document what you observe, both in narrative form
18 and then you even take photographs, many photographs,
19 microphotographs for others to see, as well as you?

20 A. Correct.

21 Q. So that preserves your observations for others to
22 critique?

23 A. Yes.

24 Q. And in addition, you and some other examiners employ
25 the extra conservative approach of, in addition to doing

1 pattern comparison, you employ the CMS criteria?

2 A. Correct.

3 Q. And that's a pseudo objective approach, is it not?

4 A. Well, it's more objective in terms of instead of
5 relying on my own training and experience, I now have a way
6 of knowing what other examiners have seen in their known
7 non-match comparison, so I can help in part, based on
8 whether or not something is sufficient based on their work,
9 as well.

10 Q. And what you're doing is counting consecutive
11 striations that are not interrupted by other matters?

12 A. Other striations, yes.

13 Q. Other striations?

14 A. Other.

15 Q. Other striations?

16 A. That do not match.

17 Q. Okay. Finally, as has been repeatedly pointed out, you
18 testified in the Diaz case, which was in the U.S. District
19 Court for the District of California?

20 A. Yes.

21 Q. And in that case, United States v. Diaz, Judge Alsup
22 said the following, quote, "There has never been a single
23 documented decision in the United States where an incorrect
24 firearms identification was used to convict a defendant."

25 Do you remember that quote?

1 A. Yes.

2 Q. Where did Judge Alsup get that quote?

3 A. In January of 2007, I said that.

4 Q. And at the time you testified, was that correct to the
5 best of your knowledge?

6 A. Yes.

7 Q. And is that really what you're focusing on in your
8 field, making certain that you don't make false positives?

9 A. Yes.

10 MS. NEDA: I have no further questions. Thank
11 you for permitting the redirect.

12 THE COURT: Let's just limit it to the
13 additional --

14 MR. BURT: Oh, yes, absolutely.

15 RE-CROSS-EXAMINATION

16 BY MR. BURT:

17 Q. You also testified in the Diaz case that although a
18 false positive had not led to a conviction, you were aware
19 of discussions in the literature and actual cases where
20 false positives had been made?

21 A. Yes.

22 Q. And luckily, those false positives had been caught
23 before the conviction?

24 A. Correct.

25 Q. And you mentioned a specific case; I think it was a

1 California case, Ricky Ross?

2 A. Yes.

3 Q. Where there had been a false positive in actual
4 casework?

5 A. Yes.

6 Q. Fortunately, they caught it?

7 A. Yes.

8 Q. We don't know how many false positives there are out
9 there that have not been caught, correct? Nobody has ever
10 done a study on that?

11 A. No.

12 Q. And in terms of the quotation from Dr. Bunch which was
13 read to you from some affidavit, is the full context of
14 that quote as follows: "Thus, CMS and pattern matching are
15 not mutually exclusive. In practice, rather, CMS is merely
16 an extension of pattern matching. CMS is still a method in
17 development and does not undermine the validity of
18 acceptance of traditional pattern matching. In fact, as
19 demonstrated by the attached SWGGUN Survey summary, the
20 majority of firearms examiners continue to utilize pattern
21 matching and not CMS methods. Also, the vast majority of
22 firearm examiners who use CMS do not do so in conjunction
23 with or in addition to traditional pattern matching."

24 Is that the full context?

25 A. May I see that?

1 Q. Yes. Sure.

2 A. Because I want to make sure that the affidavits are one
3 and the same.

4 MS. NEDA: This is marked as an exhibit.

5 MR. BURT: Oh, is it?

6 MS. NEDA: And I don't have any problem having
7 the entire affidavit put into evidence. It is United
8 States Exhibit Number 18.

9 THE COURT: Is that Mr. Bunch's?

10 MS. NEDA: Dr. Bunch.

11 THE COURT: Dr. Bunch, rather.

12 THE WITNESS: And is that the same affidavit?

13 MR. BURT: That's what I'm looking at. Let me
14 make sure it is. It appears to be. I'm not -- I do object
15 to the whole affidavit going in, since only part of it is
16 being read, and Dr. Bunch is not here, so it would be
17 hearsay, confrontation objection.

18 MS. NEDA: Since the Rules of Evidence don't
19 apply here, and we have been having nothing but hearsay --

20 THE COURT: I was going to say, if we were to
21 really start adhering to the hearsay part, about five
22 inches worth of the six inches of material that I have
23 would not be admitted for purposes of this hearing.

24 So that this record is complete, I'll admit for
25 purposes of this hearing Dr. Bunch's affidavit. Please go

1 ahead and answer the question if you recall what was asked.

2 THE WITNESS: I do recall the question.

3 A. The quote that you said was an accurate quote from the
4 same affidavit.

5 Q. And anywhere in that affidavit does Dr. Bunch retract
6 the criticisms that he leveled against CMS in his article
7 that you discussed?

8 A. I believe his concession that CMS is nothing more than
9 an extension of what they do in pattern matching is a
10 significant retraction from his 2000 paper. Because in his
11 2000 paper, he would never have admitted that. He
12 considered them to be two different methods entirely and
13 exclusively independent in the context of his paper.

14 Q. And what do you think he meant when he said CMS is
15 still a method in development?

16 A. I'm not sure what he meant when he still referred to it
17 as a method. What I am thinking that he meant -- and this
18 would be speculation. May I?

19 Q. This part is speculation, but the other part is not?

20 A. Well, the initial part of that. This is really
21 speculation. May I?

22 THE COURT: Sure. We'll note that the witness is
23 speculating.

24 THE WITNESS: Thank you, Your Honor.

25 A. I would expect that what he is referring to is the

1 actual CMS criteria, as opposed to CMS in general. Because
2 the CMS criteria, remember, as I said before, it's very
3 distinct. CMS is just a description of the pattern.

4 Q. Right.

5 A. The CMS criteria is what we use, who use CMS, is that
6 enough correspond.

7 Q. And your own opinion is that the criteria have to be
8 shown to be reliable in order to use it?

9 A. Yes.

10 Q. And what he's saying is that, according to your
11 speculation, is that that part of it is still in
12 development?

13 A. Yes, that's what he says.

14 Q. Which would read to me "in development" meaning it's
15 not yet generally accepted as a reliable method?

16 A. It's not generally accepted as what would be the
17 cut-off to say inconclusive identification.

18 Q. All right. And then the last question, and this is a
19 housekeeping matter. I quoted you a portion of
20 Dr. Hatcher's textbook.

21 A. Yes.

22 MR. BURT: I would like to have that portion
23 marked and have you identify that. I don't have any
24 further questions beyond that.

25 LAW CLERK PHYLLIS AMATO: Next letter is O.

1 MR. BURT: O.

2 Q. And showing you Exhibit O, is that the portion of the
3 textbook that I was reading from?

4 A. This is a portion of Hatcher's book, and I would
5 assume that you were quoting from one of the many pages in
6 here.

7 Q. Okay. And that's when you said that the Hatcher text
8 has been often referred to as the text upon which the field
9 of firearms and tool mark investigation is based?

10 A. Yes.

11 Q. Okay.

12 MR. BURT: That's all I have. Thank you.

13 THE COURT: I have a couple of questions. On
14 Page 9 of your notes, your report, Documentation of Bullet
15 Comparisons, what did you say the LIMP stood for?

16 THE WITNESS: That stands for land impression.
17 Another term for it that I've used during this testimony is
18 land engraving.

19 THE COURT: And this land impression, there were
20 12 of them, and did I understand your testimony, that
21 because of the microgroove process that the Marlin rifle is
22 made, it has 12 of these in the barrel?

23 THE WITNESS: That is correct.

24 THE COURT: So let's just say -- we were talking
25 earlier, I think the first manufacturer of the 30-30 was

1 the Winchester. So if you had a Winchester, it would just
2 have what? Six?

3 THE WITNESS: Typically, Winchesters would have
4 six.

5 THE COURT: Six. Okay. Now, the microgroove, I
6 think Mr. Burt referenced an article written by someone in
7 the 1950s.

8 THE WITNESS: Hatcher.

9 THE COURT: Hatcher. And the gist of it, do I
10 understand part of what Mr. Hatcher or Dr. Hatcher was
11 saying in the 1950s, when the article was written, is that
12 because of this microprocessing of the rifling of the
13 barrel of a Marlin, it's much more difficult to make a
14 match, correct?

15 THE WITNESS: Correct.

16 THE COURT: In terms of the equipment that you
17 used -- let's see. When did you do this examination? What
18 was the date?

19 THE WITNESS: I did this examination in July of
20 this year.

21 THE COURT: All right. So say we're talking
22 about a period of time more than 50 -- this examination you
23 did was more than 50 years subsequent to when the Hatcher
24 article was written, correct?

25 THE WITNESS: Yes.

1 THE COURT: In terms of the equipment you use or
2 a firearm identification tool mark expert or tool mark
3 examiner would use, has that equipment evolved over the
4 last half century?

5 THE WITNESS: It has.

6 THE COURT: In terms of the technology that is
7 available to you, is the equipment more sophisticated than
8 what it was more than 50 years ago?

9 THE WITNESS: It is.

10 THE COURT: Would it be, then, in terms of the
11 difficulties in I guess making the identification with this
12 microgrooving, based on your training and experience and
13 your knowledge of your profession, is the difficulty that
14 Mr. Hatcher or Dr. Hatcher spoke about in his articles in
15 the 1950s -- have those difficulties been lessened by
16 technological advancements that are now available to a
17 firearms identification and tool mark examiner?

18 THE WITNESS: They have, yes.

19 THE COURT: There was a reference to a question
20 that Judge Alsup asked you, and I guess when you and
21 Mr. Burt had the previous encounter in the Diaz case. What
22 was Judge Alsup's question to you, if you recall?

23 THE WITNESS: I cannot quote it exactly, but he
24 did ask me if there has ever been any documented case study
25 that has demonstrated that a false identification has led

1 to a prosecution and finding someone guilty.

2 THE COURT: And then you indicated there had not
3 been?

4 THE WITNESS: There had not been.

5 THE COURT: But there was another question
6 Mr. Burt referred to you where -- and I remember he asked
7 you, or based on what Mr. Burt was asking you, I'm assuming
8 that he asked you something to the effect of whether there
9 was a particular kind of bias.

10 THE WITNESS: There was.

11 THE COURT: Do you remember that question?

12 THE WITNESS: I do remember that question. The
13 judge asked me -- Judge Alsup asked me, he said: Based on
14 what I'm seeing in the validation studies, where there are
15 known exclusions, it appears that the examiners have a pro
16 prosecution bias toward identification. Because even in
17 studies where there are known exclusions, they will only
18 call things that they can't identify inconclusives.

19 And my response to that was --

20 THE COURT: Yeah, that was the next part of my
21 question. Do you recall your response?

22 THE WITNESS: And my response to that was that
23 because we don't have full awareness of what has happened
24 to a tool, even though we have studies that have
25 demonstrated that even over multiple firings that we would

1 be able to identify bullets as having been fired from the
2 same gun, there are other things that can happen to this
3 gun that we may not be aware of, such that it may have
4 been left under water, it may have been purposefully
5 changed by someone putting a tool down the barrel. So
6 there are any number of things that could have happened,
7 that in the absence of a gun, we cannot be certain did not
8 happen.

9 So as a result, our conclusion of an inconclusive
10 is actually more conservative. If we had the gun, itself,
11 I could look at the surface of the gun, as I did in this
12 case, rule those out. And then if it were occasion, I
13 could have basis for excluding a bullet as having been
14 fired from that gun.

15 But in the absence of a tool, we cannot do that.
16 Furthermore, many laboratories, including the FBI, have
17 made that just a general policy statement.

18 THE COURT: Based on the extensive questioning
19 and cross-examination by Mr. Burt, is there anything that
20 he has asked you, as you sit here today, that in any way
21 causes you to question any aspect of the report that you
22 rendered and the results of your examination and your
23 conclusions that you have reached on or about July 29,
24 2009?

25 THE WITNESS: No, sir.

1 THE COURT: Do counsel have any questions of this
2 witness, in light of the questions I just asked?

3 MS. NEDA: No, Your Honor.

4 MR. BURT: I just want to clarify two things.

5 THE COURT: Okay.

6 FURTHER RECROSS-EXAMINATION

7 BY MR. BURT:

8 Q. First on the criticism by Hatcher, the basic tool that
9 Hatcher was using in the 1950s when this criticism was made
10 was a comparison microscope, correct?

11 A. Correct.

12 Q. And his book reflects the same microphotographs that
13 your work represents, correct?

14 A. The developments in the optics, as well as photographic
15 capabilities, would indicate that the equipment that is
16 used today was better than in the 1950s.

17 Q. When you say "better," what was the standard, using the
18 comparison microscope back when Hatcher was doing his work,
19 for the magnification?

20 A. Anywhere from 4X, maybe up to 20X, 40X, or 40 times.

21 Q. Up to?

22 A. Yes.

23 Q. Up to 40?

24 A. Yes. I'm not sure.

25 Q. Okay. And what is the -- and the comparisons are made

1 off the visual, what you're seeing on a microscope?

2 A. Yes.

3 Q. Not off the photographs, correct?

4 A. Correct.

5 Q. So the photography may have improved, but in terms of
6 what the eye has seen through the comparison microscope,
7 the same technique is being used, correct?

8 A. The same technique. However, the optics which allow
9 for greater discriminating power between lines that are
10 very close together, that may have blended together into
11 one line back in the 1950s, the optics have improved such
12 that even at the same magnification we can see with better
13 resolution what we're looking at.

14 Q. Based on what you said, the magnification is the same,
15 though?

16 A. Yes. Or very similar.

17 Q. So both you and the State examiner were using the same
18 level of magnification?

19 A. I'm not certain what level of magnification he used.

20 Q. But in terms of what Hatcher would have been using and
21 what you used, it was roughly the same?

22 A. The similar magnification has been around for
23 centuries. Again, it's a resolution of the optics that has
24 improved.

25 Q. Based upon your answers about your limited experience

1 with Marlins, do you have any basis to believe that -- to
2 contradict Dr. Hatcher's opinion? In other words, from an
3 experience standpoint, can you say: Well, I disagree with
4 his conclusions because I've worked with a lot of Marlin
5 bullets and I think they're pretty easy to identify?

6 A. I would never classify Marlin bullets as easy.

7 Q. Why not?

8 A. Because even with the improved optics, they're a
9 headache.

10 Q. Okay.

11 THE COURT: Do you want Exhibit O -- I'm sorry.
12 I thought you were through.

13 MR. BURT: I just want to clarify one area on the
14 Court's questions at the end.

15 THE WITNESS: Sure.

16 MR. BURT: And then I can finish. But if the
17 Court wants to interrupt --

18 THE COURT: No. I was just going to say, do you
19 want Exhibit O admitted?

20 MR. BURT: Yes, I want to introduce that.

21 THE COURT: Is there an objection to that?

22 MS. NEDA: No objection.

23 THE COURT: Exhibit O will be admitted.

24 MR. BURT: Thank you. I just wanted to be sure
25 we got it.

1 (Defendant's Exhibit O admitted into evidence.)

2 Q. (By Mr. Burt) The Court asked you a question about
3 what Judge Alsup asked you, correct?

4 A. Yes.

5 Q. Was the question -- I want to read from the transcript,
6 to make it clear what it was.

7 A. Sure.

8 Q. Judge Alsup at Page 33 of the transcript says: "Why is
9 it that bothers me some, that the examiners -- it seems
10 like an institutional bias in favor of guilt and against
11 innocence because they will -- when there is a true
12 positive, sure, you know, they ought to say it's a true
13 positive. But why can't they say it's a true non-match
14 instead of being equivocal when it points towards
15 innocence?"

16 You then say, "Okay." And then the Court says,
17 "That bothers me, that this is the professional mentality
18 of all these examiners, is that they don't want to ever
19 help the defense. They always want to help the
20 prosecutors, so they find matches, but they never say
21 non-match unless, as you said, there is a class
22 characteristic. But I know enough from this, you ought to
23 be able to tell from the gross mismatch on the individual
24 characteristics that it's not from the same gun. Why won't
25 they say it's not from the same gun?"

1 And you then begin a three-page answer which
2 begins with, "Some examiners will. I will. A lot of it is
3 based on training and experience."

4 A. That's right.

5 Q. That was the context of that question?

6 A. Yes.

7 Q. All right.

8 MR. BURT: That's all I have. Thank you.

9 MS. NEDA: Before we're off the record, the
10 United States marked an exhibit. It's the declaration of
11 Bruce Moran.

12 THE COURT: Yes, yesterday.

13 MS. NEDA: Two days ago.

14 THE COURT: Two days ago.

15 MS. NEDA: Yes, Your Honor. And it's marked as
16 Government's Exhibit 1. It's the declaration addressing
17 Dr. Schwartz's previous testimony and how it paraphrased
18 his articles.

19 THE COURT: Mr. Burt, did you object to that?

20 MR. BURT: I did, and I object now. It's beyond
21 the scope of the Court's questioning.

22 MS. NEDA: This is my response. He's the one who
23 offered it.

24 MR. BURT: I offered what?

25 THE COURT: What was referred to in the

1 hearing -- I'll note Mr. Burt's objection or defendant's
2 objection. But the reason I'm going to admit it is because
3 both of you referred to it. This is to the Schwartz
4 hearing.

5 MS. NEDA: Yes.

6 THE COURT: The only reason we're talking about
7 it today is because I agreed that it would not be
8 appropriate for counsel to have to give up their only copy,
9 that has possibly their work product comments on it. So
10 you are providing us a clean copy of that?

11 MS. NEDA: That's what I'm doing. But you
12 admitted it two days ago.

13 THE COURT: Yes, I did. I just wanted to clean
14 it up.

15 MS. NEDA: Here is a clean copy, and Mr. Burt was
16 provided a clean copy two days ago.

17 THE COURT: All right. Let's take a break, and
18 we'll come back out and hear argument.

19 (Recess from 3:15 p.m. until 3:50 p.m.)

20 THE COURT: When I said if counsel wanted to
21 argue, I meant as to this witness. I recognize we still
22 have Guerra to hear.

23 MR. BURKHEAD: Yes, Judge.

24 THE COURT: Mr. Burkhead, the motions were
25 filed -- well, there are separate motions as to Guerra and

1 Nichols? Or was it combined? I don't recall.

2 MR. BURT: They were combined, Your Honor. And
3 Mr. Nichols testimony is not addressed because at the time
4 we filed the motions, we hadn't even known he was an
5 expert. His report came in, in August sometime, so we just
6 sort of were assuming here that we would incorporate the
7 same objections to his testimony.

8 THE COURT: All right. Well, that's fine, if you
9 want to wait until after Mr. Guerra testifies.

10 MR. BURT: Thank you.

11 MS. NEDA: May I be excused, Your Honor, if you
12 are not going to address Mr. Nichols?

13 THE COURT: Certainly. Yes.

14 MS. NEDA: Thank you, sir.

15 THE COURT: Are you going to re-number an
16 exhibit?

17 MS. NEDA: There was one we re-numbered from 1 to
18 19.

19 THE COURT: So we'll put that on the record.
20 It's Government's 1 to 19? Exhibits 1 to 19.

21 MS. NEDA: There is already a 1, which is why we
22 have now changed one of the 1s to 19. And the one that we
23 changed from 1 to 19 is the declaration of Bruce Moran that
24 was introduced during Dr. Schwartz's examination.

25 THE COURT: Okay. Then let's take up a couple of

1 other matters. First, on September 8 there's a pretrial
2 conference. I don't see any need to have that, so I'm
3 going to vacate that. So I guess that's the good news,
4 Mr. Burt. You don't have to come back here next week.

5 MR. BURT: Very good.

6 THE COURT: I'm reluctant to push everything off
7 until the 21st just because that's a short week for me.
8 I've only got through Wednesday, and I really don't want
9 matters stacking up. So the week of the 14th I want to go
10 ahead and have a hearing on these motions that counsel
11 wanted argument on.

12 Now, one option, and I'll leave this up to you
13 and Mr. Taylor, of course. If it's merely a matter of
14 legal argument, Mr. Pori is here and you're welcome to
15 appear by phone.

16 MR. BURT: Thank you.

17 THE COURT: Again, that's something that you and
18 Mr. Pori and Mr. Taylor have to talk about. And you can
19 argue by phone, if you wish. You can supplement anything
20 Mr. Pori says. And usually with the phone that we have and
21 the acoustics in here, for the most part you can hear
22 fairly well.

23 MR. BURT: I appreciate that.

24 THE COURT: But again, I'll leave that up to you
25 in consultation with Mr. Pori and Mr. Taylor. Let me find

1 my list.

2 The afternoon of September 14, beginning at 2:00,
3 I would like to start with -- it is the motion,
4 Mr. Burkhead, that Mr. Fouratt, the one that he said he
5 wanted to argue, that he was working on.

6 LAW CLERK PHYLLIS AMATO: 429.

7 THE COURT: What number was it?

8 LAW CLERK PHYLLIS AMATO: 429.

9 THE COURT: Number 429. That's the defendant's
10 motion. Well, I'm sorry. That's not 429. That would be
11 defendant Taylor's Motion to Strike Future Dangerousness
12 and Victim Impact Aggravating Factors.

13 And then the other ones -- and I don't have a
14 particular preference to the order, but these are ones
15 either counsel has requested argument, or I think there's
16 one in here that I also wanted argument. And the other
17 ones are Document Number 388, which is the government's
18 motion to compel compliance, regarding the mental
19 condition.

20 The next one is defendant Taylor's motion in
21 limine to exclude all evidence not previously and
22 specifically identified and noticed. That's document
23 Number 391.

24 The next one is defendant Taylor's motion in
25 limine to exclude all evidence, which seeks to exclude all

1 404(b) evidence. That's docketed as Number 392.

2 And then there's defendant Taylor's motion in
3 limine to stipulate to a prior conviction, prohibiting any
4 reference or testimony to prior convictions, which is
5 docketed as Number 406.

6 So I think I said Number 388, Number 391, Number
7 392, Number 398, Number 406, and then there was Number 459.

8 LAW CLERK PHYLLIS AMATO: 429.

9 THE COURT: Oh, 429. I stand corrected. 429.
10 That's my understanding of all the motions that either side
11 wanted a hearing, plus I had one, myself. So other than
12 starting with Number 429 first on the afternoon of the
13 14th, due to Mr. Fouratt's schedule, the rest of them I
14 have no particular preference which ones we take up.

15 And we may need to need to carry over into the
16 next day, the 15th, but I wouldn't think we would go beyond
17 the 15th.

18 Now, some other matters I want to raise with you.
19 Or the other matter, rather. Mr. Contreras reported that
20 based upon the questionnaires that he has scanned and the
21 ones that have straggled in late, he has got about 900,
22 which is a 90 percent return, which is pretty good. That
23 gives us 900 questionnaires.

24 And my question to you, to counsel, at the time
25 we did the order -- and I'm referring to the order and

1 notice regarding the Court's amended proposed timeline for
2 jury summons process. I don't have a document number on
3 this.

4 But anyway, we said that basically we would send
5 out or the clerk would send out a second request to return
6 questionnaires and mail to prospective jurors who have not
7 responded. They can do that. But since we've got 90
8 percent return on these questionnaires, my question to you
9 is: Do you feel the need to do that?

10 MR. PORI: Unfortunately, Your Honor, I think
11 from our perspective, we should do everything we can to get
12 everyone who was sent a questionnaire to respond to the
13 questionnaire. I don't want to be in the position -- even
14 though practically you may be correct, I don't want to be
15 in the position to suggest to anyone Mr. Taylor's right to
16 a fair and impartial jury, that 90 is better than 100. 100
17 would be best.

18 THE COURT: All right. Of course, I'll say this.
19 You're not -- 100 percent response would be ideal. You
20 always have situations where somebody has moved or somebody
21 has passed away, you know, or somebody is incapacitated.
22 So you're not likely to get 100 percent.

23 MR. PORI: I know. But the more that we can do
24 to --

25 THE COURT: All right. I was asking, and I will

1 instruct him to go ahead and proceed in accordance with the
2 order.

3 MR. PORI: Thank you.

4 THE COURT: All right. Then is there anything
5 else that we need to take up today?

6 MR. PORI: Your Honor, we have a brief matter
7 that we would like to take up with you regarding the
8 Criminal Justice Act request. It shouldn't take very long.

9 THE COURT: Sure.

10 MR. PORI: We would like to take that up.

11 THE COURT: Anything else? That's your
12 invitation to exit. Is there anything else we need?

13 MR. BURKHEAD: Just one question, Your Honor, and
14 one housekeeping matter. The question is, I think where we
15 left off yesterday was September 21, finishing off the
16 James hearing and Mr. Guerra's testimony. Is that still a
17 firm date on the 21st?

18 THE COURT: Yes. I was thinking that you will
19 probably want to start with -- I mean, I recognize that
20 Agent Griego is out this week, but his availability is
21 probably --

22 MR. BURKHEAD: I spoke with him yesterday. They
23 are both on board for the 21st.

24 THE COURT: I would say let's start with Guerra.
25 Would defense counsel agree?

1 MR. PORI: Yes, Your Honor.

2 THE COURT: And finish with him, and then move in
3 and finish up the James hearing.

4 MR. BURKHEAD: Yes, Your Honor. And the second
5 point is, I have some additional authority for the Court on
6 the firearms Daubert issue. It's a relatively recent Tenth
7 Circuit case, United States v. Baines, B-A-I-N-E-S, which
8 is actually a fingerprint case, but I think some of the
9 argument just overlaps some of the argument.

10 The Court may or may not find it useful. I have
11 a copy for the Court. I don't have a copy for defense
12 counsel, but I spoke to Mr. Burt about it.

13 MR. BURT: I was actually going to send it to the
14 Court, myself.

15 THE COURT: Okay. Well, you go ahead and tender
16 it.

17 LAW CLERK PHYLLIS AMATO: Do you want to make it
18 an exhibit?

19 MR. BURKHEAD: No.

20 THE COURT: No. He cited it. He gave the cite
21 on the record.

22 MR. BURKHEAD: Actually, I did not give the cite
23 on the record. I would be happy to do that.

24 THE COURT: Do that. That way, it's on the
25 record.

1 MR. BURKHEAD: I don't think it has an F.3d cite
2 yet. I'll just give the Lexis cite. 2009 Lexis 15945.

3 THE COURT: All right.

4 MR. BURKHEAD: The date of the opinion, July 20
5 of this year, 2009. May I be excused now, Your Honor?

6 THE COURT: Sure, if there isn't anything else
7 that needs to be raised that requires the government's
8 presence?

9 MR. PORI: No, Your Honor.

10 MR. BURKHEAD: Thank you, Your Honor.

11 (Government attorneys left at 4:03 p.m. and a
12 sealed hearing was held before the court.)

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1 UNITED STATES OF AMERICA
2 DISTRICT OF NEW MEXICO

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4 REPORTER'S CERTIFICATE

5 I, Julie Goehl, RDR, RPR, RMR, CRR, CCR #95,
6 Official Court Reporter for the United States of
7 America, do hereby certify that I did report in
8 stenographic shorthand the proceedings set forth
9 herein, and that the foregoing constitutes a true and
10 correct transcription of the proceedings.

11 In testimony whereof, I have hereunto set my hand
12 on this 24th day of September, 2009.

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