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IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF COLORADO

Criminal Action No. 96-CR-68

UNITED STATES OF AMERICA,

Plaintiff,

vs.

TERRY LYNN NICHOLS,

Defendant.

ff

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REPORTER'S TRANSCRIPT  
(Trial to Jury: Volume 69)

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ff

12 Proceedings before the HONORABLE RICHARD P.  
MATSCH,  
13 Judge, United States District Court for the District of  
14 Colorado, commencing at 8:45 a.m., on the 10th day of  
November,  
15 1997, in Courtroom C-204, United States Courthouse,  
Denver,  
16 Colorado.

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24  
Transcription  
Street,  
629-9285

Proceeding Recorded by Mechanical Stenography,  
Produced via Computer by Paul Zuckerman, 1929 Stout  
P.O. Box 3563, Denver, Colorado, 80294, (303)

7683

1 APPEARANCES  
2 LARRY MACKEY, SEAN CONNELLY, BETH WILKINSON,  
GEOFFREY  
3 MEARNS, JAMIE ORENSTEIN, and AITAN GOELMAN, Special  
Attorneys  
4 to the U.S. Attorney General, 1961 Stout Street, Suite  
1200,  
5 Denver, Colorado, 80294, appearing for the plaintiff.  
6 MICHAEL TIGAR, RONALD WOODS, ADAM THURSCHELL,  
REID  
7 NEUREITER, and JANE TIGAR, Attorneys at Law, 1120  
Lincoln  
8 Street, Suite 1308, Denver, Colorado, 80203, appearing  
for  
9 Defendant Nichols.

10 \* \* \* \* \*

11 PROCEEDINGS

12 (In open court at 8:45 a.m.)

13 THE COURT: Be seated, please.

14 Counsel approach the bench.

15 (At the bench:)

16 (Bench Conference 69B1 is not herein transcribed by  
court  
17 order. It is transcribed as a separate sealed  
transcript.)

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1 (In open court:)

2 (Jury in at 9:48 a.m.)

3 THE COURT: Members of the jury, good morning.

4 JURY: Good morning.

5 THE COURT: Hope you didn't have too much  
trouble in  
6 icy weather this morning. We appreciate everybody  
being on  
7 time.



James Cadigan – Cross

key, or  
the  
the time  
were  
by  
scene and  
whatever  
and  
mark

1 it was found that it could be removed without using a  
2 if it was necessary to put a key in it to take it from  
3 hasp?  
4 A. I don't know.  
5 Q. Do you know if somebody dropped the lock between  
6 it was recovered and the time you came to court?  
7 A. By the time I came to court, yes.  
8 Q. Who dropped it?  
9 A. Well, Mr. Hartzler dropped it at one time when we  
10 looking at it.  
11 Q. All right. And do you know if the lock was dropped  
12 anyone between the time it was recovered at the crime  
13 the time you examined it?  
14 A. No, I do not.  
15 Q. Do you teach crime-scene procedures at the FBI --  
16 it is, in Quantico?  
17 A. I teach schools on trajectory, bullet trajectory,  
18 crime-scene analysis, yes.  
19 Q. And would you agree with me, sir, that before tool  
20 evidence is admitted to the FBI Laboratory, it should

be packed

21 to preserve the evidence and prevent contamination?

22 A. It should be sealed, yes, sir.

me that  
23 Q. No, I didn't ask you that, sir. Do you agree with

and  
24 the evidence should be packed to preserve the evidence

25 prevent contamination?

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James Cadigan – Cross

1 A. Yes.

book  
2 Q. And in fact, sir, that caution is contained in a

3 entitled Handbook of Forensic Science, is it not?

4 A. I'm sure it is, if that's our manual, yes, sir.

handbook.  
5 Q. That's -- and I'm going to hold it up, sir, this

6 That's your book; right?

sir.  
7 A. That's the one produced by the laboratory, yes,

8 Q. You wrote a portion of it; is that correct?

9 A. I edited a portion of it, yes, sir.

10 Q. Which portion did you edit?

11 A. That on tool marks and casting.

12 Q. Tool mark, what, sir?

13 A. Tool marks and casting of tool marks.

14 Q. So did you edit the portion labeled, "Submitting  
Tool Mark

15 Evidence"?

16 A. I'd have to look at it.

17 MR. TIGAR: I'm sorry, your Honor, may I --

18 THE WITNESS: Yes, sir.

19 BY MR. TIGAR:

20 Q. Asking you, sir, to look at the orange tabs there  
and at

21 one of them -- there we are -- page 64. Would you look  
at that

22 and tell the jury if that refreshes your recollection  
as to

23 whether or not you identified the portion "Submitting  
Tool Mark

24 Evidence."

25 A. I probably edited this. This is not my verbiage,  
but I'm

7691

James Cadigan - Cross

1 sure I looked at it before it was published.

2 Q. You certainly didn't disagree with it; is that  
right?

3 A. Correct.

4 Q. Now, when you teach crime-scene procedures, you  
teach

5 people to gather the evidence carefully; is that right?

6 A. Yes, sir.

that 7 Q. You teach them to label the evidence carefully; is  
8 right?  
9 A. Yes, sir.

is that 10 Q. You teach them to package the evidence carefully;  
11 right?  
12 A. Yes, sir.

the time 13 Q. You teach them to write down the description of the  
14 evidence on some kind of property report at or about  
15 it was recovered; is that right?  
16 A. I'm not sure that I would teach that, but there  
should be  
17 some recording of the evidence as it's recovered as to  
where  
18 it's recovered and marks as to who recovered it, yes,  
sir.

as close 19 Q. And that -- those -- that recording should be done  
correct? 20 to the time as the evidence is recovered as possible;  
21 A. As is possible, yes, sir.

elaborate 22 Q. In fact in the FBI Laboratory, you have a very  
they're 23 system for showing how things are handled and when  
24 passed from one person to another; is that correct?  
25 A. Yes, sir.

James Cadigan – Cross

kept  
with it;

1 Q. And in addition you would expect the evidence to be  
2 under circumstances that prevents people from fooling  
3 correct?

4 A. Absolutely.

the  
is that

5 Q. Because you understand that subsequent handling of  
6 evidence could affect its value for forensic purposes;  
7 correct?

8 A. That's correct.

just  
padlock,

9 Q. And now, do you know whether any of the steps we've  
10 described were followed with respect to the Master  
11 pictures of which you have testified about today?

received  
happened

12 A. No, sir. Other than the -- when it was -- when I  
13 it and from that time until I returned it, I know what  
14 to it; but before I got it, no, sir.

custody?

15 Q. I understand. Do you know when it came into FBI  
16 A. No, sir.

before

17 Q. You just know it had to come into custody sometime

18 you looked at it; right?  
19 A. That's correct.  
20 Q. And you looked at it, again, when?  
21 A. In July, and then returned it in August, the first  
time.  
22 Q. By the way, you conducted a number of examinations  
of many  
23 tools -- is that right -- in connection with this case?  
24 A. Yes, sir.  
25 Q. Do you have an estimate of how many tools you  
examined from

7693

James Cadigan - Cross

1 Mr. Nichols' home?  
2 A. No, I don't.  
3 Q. Now, in your direct examination, sir, you talked  
about the  
4 test impression that was made; correct?  
5 A. Yes, sir.  
6 Q. In lead.  
7 A. Yes, sir.  
8 Q. Did you make the test impression, yourself?  
9 A. Yes, I did.  
10 Q. You used a drill press?  
11 A. Yes, sir.  
12 Q. Now, a drill press is an item that -- a drill

that's

13 mounted on a stand and permits you to rotate a lever  
and bring

14 the drill bit down into contact with the material being  
15 drilled; is that right?

16 A. Yes, sir.

17 Q. When you did the test impression, did you leave the  
drill

18 spinning, or did you stop the drill in the test  
material and

19 then pull the drill bit up off?

20 A. I pulled the drill up as it was still spinning.

21 Q. Now, were you careful to hold the test impression  
material

22 in the same location and not let it move around while  
you were

23 doing the drilling?

24 A. Yes, sir.

25 Q. I'm going to place on the ELMO what has been  
received in

7694

James Cadigan – Cross

1 evidence as Government's Exhibit 1843.

2 Turn on the light. There we go.

3 Now, do you notice the red mark on the left  
side

4 there? See where my finger's pointing?

5 A. Yes, sir.

6 Q. What is that?

7 A. That is a mark that I placed there to orient the  
test  
8 impression.

9 Q. Okay. So that you could look at it and take your  
pictures;  
10 right?

11 A. Yes, sir.

12 Q. Now, these edges here that I'm showing with my  
fingers, see  
13 that -- would you fairly describe those as jagged?

14 A. Yes, sir.

15 Q. And this one here, would you fairly describe that  
as  
16 jagged?

17 A. Yes, sir.

18 Q. Now, I'm going to place what has been received as  
19 Government's Exhibit 155. You see that there are minor  
20 variations along this surface and along this surface;

is that

21 right?

22 A. Yes, sir.

23 Q. Would you agree with me that these two impressions  
here and

24 here on the test impression are much more jagged than  
the

25 cutting surfaces that are depicted on 155?

## James Cadigan – Cross

1 A. Yes, sir.

2 Q. And yet there can be no question in the world that  
the test

3 impression, 1843, was made with the drill, 155;  
correct?

4 A. That's correct.

5 Q. All right. Now, in addition to the lock that you  
showed

6 us, that drill mark that you have shown pictures of was  
drilled

7 down into the lock; correct?

8 A. Yes, sir.

9 Q. In fact, you had to remove some pieces of the  
stacked

10 plates of the lock in order to get a better look at it;  
is that

11 right?

12 A. That is correct.

13 Q. The lock in question, just to refresh our  
recollection

14 here, is -- if I could put up what's been received as

15 Government Exhibit 127 -- is a Master padlock, and  
these little

16 things here, those are actually stacked pieces of  
metal; is

17 that right?

18 A. Yes, sir.

19 Q. And they're held in place by rivets?

20 A. Yes, sir.

21 Q. Now, do you know where the lock was when it was  
being  
22 drilled?

23 A. No, sir.

24 Q. Okay. Now, from your examination, it's clear --  
well -- do  
25 you know whether or not the lock was drilled with a  
drill or a

7696

James Cadigan - Cross

1 drill press?

2 A. I don't know that -- what it was drilled with. I  
know the  
3 drill bit that was used.

4 Q. Okay. That's your direct testimony, sir.

5 MR. TIGAR: I ask that answer be stricken,  
your Honor,

6 non-responsive.

7 THE COURT: Motion is granted, stricken.

8 BY MR. TIGAR:

9 Q. If one holds a drill, a regular household drill and  
10 attempts to drill it -- to drill upwards, right, into  
11 something, would you expect that portions of the  
material being

12 drilled are going to drop down into the chuck?  
13 A. Possibly.  
14 Q. Did you make an examination of the tool -- the  
drill or the  
15 drill bit -- to see if evidence recovered at the crime  
scene  
16 would permit you to see if anything had stuck to the  
drill or  
17 the drill bit?  
18 A. I don't understand your question.  
19 Q. Did you make an examination of any shavings that  
had been  
20 adhering to the chuck or recovered from the crime  
scene?  
21 A. No, sir.  
22 Q. Now, if someone is drilling with a household drill  
and  
23 you're drilling upwards and underneath, as if I were  
going to  
24 drill up underneath this lectern, would you expect that  
I would  
25 not be able to hold the drill as steady as I would if I  
was

7697

James Cadigan - Cross

1 using a drill press?  
2 A. Probably, yes, sir.  
3 Q. And in fact, does the lock, as you examined it,  
show signs

made? 4 that the drill wiggled, as the drill hole was being

5 A. Wiggled.

6 Q. Wiggled back and forth as opposed to being held  
steady as a

7 drill press would?

8 A. I don't know that there were signs of that, but it  
9 certainly could happen.

10 Q. And one could -- you know, we don't have to be, you  
know,

11 experts in the field to take a look at that hole and  
see

12 whether or not it looks like the thing had wiggled?

13 A. Yes, sir.

14 Q. Okay. Now, you told us that the drill hole was  
made down

15 inside the lock; is that correct?

16 A. Yes, sir.

17 Q. Now, when someone drills, as the drill penetrates  
into the

18 material, shavings or debris from the item being  
drilled are

19 going to come loose; is that right?

20 A. Yes, sir.

21 Q. Some of those will be carried out by the flutes of  
the

22 drill, those things that go around; is that right?

23 A. That's their design, yes, sir.

24 Q. And some of those things will remain in the hole

and start

25 to scar the material being drilled; isn't that right?

7698

James Cadigan - Cross

1 A. They could.

2 Q. Now, in metallurgy, are you familiar with the  
phenomenon of

3 compression of the drilled material when a drill bit is  
being

4 used to drill metal?

5 A. No, I'm not a metallurgist.

6 Q. I didn't ask you whether you were a metallurgist; I  
just

7 asked you whether you were familiar with it.

8 A. You said in metallurgy, and I'm not a --

9 Q. Okay. Whether in metallurgy or not in metallurgy,  
are you

10 familiar with the phenomenon of compression of the  
material

11 that's being drilled by the heat and pressure of the  
drill bit?

12 A. Other than knowing that that would happen, yes; but  
I'm not

13 familiar --

14 Q. We don't have to be experts in metallurgy to know  
that;

15 we've all seen it; right?

16 A. Yes, sir.

of metal 17 Q. That is to say, if we go and try to drill a piece  
caught and 18 at home, the pieces of the metal are going to get  
right? 19 start scarring up the piece that we're working on;  
20 A. They could, yes, sir.  
21 Q. All right. Now, you testified on direct  
examination that  
22 the hole size was a quarter of an inch; correct?  
23 A. Yes, sir.  
24 Q. Did you measure it?  
25 A. Yes, I did.

7699

James Cadigan – Cross

1 Q. What did you measure it with?  
2 A. Ruler.  
3 Q. A ruler?  
4 A. Yes, sir.  
5 Q. And it's a quarter of an inch?  
6 A. In diameter, yes, sir.  
drill 7 Q. In diameter, all right. Now, did you measure the  
8 bit?  
9 A. Yes, sir.  
10 Q. What's the diameter of the drill bit?

11 A. One-fourth of an inch in diameter.

12 Q. I understand the drill bit is rated. I'll show you  
what's  
13 been received as Government's 245, if I may.

14 MR. TIGAR: Has that not been received?

15 THE COURTROOM DEPUTY: It has not been  
received.

16 MR. TIGAR: Pardon me. Has 154 been received?  
Excuse

17 me, sorry.

18 THE COURTROOM DEPUTY: No.

19 MR. TIGAR: No, all right.

20 BY MR. TIGAR:

21 Q. When you examined the drill, did you see a mark on  
it that

22 indicated that it said a quarter of an inch?

23 A. The drill bit, yes, sir.

24 Q. Yes, sir.

25 A. Uh-huh.

7700

James Cadigan - Cross

1 Q. Now, do you know what the actual measurement in  
diameter of

2 a standard quarter-inch drill bit?

3 A. It's approximately one-fourth of an inch.

4 Q. Isn't it a fact that it's .236 inches?

5 A. .236?

6 Q. Yes, sir.

7 A. Certainly could be.

8 Q. Are you telling us that you don't know whether it  
is or

9 not?

10 A. I don't know that that's the standard diameter of

11 one-quarter-inch drill bit, no, sir.

12 Q. And .236 is approximately 16/54, isn't it?

13 A. I don't know.

14 Q. Did anyone under your direction collect a bunch of

15 quarter-inch drill bits?

16 A. Yes, sir.

17 Q. You told us that they did.

18 A. Yes, sir.

19 Q. Did they measure those drill bits?

20 A. Measure each one of them?

21 Q. Yes, sir.

22 A. No.

23 Q. Did they measure some of them?

24 A. I don't recall if we did or not.

25 Q. And if you don't recall whether they did or not,  
you don't

James Cadigan – Cross

right? 1 recall what they found when they measured them; is that

2 A. That's correct.

3 Q. I'm going to show you what -- an item received in  
4 discovery.

5 MR. TIGAR: May I approach, your Honor?

6 THE COURT: Yes.

7 BY MR. TIGAR:

8 Q. Now, some of that is your handwriting; correct?

9 A. Yes, sir.

if that 10 Q. I'm going to ask you to take a look at that and see

direction 11 refreshes your recollection that someone under your

12 measured the drill bit.

13 A. Right. Yes, sir.

quarter-inch 14 Q. And what did they find is the diameter of a

15 drill bit?

16 A. .236 inches.

17 Q. Thank you, sir.

18 Now, .236 -- excuse me.

19 .236 inches is about 15 --

witness 20 MR. ORENSTEIN: I'm sorry. May I see what the

21 was shown?

22 MR. TIGAR: I'm sorry?

shown? 23 MR. ORENSTEIN: May I see what the witness was  
24 MR. TIGAR: I'm sorry. Thank you.  
25 MR. ORENSTEIN: Thank you.

7702

James Cadigan - Cross

1 MR. TIGAR: Thank you.  
2 BY MR. TIGAR:  
3 Q. .236 is about 16/54, isn't it?  
4 A. I guess. I don't know.  
5 Q. We could do the arithmetic?  
6 A. Yes, sir.  
7 Q. Now, you told us that on a given day, the same  
machine can  
8 make thousands of drill bits; correct?  
9 A. Yes, sir.  
10 Q. And in fact, from your experience, in the modern  
industry,  
11 the same machine does make thousands of drill bits  
every day;  
12 right?  
13 A. Yes, sir. That's correct.  
14 Q. And in the process of making, a piece of bar stock  
is  
15 pulled, machined, tempered, and ground; is that right?  
16 A. Yes, sir.

17 Q. All of those processes?  
18 A. Most of the time, yes, sir.  
19 Q. And in modern manufacture, that is an automated  
process;  
20 correct?  
21 A. Yes, sir.  
22 Q. Now, after you -- you said you looked at these --  
the lead  
23 impression that you made and the photograph of the lock  
through  
24 a comparison microscope; isn't that right?  
25 A. I didn't look at a photograph of the lock.

7703

James Cadigan - Cross

1 Q. You looked at the actual -- you looked at the test  
2 impression and the lock itself through a comparison  
microscope?  
3 A. That's correct.  
4 Q. And you took photographs?  
5 A. Yes.  
6 Q. Now, that comparison microscope is not  
stereoscopic, is it?  
7 A. Yes, it would be. The image that you see is  
8 three-dimensional.  
9 Q. You're testifying that the image is three-  
dimensional?

10 A. The image that you see, yes.

11 Q. All right. Now, when you -- your microscope, your  
12 comparison microscope has two objective lenses; is that  
right?

13 A. Yes, sir.

14 Q. And it has two oculars or eye pieces; is that  
right?

15 A. That is correct.

16 Q. And it -- so -- let me understand this. Is what  
you're  
17 seeing with your left eye and your right eye both  
images;  
18 right?

19 A. Yes, sir.

20 Q. You're seeing both images with each eye, you're not  
seeing  
21 one with one eye and one with the other?

22 A. Right. You're seeing both the right stage and the  
left  
23 stage through -- in a one vision.

24 Q. Is the left image entirely one item and the right  
image  
25 entirely the other item, or are both lenses focused on  
the two

7704

James Cadigan - Cross

1 items?  
2 A. The one lens -- one part of the microscope is

focused on

3 one side or one part of the -- for instance, in this  
case, it

4 would be the lock.

5 Q. The lock?

6 A. And one would be focused on the test impression in  
the

7 left.

8 Q. Is it your testimony, sir, that with objective  
lens, you

9 could get a stereoscopic or 3-D image of the test  
impression?

10 A. No, I see it in 3-D. When I take a picture, it's  
in two

11 dimensions.

12 Q. Yeah. Okay. That was my question, sir. Is it  
your

13 testimony that with a single objective lens, you can  
see

14 something under that lens in three dimensions?

15 A. Yes, you can see the depth and also the striations.

16 Q. All right. Now, I'm going to --

17 MR. TIGAR: May I approach, your Honor?

18 THE COURT: Yes.

19 BY MR. TIGAR:

20 Q. I'm going to show you, sir, what I have -- do you  
have the

21 exhibits that you were shown the other day?

22 A. No, sir.

1843. 23 MR. TIGAR: May the witness be shown 1842 and

24 This and those.

25 BY MR. TIGAR:

7705

James Cadigan – Cross

1 Q. Sir, I'm showing you now what has already been  
received as

2 Government's Exhibit 1842 and 1843, and the clerk is  
also

3 handing you what have been marked as Defendant's  
Exhibits E, as

4 in Echo, 1842 and 1843. Would you examine those and  
tell us

5 whether the E exhibits are photographic enlargements of  
the

6 Government exhibits that bear the corresponding number?

7 A. Yes, sir.

8 MR. TIGAR: We offer, them, E1842 and '43.

9 MR. ORENSTEIN: If they're duplicates, I'm not  
sure I

10 understand the purpose, your Honor.

11 THE COURT: Well, he said they're  
enlargements.

12 MR. ORENSTEIN: No objection.

13 THE COURT: All right. They're received.

14 BY MR. TIGAR:

15 Q. Sir, did you notice that 1842 bears a line drawn

across it?

16 Do you see that line?

17 A. Oh, yes, sir.

18 Q. All right. Thank you. Now, so that we can orient  
19 ourselves here, sir, I've placed E1842 -- and we're  
focusing in

20 on a portion of the striations that you observed;  
correct, sir?

21 A. Yes, sir.

22 Q. Do you -- is it fair to say that these marks here  
are not

23 perfect circles?

24 A. Yes; that's correct.

25 Q. In fact, they're straight lines here and here, and  
there's

7706

James Cadigan - Cross

1 this tinting phenomenon there; is that correct?

2 A. Yes, sir.

3 Q. Whereas, if we were to look at 1843, E1843, we  
would see

4 something more nearly a perfect circle; correct?

5 A. That's correct.

6 Q. And does that indicate to you that either the drill  
or the

7 thing being drilled was moved during the process of  
drilling?

that, as 8 A. It would indicate to me that on Exhibit 1842 that  
broke 9 I testified, the drill bit went through and almost  
10 through, but not quite.

lateral 11 Q. Doesn't say anything to you about movement, just  
12 movement, while it's being drilled?

13 A. It could be.

14 Q. Could be. All right.

15 Now, sir, in order that we can make a  
comparison, I'm

16 going to cut E1842 along the line that you noticed.

17 THE COURT: You're cutting a copy, I assume.

18 MR. TIGAR: Well, your Honor, these are -- we  
have a 19 whole copy. This is the exhibit.

20 THE COURT: All right. Well, we oughtn't to  
be 21 cutting up exhibits without prior approval.

22 MR. TIGAR: I apologize to your Honor, and I  
will 23 substitute a copy at the recess.

24 THE COURT: All right.

25 BY MR. TIGAR:

here. 1 Q. I've now placed on the ELMO E1843. Let me zoom out

E1842, I 2 Now, if I place this piece here, what's been marked as

through -- 3 can see that there are some striations that follow

4 correct -- and some that do not; right?

5 A. That's correct.

can see 6 Q. And if I move it around, in different locations, I

it 7 that, well, here's a striation, but in this area here

match or 8 becomes very blurred and this striation here does not

9 follow through; correct?

10 A. That's correct.

striation 11 Q. And if I start looking over here, I can see this

through; 12 following through, but I can't see this one following

13 is that right?

14 A. Yes, sir.

I could 15 Q. And if I were to take this exhibit, 1842 and 1843,

for 16 perform that same exercise -- that is to say, looking

17 similarities and differences -- around the entire

18 circumference; correct?

19 A. You could, yes, sir.

and 20 Q. All right. And as I was looking for similarities

here, in 21 differences, I could note here on E1842 that up in  
22 this area, there's simply nothing that we can see by  
23 striations; correct?  
24 A. There is nothing there, yes, sir.  
it and 25 Q. All right. And in order to look at this and take

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James Cadigan - Cross

1 run it around and look at it in different places, these  
2 photographs, which are the ones you took -- I don't  
have to be 3 an expert to look for striations there, do I?  
4 A. You don't, no, sir. But I don't use photographs to  
make 5 comparisons.

6 Q. Okay. I understand you use photographs to make  
7 comparisons --

8 A. No.

9 THE COURT: That wasn't his answer.

10 MR. TIGAR: I'm sorry, I didn't hear his  
answer.

11 THE WITNESS: The answer was I don't compare  
one 12 photograph to the other. I compare the drill-bit  
impression to 13 the lock.

14 BY MR. TIGAR:

15 Q. I understand, sir, that that's what you do. And of  
course  
16 the test impression -- right -- and the lock itself are  
also  
17 available in evidence; right?

18 A. Yes, sir.

19 Q. And these photographs are simply a way for us to  
look at  
20 those; right?

21 A. That's correct.

22 MR. TIGAR: Is 1841 in evidence?

23 THE COURTROOM DEPUTY: Yes.

24 BY MR. TIGAR:

25 Q. Now, here is 1841, which is in evidence, and that  
is a --

7709

James Cadigan - Cross

1 what are we seeing here, a picture of the lock  
cylinder?

2 A. The lock cylinder, yes, sir, with the two  
impressions.

3 Q. And if we -- you're saying that members of the jury  
can  
4 take this lock cylinder and they can look in here,  
also?

5 A. Certainly.

6 Q. Okay. And when they do that, they can see that --  
you see  
7 this mark that I'm tracing with the point of the  
scissors?

8 A. Yes, sir.

9 Q. That's a striation; right?

10 A. Yes, sir.

11 Q. All right. If you looked on the original lock, you  
can see  
12 the striation, and they can see that that's not at all  
13 circular; correct?

14 A. Does not appear on this photograph, no, sir.

15 Q. Well, and in fact, if we were to look at the  
original lock,  
16 we would see that there's a mark like that, and that's  
not  
17 circular; correct?

18 A. That's correct.

19 MR. TIGAR: I have nothing further of the  
witness.

20 Thank you.

21 THE COURT: All right.

22 Mr. Orenstein, you have some redirect?

23 MR. ORENSTEIN: Yes, your Honor. May I confer  
for a  
24 moment?

25 THE COURT: Yes. Oh, 127 was used in the  
cross, but I

James Cadigan - Cross

1 don't think it's been admitted. Perhaps we can admit  
it.

2 MR. ORENSTEIN: 127.

3 THE COURT: 127.

4 MR. ORENSTEIN: I thought I'd offered it,  
Judge,

5 but --

6 MR. TIGAR: No objection, your Honor. It had  
been

7 marked as admitted on my copy.

8 THE COURT: It's received.

9 REDIRECT EXAMINATION

10 BY MR. ORENSTEIN:

11 Q. Good morning, Agent Cadigan.

12 A. Good morning, sir.

13 Q. Now, on -- actually, if I may retrieve 127.

14 MR. ORENSTEIN: I'm sorry, your Honor, I was  
mistaken.

15 127 is which exhibit?

16 MR. TIGAR: It's the picture --

17 MR. ORENSTEIN: Oh, yes, your Honor. No  
objection. I

18 was thinking of 157. I was confused.

19 THE COURT: 127 is now admitted.

20 MR. ORENSTEIN: And no objection.

21 THE COURT: Okay.

22 BY MR. ORENSTEIN:

23 Q. Now, you were asked this morning about the  
photograph of

24 the test impression, Government Exhibit 1843.

25 A. Yes, sir.

7711

James Cadigan – Redirect

1 MR. ORENSTEIN: And could we have that on the  
screen,

2 please.

3 BY MR. ORENSTEIN:

4 Q. Now, Agent Cadigan, the defense lawyer asked you  
whether

5 the cutting surfaces which you looked at when you  
examined the

6 tip of the drill bit, 151B, had very minor differences  
on its

7 two different cutting edges; do you recall that  
question?

8 A. Yes, I do.

9 Q. Now, looking at Government Exhibit 1843, can you  
tell the

10 difference between those two cutting surfaces and  
striations

11 that each of one of them has left?

12 A. Yes, sir.

13 Q. Now, that jagged line running through the middle of

the

14 photograph, that's the boundry between the two cutting

15 surfaces; is that correct?

16 A. Yes, sir.

17 Q. Could you explain why the boundary is a jagged  
line?

18 A. Well, it would be, the -- there are two cutting  
surfaces on

19 the tip of the drill bit, and what you're seeing on the  
left

20 side would be the impression cut by one portion of the  
drill

21 bit, and on the other side would be the other cutting  
portion

22 of the drill bit.

23 Q. And when you lift the drill bit from the cutting  
surface,

24 when you're making your test impression, when you raise  
the --

25 A. -- drill press.

7712

James Cadigan - Redirect

1 Q. Thank you, the drill press -- is there any way of  
2 guaranteeing that that boundary line between the two  
cutting

3 edges will be raised in an entirely uniform fashion?

4 A. No.

5 Q. So that's what produces the jagged edge there?

6 A. Yes, sir, that's what I think.

7 Q. Now, if we look at the photograph -- and can you  
show  
8 how -- just using your light pen, how there are a  
number of  
9 different striations just between these minorly (sic),  
these  
10 two cutting surfaces with minor differences?

11 A. Yes, sir. As you can see, there is -- in this  
area, there  
12 is a dark area, a space, which is not immediately  
apparent on  
13 this side. Also on the outer edges, there's a distinct  
14 difference between the striations left by the one  
cutting edge  
15 and the other.

16 Q. Now, on cross -- on cross-examination on Friday,  
the  
17 defense attorney asked if it's your belief that every  
drill bit  
18 that comes off the line in the manufacturing process is  
unique  
19 when it leaves the factory. Do you recall that  
question?

20 A. Yes, I do.

21 Q. Could you explain how the manufacturing process  
produces  
22 unique drill bits.

23 A. Certainly. As each of the drill bits is pressed  
against  
24 the grinding wheel --

25 MR. TIGAR: Object to this, your Honor.

7713

James Cadigan – Redirect

1 THE COURT: What's the objection?

2 MR. TIGAR: No foundation for his opinion.

3 THE COURT: Overruled.

4 THE WITNESS: As each of the drill bits is placed onto

5 a particular machine, it's then placed up against a grinding

6 wheel. And the purpose of the grinding wheel is to sharpen the

7 tip of the drill bit in order so that it will perform its

8 function; that is, cut and remove metal.

9 That wheel has random particles on it that are  
10 presented to each of the tips, the tips of the drill bit, that

11 are to be sharpened in a random fashion, and that's why from

12 the first to the 1,000th drill bit produced on a particular

13 grinding machine, they will be different, because each time

14 that wheel turns and it scrapes against the drill bit,

15 particles drop off; and particles of the metal, of the drill

16 bit, are sharpened and thus produce a unique tip for

each one

17 that's produced.

18 BY MR. ORENSTEIN:

19 Q. Now -- excuse me -- is the grinding wheel that's  
used in

20 that process, is that larger than the surface of the  
drill bit

21 that it's cutting?

22 A. Yes, sir.

23 Q. So you could have one drill bit grinded (sic)  
against one

24 part of a wheel and the next drill bit is ground  
against a

25 different part of the same wheel?

7714

James Cadigan - Redirect

1 A. Yes. And normal function is that the wheel is  
indexed,

2 which means it's moved for each drill bit. The first  
drill bit

3 is sharpened. The first portion of the drill bit is  
sharpened,

4 it comes out, the drill bit rotates, it goes back in,  
and as it

5 goes back in, it moves just slightly so it hits a  
different

6 part of the wheel so a groove is not cut into the  
grinding

7 wheel so it wears the grinding wheel evenly. So it

hits a

8 different part of the grinding wheel each time.

which

9 Q. Now, is it generally the case that one drill bit,

those two

10 has, as you testified, two different surfaces -- will

11 surfaces be cut against the same grinding wheel?

12 A. Yes, sir.

would

13 Q. And obviously it's the same grinding wheel, so it

cuts?

14 produce, one would expect, similar if not the same

15 A. It would be similar.

Government

16 Q. But even with that similarity, again, looking at

the

17 Exhibit 1843, which is on your screen, does that show

same wheel

18 difference in striations that are left even when the

19 cuts one drill bit at two different times?

20 A. Yes, sir.

You were

21 Q. Now, if I may redisplay Government Exhibit 157.

22 asked this morning about the possibility of scars being

23 produced during the drilling process.

24 A. Yes, sir.

-- and

25 Q. Let me direct your attention to this area on here

## James Cadigan - Redirect

1 this is from the lock itself; is that correct?

2 A. Yes, sir.

3 Q. And that's opposed to this side which I'm pointing  
to which

4 has the test impression; is that correct?

5 A. That is correct.

6 Q. So is this area which I'm indicating with my pen  
something

7 that could indicate the kind of scarring you were being  
asked

8 about?

9 A. It could be.

10 Q. Now, that's not the kind of circular motion that's  
produced

11 by a drill; is that correct?

12 A. That's correct.

13 Q. That one little mark doesn't tell you anything  
about the

14 kind of striations produced --

15 MR. TIGAR: Object to the leading, your Honor.

16 THE COURT: Sustained.

17 MR. ORENSTEIN: Thank you, your Honor.

18 BY MR. ORENSTEIN:

19 Q. Now, on cross-examination on Friday, the defense  
attorney

20 asked you about the process of sharpening not only the  
tip of a

21 drill bit, but also its flutes; do you recall that  
questioning?

22 A. Yes, sir.

23 Q. The marks that you examined on the padlock,  
Government

24 Exhibit 126, where were they within the padlock?

25 A. One was within the lock cylinder.

7716

James Cadigan – Redirect

1 Q. And based on the position in the lock and the  
nature of the

2 marks that you saw, could you tell whether they had  
been cut

3 with the tip of a drill bit or its flutes?

4 A. Well, based on the orientation in the holes in the  
lock

5 cylinder, I would say it was the tip of the drill bit.

6 MR. ORENSTEIN: May I have a moment, your  
Honor?

7 I have nothing further. Thank you.

8 THE COURT: Mr. Tigar.

9 RECROSS-EXAMINATION

10 BY MR. TIGAR:

11 Q. Sir, have you had the chance to review some -- any  
12 materials connected with your testimony over the  
weekend?

13 A. You mean what I said?

14 Q. Yes. No, any documents or pictures or photographs  
or

15 charts or any materials of any sort related to your  
testimony.

16 A. Well, I had my own notes and articles that I was  
reading.

17 Q. Okay. And you did not meet with any of the  
prosecutors

18 over the weekend; correct?

19 A. No, sir.

20 Q. You talked about this business of manufacturing  
drill bits.

21 I want to ask you some more about that since it's been  
gone

22 into.

23 In 1995, did the FBI under your direction  
begin a

24 study of whether or not a drill-bit mark made in a  
particular

25 item could be identified as unique?

7717

James Cadigan – Recross

1 MR. ORENSTEIN: Object as beyond the scope of  
2 redirect.

3 THE COURT: Overruled.

4 THE WITNESS: In probably late 1996, we  
started to

5 accumulate drill bits to study them to perhaps provide

a more

of the 6 statistical base for the examination. But the purpose  
7 study --

8 BY MR. TIGAR:

started 9 Q. Thank you, sir. You've answered the question. You  
10 to make a study.

weren't 11 And you were using an analogy to ballistics,  
12 you, sir?

ballistics. 13 A. I don't know that I was using an analogy to

14 Q. Was an analogy to ballistics being used?

15 A. If you mean firearms identification.

16 Q. Yes, firearms identification.

the 17 A. Firearms identification is the -- comes in under  
18 umbrella of the term "tool mark identification."

Fire," wasn't 19 Q. Well, the study was in this case named "Drill  
20 it?

21 A. It was in this case named "Drill Fire."

from 22 Q. All right. And that -- then the term was taken  
23 another study called "Drug Fire"; right?

24 A. Well, I mean it was an acronym for it, certainly.

ballistics 25 Q. Right. And Drug Fire is a computer profile of

James Cadigan – Recross

1 evidence -- correct -- or firearms identification  
evidence?

2 A. Cartridge case impressions and -- yes.

3 Q. And in the field of firearms identification, as we  
4 discussed on Friday, a bullet makes less than one full  
5 revolution before it leaves the barrel of a pistol;  
correct?

6 A. Depending on the rate of twist and the length of  
the

7 barrel, that is certainly possible.

8 Q. Right. And you could not think of a pistol in  
which the

9 bullet would have made more than one full revolution  
before

10 leaving the barrel, could you?

11 A. Doesn't immediately come to mind, no, sir.

12 Q. And in connection with this operation Drill Fire or  
this

13 study, someone looked at the possibility of getting  
Microsoft

14 Mathematica; correct?

15 A. I think so.

16 Q. And someone also looked at the possibility of  
making some

17 kind of standard statistical analysis; correct, sir?

18 A. It's my understanding that there was -- we were

looking at

19 what might occur as far as a statistical study.

20 Q. Right. Because in order to know whether or not  
something

21 is truly unique, or a little bit unique, or could have  
happened

22 a number of times, we can apply to the insights of  
statistics

23 in order to evaluate that; right?

24 MR. ORENSTEIN: Objection. Scope and  
relevance.

25 THE COURT: Overruled.

7719

James Cadigan – Recross

1 THE WITNESS: I don't think that the  
statistical study

2 would prove it. Certainly the -- utilizing the  
computer would

3 aid in establishing the criteria for such an  
identification,

4 but it doesn't -- you cannot make an identification  
based on

5 statistics.

6 BY MR. TIGAR:

7 Q. To take an example from another field, there's no  
known

8 instance of two people having the same fingerprints;  
right?

9 A. That is correct.

10 Q. And millions and millions and millions of  
fingerprints have

11 been studied; correct?

12 A. That is correct.

13 Q. So now you're confident in knowing because the  
science has

14 been done that a fingerprint is unique; correct?

15 A. Yes, sir.

16 Q. Right. You were going to do a study to see if you  
could

17 analyze statistically drill bits; right?

18 A. We were going to look at drill bits.

19 Q. Right. And in that connection, someone was going  
to do a

20 Poisson distribution; right?

21 A. I don't know that they were going to do that as  
part of the

22 study. It was just one of the things that the person  
that was

23 making those notes was thinking about.

24 Q. All right. And what is a Poisson distribution?

25 A. I have no idea.

7720

James Cadigan – Recross

1 Q. All right. Do you know that a Poisson distribution  
is

2 something named after a scientist who made a

mathematical way

whether 3 to look at evidence as how often things happen and

4 they're random or not?

5 MR. ORENSTEIN: Objection.

6 THE COURT: Sustained.

7 BY MR. TIGAR:

8 Q. You don't know what it's about, okay.

9 Was this study ever completed?

10 A. No, sir.

11 Q. Was -- are there work papers from this study?

it. 12 A. Well, there are -- there's still work to be done in

and 13 The drill-bit impressions need to be examined by me,

written, but, 14 paperwork needs to be -- final paper needs to be

15 no, it's not done yet.

drill 16 Q. Not done, all right. Now, you told us that when a

17 bit is manufactured, there is a phenomenon by which the

18 grinding wheel is offset; correct?

19 A. Offset?

the 20 Q. Is changed each time so that the same portion of

bit; 21 grinding wheel surface isn't presented to each drill

22 right?

23 A. The grinding wheel is not offset; the drill bit

itself is

24 indexed or moved.

25 Q. Is indexed. And how many index positions are there  
in the

7721

James Cadigan – Recross

1 typical drill-bit manufacturing process?

2 A. I'm not sure. The one that we were looking at, I  
think,

3 had four.

4 Q. Four, okay. So Drill Bit 1 hits this part of the  
wheel and

5 then goes off, and then Drill Bit 2 hits the next part,  
3, 4,

6 and then goes back to 1; is that the way it works?

7 A. Well, the way it works is the first part of the  
Drill Bit 1

8 hits the grinding wheel at Portion A, comes out, and  
the second

9 part of the drill bit hits Part B of the grinding wheel  
and so

10 on.

11 Q. And so on. And did you do a study to determine how  
often

12 the same impression of grinder positions occurs during  
the

13 course of an average manufacturing day?

14 A. No, sir.

15 Q. So you just have no idea about that; right?

16 A. No, sir.

17 Q. All right. But you do know that thousands of drill  
bits

18 are manufactured each day by a given factory; correct?

19 A. At least, yes.

20 Q. Now, the drill bit about which you've been  
testifying, do

21 you know where it was manufactured?

22 A. No, sir.

23 Q. Do you know what manufacturing process was used  
there?

24 A. Well, I know that it was ground, yes, sir.

25 Q. You know it was ground. But you don't know what  
factory it

7722

James Cadigan – Recross

1 was produced in?

2 A. No, I don't.

3 Q. You don't know where it was made?

4 A. No, sir.

5 Q. Now, on cross-examination, you were shown again  
what's been

6 received in evidence as Government's Exhibit 1843. And  
if that

7 can be shown. I didn't understand. You notice that  
when you

8 were talking about these jagged edges -- correct -- if  
you made  
9 another drill bit impression with the same drill press  
and the  
10 same drill bit with which you made this, would you  
expect these  
11 jagged lines to be different?

12 A. Different?

13 Q. Yes, sir. Would you expect to get different jagged  
lines  
14 from two successive impressions of the same drill bit?

15 A. I don't know.

16 Q. We did see, looking again at 155, that the  
jaggedness is  
17 much greater than the cutting edges of the drill;  
correct?

18 A. Yes, sir.

19 Q. Does that suggest to you that the jagged lines on  
1843 are  
20 a random event?

21 A. They could be. I don't know.

22 Q. All right. Well, do you know how long it was --  
you  
23 examined this drill bit that's in 155 in 1955 (sic);  
correct?

24 A. 1955?

25 Q. Excuse me, 1995.

James Cadigan – Recross

1 A. I think it was 1995.

2 Q. And all the pictures that you have here were taken  
in 1995;

3 correct, sir?

4 A. Most of them, yes, sir.

5 Q. And is it your experience that as you use a drill  
bit, over

6 time, it starts to wear out?

7 A. It can change.

8 Q. If you use a drill bit to cut things that are hard,  
like

9 metal, it can change; right?

10 A. Depending on the metal.

11 Q. Depending, yes, exactly.

12 A. Uh-huh.

13 Q. And again, do you know what use, if any, this drill  
bit

14 that's in 155 had between the fall of 1994 and the time  
in 1995

15 when you looked at it?

16 A. No, sir.

17 MR. TIGAR: No further questions, your Honor.

18 MR. ORENSTEIN: Nothing further.

19 THE COURT: All right. This witness then  
excused?

20 MR. ORENSTEIN: Yes, sir.

21 THE COURT: That agreed. Mr. Tigar?

22 MR. TIGAR: Yes. I am sorry, your Honor.

23 THE COURT: Is it agreed --

24 MR. TIGAR: Yes, it's agreed.

25 THE COURT: You may step down.

7724

1 THE WITNESS: Thank you, your Honor.

2 THE COURT: Next witness, please.

3 MR. MACKEY: Your Honor, the United States  
will call

4 George Krivosta. Ms. Wilkinson will examine.

5 THE COURT: Krivosta.

6 THE COURTROOM DEPUTY: Would you raise your  
right

7 hand, please.

8 (George Krivosta affirmed.)

9 THE COURTROOM DEPUTY: Would you have a seat,  
please.

10 Would you state your full name for the record  
and

11 spell your last name.

12 THE WITNESS: George Krivosta, K-R-I-V-O-S-T-  
A.

13 THE COURTROOM DEPUTY: Thank you.

14 THE COURT: Miss Wilkinson.

15 MS. WILKINSON: Thank you, your Honor.

16

DIRECT EXAMINATION

17 BY MS. WILKINSON:

18 Q. Good morning, Mr. Krivosta.

19 A. Good morning.

20 Q. I'm sure it will become clear to the jury as they  
listen to

21 you, but can tell them where you're from.

22 A. I'm from Suffolk County, New York.

23 Q. Where were you born?

24 A. I was born in Brooklyn, New York.

25 Q. Can you tell us where Suffolk County is.

7725

George Krivosta - Direct

1 A. Suffolk County is a county on the eastern end of  
Long  
2 Island, that has a population of approximately 1.4  
million  
3 people.

4 Q. Tell the jury where you work, Mr. Krivosta.

5 A. I'm employed by the Suffolk County Crime  
Laboratory, which  
6 is part of the medical examiner's office in Suffolk  
County,  
7 which is under the jurisdiction of the Health  
Department.

8 Q. So you have no affiliation with the police  
department there

9 in Suffolk County?

10 A. That is correct.

11 Q. And what do you do at the crime -- Suffolk County  
Crime Laboratory?

12 A. I'm the supervising forensic scientist in charge of  
the Firearms Unit at the crime laboratory.

13 Q. And what type of examinations do you do in the  
Firearms Unit?

14 A. Firearms and tool mark examinations.

15 Q. Now, do you have any connection with the FBI  
Laboratory?

16 A. I do not.

17 Q. Do you also do independent examinations?

18 A. Yes, I do.

19 Q. Does that mean when you do an independent  
examination that

20 you're not doing it for the Suffolk County Crime Lab?

21 A. That is correct.

22 Q. And were you asked by the Government in this case  
to

7726

George Krivosta - Direct

1 conduct just such an examination?

2 A. Yes, I was.

3 Q. And have you worked in the past for both  
prosecution and

4 defense?

5 A. Yes, I have.

6 Q. And does it affect you in any way who it is that  
hires you?

7 A. It does not.

8 Q. Tell us how long you've been employed as a firearms  
and

9 tool marks examiner.

10 A. I started with the Suffolk County Crime Laboratory  
in 1974.

11 I was moved into the firearms section in 1979.

12 Q. Now, you told us that your unit is called the  
Firearms

13 Unit; correct?

14 A. That is correct.

15 Q. You also do tool marks?

16 A. In the Suffolk County Crime Laboratory, both  
firearms

17 examinations and tool mark examinations are done in the  
same

18 section of the laboratory. Tool mark examinations is  
just

19 considered to be -- in actually, I should say firearms

20 examination is just considered to be a specialized form  
of tool

21 marks examinations.

22 Q. Explain that for the jury, could you.

23 A. When a tool is manufactured or in the case a gun is  
24 manufactured, various tools are used in its  
manufacturing  
25 process and various types of markings can be placed.  
Some are

7727

George Krivosta - Direct

1 deliberate, which we call class characteristics; some  
are  
2 accidental. They're often referred to as striations.

3 When a cartridge or a bullet is fired from the  
gun,

4 these markings are now transferred from the weapon onto  
it so

5 in actuality, the individuality has to take place in  
the weapon

6 first, not on the expendents.

7 Q. So is there any difference in doing that firearms  
8 examination as when you do a tool marks examination?

9 A. There is not.

10 Q. Now, did you conduct a tool mark comparison in this  
action?

11 A. I did.

12 Q. Did it involve comparing a padlock with a test  
impression

13 that was made from Mr. Nichols' drill bit?

14 A. Yes.

15 Q. Now, before we get into the details of that

comparison, can

16 you tell us just a little bit about your educational  
17 background. When did you receive your bachelor of  
science  
18 degree?

19 A. I received my bachelor's of science degree from  
John Jay  
20 College of Criminal Justice, which is part of the city  
21 university system.

22 Q. Did you say when you completed that? I'm sorry.

23 A. 1974.

24 Q. What did you do after you graduated from college?

25 A. I began my work at the Suffolk County Crime  
Laboratory.

7728

George Krivosta - Direct

1 Q. Now, over the years, how many tool marks and  
firearms --

2 should I just say tool marks examination for purpose of  
these?

3 A. Yes.

4 Q. How many tool marks examinations have you done over  
your

5 career?

6 A. Hundreds of thousands.

7 Q. Since you have become a tool marks examiner, have  
you done

8 any teaching or lecturing in this field?

9 A. Yes, I have.

10 Q. What have you done?

11 A. In the spring of '96, I believe it was, I was given  
the  
12 appointment as an adjunct lecturer at John Jay College  
of  
13 Criminal Justice, where I taught a graduate course in  
firearms  
14 and tool mark examination. In addition to that, I've  
also  
15 lectured before the Suffolk County police departments,  
advanced  
16 investigators' courses, and the Suffolk County district  
and tool  
17 attorney's office on the state of the art of firearms  
18 marks examinations.

19 Q. Let's turn, if we could, to actual drill-bit  
comparisons.

20 Have you done any proficiency tests, either internal or  
21 external, as they relate to a spinning drill bit?

22 A. I believe it was in 1993, Collaborative Testing  
Services  
23 issued an external proficiency test on drill bits, and  
I did  
24 that examination.

25 Q. Okay. Let's talk about the organization you  
mentioned.

George Krivosta – Direct

1 What was the name of it?

2 A. Collaborative Testing Services.

3 Q. What is that?

4 A. They are an independent vendor who supplies various  
5 proficiency tests to laboratories that wish to take  
6 them, and  
7 it's part of the ASCLAD accreditation program. Our  
8 laboratory  
9 participates in these proficiency tests.

10 Q. So was it your laboratory as well as others that  
11 are part  
12 of this accreditation process that engaged in this  
13 external  
14 proficiency test?

15 MR. TIGAR: Object to leading, your Honor.

16 THE COURT: Overruled. It's preliminary.

17 THE WITNESS: That is correct.

18 BY MS. WILKINSON:

19 Q. And did you do -- what type of work did you do as  
20 part of  
21 this external proficiency test on a spinning drill bit?  
22 A. It was to perform a -- they had submitted a drill  
23 bit.

24 They had submitted questioned drill impressions of  
25 essentially  
26 blind holes, holes where the drill bit hadn't fully  
27 penetrated  
28 the stock, and you were asked to determine if the

markings

could be 21 could be associated and if any of the other markings

22 associated with each other.

drill 23 Q. Let's turn to the actual examination of a spinning

that you 24 bit and start with the identification of tool marks

you 25 might compare. Can you tell us what type of tool marks

7730

George Krivosta - Direct

1 look for in a spinning drill bit.

have 2 A. There are essentially two types of tool marks. We

describe 3 what are referred to as impressed tool marks. They

the 4 where the -- there is force between the tool, which is

up the 5 harder of the two substances, and what's going to pick

a 6 markings. And from pressure between at least two, a --

be 7 mirror image or a negative of what's on the tool will

8 impressed.

to as a 9 Another type of tool mark is what's referred

harder 10 striated tool mark. That's when the tool, again, the

11 substance, comes across the softer of the two  
substances and

12 leaves a series of parallel scratch marks that are  
often

13 referred to as either striate or striations.

14 Q. Okay. Let's compare that to a firearms  
identification.

15 What type of tool marks are you looking at when you're  
doing a

16 firearms identification?

17 A. Again, you're looking at both types. If we were  
talking

18 about a firing-pin impression or if we were talking a  
brief

19 face marking, we would be talking about compressed tool  
marks.

20 If we're talking about the bullet traveling down the  
barrel, if

21 we're talking about the extractor rubbing across the  
edge of

22 rim or during the extraction process in the casing  
coming out

23 from the chamber, in those cases, we would be talking  
about

24 striated tool marks.

25 Q. Does it make any difference -- let's use your  
example of

1 the bullet coming down the barrel. Does it make any  
difference  
2 how many times the bullet spins or revolves before it  
goes out  
3 the barrel whether you find those striations or tool  
marks?  
4 A. It does not.  
5 Q. Why is that?  
6 A. The rifling keeps the bullet from slipping during  
its  
7 travel down the barrel. So it's going to pick up --  
it's  
8 following the same type of path as it travels down. It  
would  
9 have to take a deviated path, which at times does  
happen. And  
10 that's what's referred to as slippage. When the bullet  
first  
11 starts its travel, it can slide a little bit before it  
engages  
12 the rifling. So you might have some areas that would  
appear  
13 different from other areas on the surfaces that you're  
14 examining, but that's due to slippage.  
15 Q. And slippage is something that you see in certain  
cases; is  
16 that right?  
17 A. Yes, you do.  
18 Q. Does that preclude you from making any  
identification of  
19 the firearm?

20 A. It sometimes makes it more difficult to find  
continuous  
21 strings where we have areas. We might have to go to  
several  
22 areas finding small areas of reproducible striate that  
are in  
23 congruence.

24 Q. So could you have like a blotch and some kind of  
mark and  
25 some other striations and would that suggest the  
slippage that

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George Krivosta - Direct

1 you're talking about?  
2 A. That is correct. In other words, you could have an  
area of  
3 striations where they're reproducing, and you can have  
a break  
4 for a short period of time, and then you can have a  
combination  
5 of these striates in another area that are  
reproducible.

6 Q. Let's go back, then, to a drill bit. If you -- I'm  
going  
7 to show you Government's Exhibit 151. You recognize  
this as a  
8 battery-operated drill?

9 A. I do.

10 MS. WILKINSON: Your Honor, may I give it to  
the

11 witness?

12 THE COURT: Yes.

13 BY MS. WILKINSON:

14 Q. Take a look at this, Mr. Krivosta.

15 Now, if you were going to use that drill to  
drill a  
16 padlock and you were holding it underneath the padlock,  
would  
17 you -- could you have the same phenomenon you just  
talked  
18 about, some kind of slippage or some kind of lateral  
movement?

19 A. Most definitely. A drill -- one of the things you  
have to  
20 be aware of when dealing with a drill and doing drill-  
mark  
21 comparisons is you have two cutting surfaces. Now,  
those two  
22 cutting surfaces are going to be taking off metal at  
the same  
23 time. The angle of those cutting surfaces can change  
slightly.

24 Also the pressure on one end or the other end can  
change. And  
25 if the tip of the drill bit is not supported by the  
sides of

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George Krivosta - Direct

1 the hole -- as an example, when we get deeper down into

a hole,

2 that drill bit is going to be supported and is not  
going to be

3 allowed to move as much. But when we're first  
starting, we can

4 actually have a cutting edge coming like this, shifting  
a

5 little bit, changing the angle that it's at, coming  
across,

6 maybe making another little bend. At the same time,  
it's

7 leaving markings. You can find areas of patterned

8 reproducibility, but then you can find areas that are  
breaks.

9 In the type of situation where you're drilling and  
trying to

10 hold something, will just increase the possibility of  
that

11 happening.

12 Q. But you would still be able to find those patterns,  
I think

13 you called them, of reproducibility; those are just  
striation

14 patterns; is that what you're talking about?

15 A. Yes, there might be some that would still exist.

16 Q. And I think you said as you're drilling into this  
padlock,

17 you'd expect for there to be more movement as you just  
start to

18 enter the padlock -- is that right -- and you'd have a  
better

19 pattern in the deeper end of the lock; is that what you

said?

20 A. That's correct.

21 Q. And that's because of what?

22 A. The ability of -- you have the ability to have  
movement.

23 But anyone who's tried to drill a hole for the first  
time in

24 metal, one of the things sometimes you have to do is  
you have

25 to make a little tick there to get the drill started,  
otherwise

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George Krivosta - Direct

1 what will happen is the drill will run, it won't even  
start

2 penetrating the metal. It's the same sort of thing  
happening.

3 You can have this sort of movement in there; and then  
after you

4 get in a certain amount of depth, the sides of the  
drill are

5 supported, and it will drill much more uniformly.

6 Q. So the sides of the hole will support the drill  
bit; is

7 that what you're saying?

8 MR. TIGAR: Leading.

9 THE COURT: Sustained.

10 BY MS. WILKINSON:

11 Q. What would be supporting the drill bit?  
12 A. In a case like this, the padlock is holding the  
drill,  
13 you're holding the drill and the operator who is doing  
this is  
14 trying to keep them as stable as possible.  
15 Q. Now, is there anything particularly difficult or  
different  
16 in examining the marks left by a spinning drill bit?  
17 A. As long as one keeps in mind that there are two  
cutting  
18 surfaces and that the -- you know, you may have -- you  
see some  
19 discrepancy on one, you might have to look at the other  
cutting  
20 surface. 'Cause either one of these can leave the  
markings,  
21 and they also don't necessarily have to be all the way  
across  
22 from one another.  
23 If this one is cutting, this one is cutting  
and this  
24 one suddenly breaks free, this one is going to continue  
for a  
25 little bit. Now, we wouldn't realize that unless we  
stopped

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George Krivosta - Direct

1 cutting at that exact moment. When we stop cutting,  
what

and 2 happens is now the drill moves away from the surface  
will see is 3 there's no more material being removed. So what we  
like 270 4 what was -- so what I'm trying to say is if this made  
quarter 5 degrees' worth of cut and this was missing for about a  
coming 6 of that turn, we might only have a quarter of this as  
7 from this one and 270 coming from this one.

reverse 8 If we drilled another hole, we could have the  
9 situation or we could have the two of them being  
exactly equal;  
10 and that's the only concern you have to be aware of  
when you're  
11 doing this sort of examination.

from a 12 Q. Is there anything about examining the tool marks  
13 spinning drill bit that makes the examination easier?

14 A. The surface of the tool is a ground surface.

15 Q. Meaning-- which surface is the ground surface?

ground -- 16 A. The cutting edge of the drill is ground. And

very -- 17 grinding is a type of machining procedure that leaves

of 18 what we refer to as accidental marks, the possibility

19 carryover. "Carryover" means that something can be

20 manufactured and something else manufactured

immediately

21 thereafter could have the same type of markings on it.

22           Drilling -- or I should say grinding is a type  
of

23 machining process where that cannot take place. The  
cutting

24 away of the metal is done by the very little abrasive  
bits of

25 material on the -- on the wheel. They're harder than  
the tool

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George Krivosta - Direct

1 steel. They tend to make small scratches, but they're  
turning.

2 They immediately -- they take a little metal off and  
they come

3 away, and something -- a different one in a different  
place

4 comes along. The possibility of getting the exact same  
5 structure becomes rather infinitesimal. So when we  
talk about

6 looking at the striations in a reproducible pattern,  
they would

7 have to be there either -- the only way they could be  
there

8 other than from having the same tool would be by pure  
chance.

9 Q. Now, what about when you do a firearms examination?  
Do you

10 have some of those same phenomena going on?

very  
looking at.  
barrel  
some  
the  
takes metal  
exact  
amount of  
land  
that is  
inside that  
going  
on  
reproducing

11 A. When you do firearms examinations, you have to be  
12 cautious of where you're looking and what you're  
13 As an example, if we were to look at the inside of a  
14 where the grooves or the shower spots are, there are  
15 machining operations where you can get carryover, where  
16 cutting tool that cuts that groove makes a passage,  
17 away. Then when it manufactures the next barrel, the  
18 same situation can happen, and there can be a certain  
19 similarity between those two markings.  
20 There are other parts, what we refer to as the  
21 impressions when the barrel is formed. The inside of  
22 drilled, it's reamed. The tool marks that are left  
23 barrel are particular to the direction of the bullet is  
24 to travel. So the markings that are going to be placed  
25 there are totally random. The possibility of them

1 is exceptionally remote.

2 Q. And is that possibility of the randomness or the  
chance  
3 repeat of the bullet coming out of the barrel similar  
to the  
4 phenomenon you've described about the chance of  
reproducibility

5 of the drill bit spinning into a lock or some other  
metal  
6 surface?

7 A. That is correct.

8 MS. WILKINSON: Your Honor, may I approach and  
give  
9 the witness Government's Exhibit 126?

10 THE COURT: Yes.

11 BY MS. WILKINSON:

12 Q. I've taken it out for you, Mr. Krivosta, and I'm  
showing  
13 you Government's Exhibit 126.

14 Did you examine that padlock in connection  
with this  
15 case?

16 A. I did.

17 Q. And did you examine it in the condition that it's  
in right  
18 now?

19 A. When I received the padlock, it was wrapped up in  
tape in a  
20 similar-type fashion, and I began my examination by

documenting

21 the condition I received it. Then what I did -- I had  
noticed  
22 that the lock had been partially disassembled, so I  
removed  
23 these plates in order to remove this brass part that's  
referred  
24 to as the cylinder bolt from the lock so that I could  
more  
25 easily examine that.

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George Krivosta - Direct

1 Q. Why did you want to get to the cylinder?  
2 A. My examination revealed that there had been attempt  
to  
3 drilling and a drilling -- through the pin area of the  
lock.  
4 Q. Did you see that through a visual inspection?  
5 A. Yes, I could.  
6 Q. And could you describe for the jury what you look  
at on  
7 that padlock that tells you or shows you that there was  
an  
8 attempt to drill with a drill?  
9 A. This bright, shiny circular area; and right above  
it, in  
10 the keyway, where the pins normally would have been,  
there's a  
11 round hole that penetrates into the lock.

12 Q. Let me show you Government's Exhibit 1841.  
13 Does that photo indicate what you're  
describing?  
14 A. Yes, it does.  
15 Q. Could you use that black pen there and take it --  
you see  
16 that up on top of there, and take it down and write  
underneath  
17 on the screen itself and show the jury what you're  
describing  
18 on Government's Exhibit 1841.  
19 A. This first area demonstrates the attempt to drill  
in the  
20 center of the keyway. Off to the side was the second  
area that  
21 was the actual drilling through the pin area on the  
lock. When  
22 I examined these and in my notes, I referred to various  
areas,  
23 this being Area A and this being Area B.  
24 Q. Can we stop right there, Mr. Krivosta, for a  
moment. Now,  
25 you've shown us two impressions, and now you're  
breaking one

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George Krivosta - Direct

1 down into A and B; is that right?

2 A. That's right.

3 Q. Is that the shallow impression or the deep  
impression?

4 A. A and B compose both the shallow and deep  
impression.

5 They're just two different surface areas that I worked  
on in

6 the shallow and deep impression.

7 Q. Now, go ahead and tell us about the other  
impression.

8 A. The other impression: This photo was focused for  
the top

9 area; but down at the bottom of this hole, right down  
in this

10 approximate area, was where -- I'm sorry. I keep on  
hitting

11 that little side button there and wiping things out  
here.

12 Right down in there -- that was at the bottom  
of the

13 hole where what had happened was the drill had almost  
punched

14 all the way through and started separating out the  
metal. But

15 there was also areas of striations that were consistent  
with

16 being the bottom of the hole and would have been -- and  
were

17 suitable for comparative analysis.

18 Q. Now, you started by visually examining this lock;  
is that

19 right?

20 A. I examined it visually. Then I took this part and  
went to

21 an instrument that was referred to as a  
stereomicroscope.

22 Q. What did you do with the lock and the microscope?

23 A. Once I had taken the lock and disassembled it, I  
then took

24 the cylinder bolt, took it under the stereomicroscope;  
and

25 that's where I performed my detailed examinations,  
attempting

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George Krivosta - Direct

1 to find the areas that I felt would be suitable for  
comparative

2 analysis.

3 Q. Before we describe that, were you also provided  
with

4 Government's Exhibit 244, a test impression?

5 A. Yes, I was.

6 MS. WILKINSON: Your Honor, may I give this to  
the

7 witness?

8 THE COURT: Yes.

9 BY MS. WILKINSON:

10 Q. Mr. Krivosta, did you examine Government's Exhibit  
244

11 before you conducted your analysis?

12 A. Yes, I did.

13 MS. WILKINSON: Excuse me, your Honor.

14 BY MS. WILKINSON:

15 Q. Now, are you familiar with what type of metals that  
the  
16 test impression was done on?

17 A. Yes, I am.

18 Q. What is it?

19 A. It's lead.

20 Q. Why would someone do a test impression in lead for  
purposes  
21 of comparing tool marks?

22 A. When one starts performing tool mark comparisons,  
one would

23 want to use the softest metal available first. What  
you do not

24 want to do is change the tool in any form until you've  
got a

25 set of markings off it. If necessary, one can always  
go to

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George Krivosta - Direct

1 harder metals later on; but if one were to start with a  
very  
2 hard metal and change the tool, the ability to make a  
3 comparison might be lost forever.

4 Q. So let's say someone wanted to review the work that  
had

5 been done. Is it better to make the drill bit

impression into

later 6 this soft metal so someone could examine the drill bit

necessary? 7 and make yet another impression, if they found it

8 A. By starting with the lead material, one could start  
9 performing examination. If that lead provided you with  
enough

10 information, there might not be a need to even go any  
further.

11 Q. But if someone else wanted to come in and review  
the work,

12 could you have protected the drill bit as much as you  
could by

13 using lead rather than some harder metal?

14 A. Yes, I would.

15 Q. And if the impression had been done in a harder  
metal, say

16 a metal similar to the padlock, is there a chance the  
17 comparison would have been harder to make, instead of  
easier to

18 make?

19 A. If you started with the harder metal first, you  
might not

20 have captured the markings that were on there; and if  
you

21 altered the drill, you can't go back. Once the drill  
is

22 changed, there's no way you can go backwards. There's  
no time

23 machine that allows you to go backwards.

couldn't 24 Q. So if someone wanted to make a comparison, they  
right? 25 alter the drill bit to make it match something; is that

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George Krivosta - Direct

saying? 1 You could just lose the comparison; is that what you're

2 A. That is correct.

found 3 Q. And what about the padlock itself? If it had been  
the 4 somewhere and then altered in any way, would it inhibit

5 comparison, or assist you in the comparison?

6 A. It would inhibit the comparison.

7 Q. Why is that?

destroyed in 8 A. Because if the markings on the padlock were  
of 9 some manner, again, you can't go back. The possibility

into 10 changing it, you know, by abusing it or something else,  
talked about. 11 it, is so infinitesimal, you know, it wouldn't be

markings 12 But, you know, to take it and obliterate the

distinct 13 so that they couldn't be seen: That's always a

14 possibility.

15 Q. So if someone had seized this padlock and then  
dropped it,

16 if it altered it, would that inhibit your  
identification, or

17 assist it?

18 A. It would inhibit.

19 Q. So can you -- all right. Let's turn to your actual  
20 examination, if we could. You said you looked at this  
21 visually. And can I show you a copy of the test  
impression,

22 Government's 1843.

23 Did you view the test impression, Government's  
244,

24 under the microscope?

25 A. Yes, I did.

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George Krivosta - Direct

1 Q. And does Government's 1843, the photo of that test  
2 impression, fairly and accurately represent what you  
saw under  
3 the microscope?

4 A. Yes.

5 Q. Now, when you look under this -- what do you call  
it; a

6 stereoscopic microscope?

7 A. Stereomicroscope.

8 Q. Do you see two-dimensional, or three-dimensional?

9 A. The image would probably be considered two-  
dimensional; but  
10 you do have a certain amount of three-dimensional  
flavor,  
11 because what you can do is you can reflect the light  
and by  
12 manipulating and moving it around, you can actually see  
depth  
13 to it.

14 Q. Could you do that when you looked at the padlock  
under the  
15 microscope? Could you see depth?

16 A. In the same fashion: By using that instrument, it  
allows  
17 me that same kind of manipulation.

18 Q. So if I showed you these photos, while they reflect  
the  
19 two-dimensional view of what you saw, do they show the  
jury  
20 exactly what you saw under the microscope?

21 A. They do not.

22 Q. Now, is there a reason why you don't normally take  
23 photographs when you do tool mark comparison?

24 A. I feel that an examiner going to the microscope is  
the best  
25 way to view it. Although I have reviewed photos, I  
would

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1 always be more comfortable in reviewing the evidence.

2 Q. And do you make your comparison based on what you  
see

3 through the microscope?

4 A. That is correct.

5 Q. And do you make that comparison based on your  
training and

6 your expertise?

7 A. Yes, I do.

8 Q. Now let's talk about what you did. I want to start  
by

9 showing you Government's Exhibit 157, which I believe  
you've

10 seen before.

11 Do you recognize this?

12 A. Yes, I do.

13 Q. Okay. Let's start on the left side there. What is  
this a

14 photograph of?

15 A. This is a -- the questioned tool marking from the  
lock that

16 was at the bottom of the deeper hole. This particular  
-- right

17 along the edge of the marking of this piece of metal,  
there was

18 a small red-ink mark that had been placed there by  
someone

19 preceding me.

20 Q. So if we want to go back to the visual examination

you did

21 of the lock, this is of the deep impression, not of the  
shallow

22 impression; is that right?

23 A. That is correct.

24 Q. Okay, and on the other side, what is that?

25 A. This is the -- one of the two test impressions that  
were on

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George Krivosta - Direct

1 the piece of lead. One of the impressions that was  
more

2 towards the right and rusted bit had a small red mark  
on it,

3 also, that would have been up in this 12:00 position.

4 Q. Now, when you examined the deep impression, did you  
find

5 tool marks suitable for comparison?

6 A. Yes, I did.

7 MR. TIGAR: At some point, I'd like to voir  
dire.

8 THE COURT: All right. Now would be  
appropriate.

9 MS. WILKINSON: This would probably be the  
best time.

10 THE COURT: All right.

11 MS. WILKINSON: Your Honor, may I just have a  
12 clarification on exactly what issue Mr. Tigar is voir

diring

13 on?

14 THE COURT: I assume it is with respect to  
expertise.

15 MR. TIGAR: Yes, your Honor.

16 MS. WILKINSON: Okay.

17 VOIR DIRE EXAMINATION

18 BY MR. TIGAR:

19 Q. You've been -- good morning, sir. My name is  
Michael

20 Tigar. I'm one of the lawyers appointed to help Terry  
Nichols.

21 You began in the tool marks section in 1979;  
is that

22 right?

23 A. That is correct.

24 Q. How long does it take you to do a -- Do you have an  
average

25 amount of time it takes you to do a typical tool mark

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George Krivosta - Voir Dire

1 examination?

2 A. The question is what becomes a typical examination.  
I've

3 worked performing comparisons anywhere from a matter of  
minutes

4 to four to seven days before we were done with  
identifying one

5 mark.

6 Q. Yes. You said that you had done hundreds of  
thousands of

7 tool mark examinations in a period of 20 years. That  
would

8 work out to how many a year?

9 A. A hundred thousand would be approximately 5,000 a  
year.

10 Q. And you said hundreds of thousands, so how many  
hundreds of

11 thousands do we have here?

12 A. The -- several. I'm certain of that.

13 Q. All right. So you would say that you did, what,  
10,000

14 tool mark identifications a year?

15 A. I -- that wouldn't be unreasonable.

16 Q. All right. And you work 300 days a year, sir?

17 A. Approximately.

18 Q. And so how many does that work out a day of tool  
mark

19 identification, if you're doing 10,000 a year?

20 A. Quite a number. The question is is how do you  
value a tool

21 mark examination and what do you call it. I refer to a  
tool

22 mark examination as every time I take one surface, put  
it

23 against another surface. That's a tool mark  
examination. So

24 therefore, as an example, if I'm examining two test

bullets --

25 all right -- and I look at four tests, now, have I done  
one

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George Krivosta - Voir Dire

1 tool mark examination, or have I done four tool mark  
2 examinations?

3 Q. That was my question --

4 A. At the same time -- sir, please.

5 Q. Yes, go ahead.

6 A. At the same time, if I have six surfaces or 12  
surfaces on

7 that bullet and I bring two of these surfaces up  
against one

8 another and I now look at them, and now I rotate away  
from

9 that, and I look at another surface and I rotate and I  
look at

10 another surface and then three-quarters of the way  
through I

11 finally put two surfaces together, now have I done one  
12 examination, or have I done one examination where I  
matched two

13 surfaces together and at the same time did, say, 10 or  
11 that

14 were not matched to one another, or what we refer to as

15 nonmatches? In actuality, I consider every time I  
bring two

16 surfaces together and I sit there and look at them a  
17 comparison.

11 18 Q. So that in examining a single bullet, you might do  
19 comparisons; is that right?

20 A. That is correct.

21 Q. So when you say you've done many hundreds of  
thousands,  
22 you're using that sort of arithmetic; is that right,  
sir?

23 A. When they punched in data that was stored at the  
laboratory

24 where all we did was kept track of the number of  
casings and/or

25 bullets that were compared vs. test specimens; so in  
other

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George Krivosta - Voir Dire

1 words, if I fired four test bullets, that would be  
considered

2 four tests. They documented that I did 5,000  
examinations in a

3 year in that manner. So if we were to count every  
land, now

4 obviously that would be much higher.

5 Q. All right.

6 A. So by the standards we kept in the laboratory,  
there's

7 documentation of me doing at least 5,000 in one

particular year

8 where we kept track.

9 Q. All right. Now, sir, you have written how many  
articles?

10 A. I have one article published in the Association of  
Firearms

11 and Tool Mark Examiners' Journal.

12 Q. And that is a two-and-a-half-page article that  
describes a

13 firearms accident and recommends procedures not to have  
those

14 kinds of accidents anymore; isn't that fair?

15 A. It also describe a rather unusual comparison where  
the

16 cartridge had been detonated by a non-typical part of  
the

17 firearm striking the primer, instead of the primer  
doing the

18 initiation of the cartridge. What had happened was the  
bottom

19 of the slide had struck the firing pin and caused that  
20 cartridge to detonate.

21 For me to do the comparison in that case,  
there was

22 no --

23 Q. Sir --

24 A. Sir, please, can I finish?

25 There was no way for me to reproduce that type  
of

## George Krivosta - Voir Dire

1 test-firing of a cartridge; so what I had to do was  
make the  
--  
2 cast of the bottom of that part and actually do a tool  
3 different type of tool mark comparison. So the other  
part of  
4 the article was the method in which I performed the  
comparison.

5 Q. Did that article have anything to do with spinning  
drill  
6 bits?

7 A. It does not.

8 Q. Now, in your resume, sir, you note that -- put in a  
number  
9 of continuing education and seminars; do you remember  
that?

10 A. Yes, I did.

11 Q. Now, you didn't -- did you see fit to put on there  
this  
12 certification examination that you went through, on  
your  
13 resume?

14 A. The --

15 Q. Yes or no, sir: Did you put it on there?

16 A. Which certification examination?

17 Q. On examination by Government Counsel, you said  
you'd done  
18 something with somebody called Collaboration Testing.

Do you

19 remember that?

20 A. Yes, I do.

21 Q. Did you put that on your resume?

22 A. We take --

just

23 Q. Did you put that on your resume, sir? Would you

24 answer my question.

25 A. I did not.

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George Krivosta - Voir Dire

an

1 Q. Now, how many times have you testified in court as

2 expert witness comparing spinning drill bits?

3 A. Testifying in court, not once.

4 Q. All right. Is this your first time out?

5 A. That is correct.

the

6 Q. Okay. Now, are you aware of any studies showing

two

7 statistical probability that two impressions made by

8 different drill bits will in fact be different?

Baltimore

9 A. There was a paper published by Joe Reitz of the

He also

10 Police Department in 1975 involving a homicide case.

11 took the work of -- I believe it was Art Parthalow, or

12 assistance in

something like that, from Chicago, and used his

13 the publication of that paper in the December --

14 Q. That paper --

15 A. -- in December of 1975 in the Association of  
Firearm and

16 Tool Mark Examiners' Journal.

17 Q. Did that paper written some 22 years ago contain a  
18 statistical analysis of the probabilities involved in  
comparing

19 different tool marks?

20 A. It did not.

21 Q. So the answer to the question whether there exists  
any

22 literature that would tell us the statistical  
probability of

23 two different marks made by two different drills being  
either

24 the same or different is that there is no such study  
that has

25 been done; is that correct?

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George Krivosta - Voir Dire

1 A. There are several publications of statistical study  
2 discussing ground surfaces, and --

3 Q. Excuse me, sir. I'm talking about spinning drill  
bits. Is

4 the answer to my question that no such study exists?

5 A. Specifically to this singular tool, no.

6 Q. All right. Now, let's look at the way in which you  
7 conducted your test.

8 MS. WILKINSON: Objection, your Honor. This  
is beyond  
9 his expertise.

10 THE COURT: Sustained.

11 MR. TIGAR: I'm sorry, your Honor. I thought  
that was  
12 a preliminary matter. Well, then, may I approach, your  
Honor?

13 THE COURT: Yes you may.

14 If you want to stand and stretch, members of  
the jury,  
15 you may did so; but don't talk.

16 (At the bench:)

17 (Bench Conference 69B2 is not herein transcribed by  
court  
18 order. It is transcribed as a separate sealed  
transcript.)

19

20

21

22

23

24

25

1 (In open court:)

2 THE COURT: You may proceed, Miss Wilkinson.

3 MS. WILKINSON: Thank you, your Honor.

4 MR. TIGAR: Excuse me, your Honor. I left all  
my  
5 secret notes.

6 MS. WILKINSON: Won't want to look at those.

7 DIRECT EXAMINATION CONTINUED

8 BY MS. WILKINSON:

9 Q. Okay. Mr. Krivosta, let's get back to what you did  
in this  
10 case. All right?

11 A. Yes.

12 Q. You were looking at Government's Exhibit 157, and  
you were  
13 going to tell us about -- and let's start at first with  
tool  
14 marks that you saw that were sufficient for comparison.  
Did  
15 you see any on the left side here from the padlock from  
the  
16 deep impression that you thought you could compare to  
the test  
17 impression?

18 MR. TIGAR: Excuse me, your Honor. Object to  
the form

19 of the question.

20 THE COURT: Overruled.

21 BY MS. WILKINSON:

22 Q. Show us the tool marks, if you had found any, Mr.  
Krivosta,  
23 that you could compare.

24 MS. WILKINSON: Could you hold on one second.

25 Your Honor, could I ask that the pen be a  
different

7755

George Krivosta - Direct

1 color? It's very hard to see on this photograph.  
Sorry.

2 BY MS. WILKINSON:

3 Q. Why don't you erase your marks, Mr. Krivosta --  
there you  
4 go -- and start again, please.

5 A. The area that was examined in relative to this one  
6 performed my particular photo, I had this photo with me when I  
7 examinations. Set into that approximate area.

8 Q. Now, you said you had the photograph. Were you  
looking  
9 through the microscope and looking at the photograph?

10 A. When I performed comparative analysis -- By the  
way, I have  
11 now shifted from the use of the stereomicroscope to

using a

12 tool that's referred to as a "forensic ballistic  
comparison

13 microscope." That is a type of tool that's essentially  
two

14 microscopes, different optic systems, so you can vary  
the

15 magnifications that combines the image together in a  
bridge so

16 that you're viewing it in the same fashion we have in  
front of

17 us. Hairline splits to center; on one side you can  
place your

18 questioned specimen, on the opposite side you can place  
your

19 test; and you can vary the lighting and the angles and

20 everything else to make the markings more visible.

21 Q. So does this photo show some but not all of what  
you saw

22 under the microscope?

23 A. That is correct.

24 Q. Now, you've showed us the marks there on the left  
side.

25 And could you start down here at the bottom and tell us  
what

7756

George Krivosta - Direct

1 we're seeing, just starting on the left side and going  
up.

There  
areas  
you may

2 A. These are all different striations that are left.  
3 are some -- the -- when you take a photo, you have some  
4 that will be in very sharp focus. You have others that  
5 have a little softer focus.

not. As

6 At the same time, you will have areas that are  
7 probably illuminated and then you have others that are  
8 an example; right down here, there's one striation that  
9 corresponds to one on the other side.

points,

10 As we continue up, we have areas of high  
11 troughs, high points, troughs, other troughs, ridges.

All  
You can

12 these are what we refer to as "consecutive patterns."  
13 have peaks, you can have ridges, you can have valleys.

Any one  
dimensional

14 of these peaks can be rounded. They have a three-

all  
together,

15 nature. For something to be in congruence, this has to  
16 agree. As we go and we string more and more of these

becomes more

17 what we refer to as consecutive matching pairs, it  
18 significant.

Honor.

19 MR. TIGAR: Objection to significance, your

20 THE COURT: Well, significant to the

comparison?

21 THE WITNESS: Yes.

22 THE COURT: All right. Overruled.

23 BY MS. WILKINSON:

24 Q. Let's stick with the comparison, Mr. Krivosta.

25 But go up here to the left. You're telling us  
that

7757

George Krivosta - Direct

1 you're seeing some of these striations where my pen is  
going;

2 is that correct?

3 A. That's correct.

4 Q. Now, up here, this big mark: That's not a  
striation, was

5 it?

6 A. No, no. That's -- if I recall, there was a chip or  
7 something that was left adhering on its place.

8 Q. So what causes something like that to occur in the  
padlock?

9 A. That was just a small piece of metal that was --  
that was

10 still left in there and was something else that was  
kind of

11 like attached in the view of the field.

12 Q. Now, let's go over to the right side, to the test  
13 impressions. Can you compare some of the test

impressions on

14 the right with the tool mark impressions on the left?

15 A. All these markings -- I hit that again -- just as  
they come

16 in to this hairline, the troughs, the high spots, this  
is what

17 we're looking to find on the other side. And again,  
what we're

18 looking to see is a congruence of these -- when I say

19 "congruence," I mean looking here and finding it on the  
other

20 side, looking here and finding it on the other side.

21 Q. Do you see those similarities on the other side?

22 A. Yes, I do.

23 Q. Now, go up a little bit further here. You see some  
more

24 striations up here on the right; correct?

25 A. That is correct.

7758

George Krivosta - Direct

1 Q. You didn't see these similar markings on the left;  
is that

2 right?

3 A. That is correct.

4 Q. Does that change the significance of the  
similarities that

5 you've identified below?

6 A. What we have here is we have an area that  
reproduced. We

7 can give it some weight. Now we have an area here  
where the

8 photo doesn't display it and it was there, or maybe it  
wasn't

9 there at all. You know, that's weighed, that's  
considered; but

10 it has to be judged against what we've seen previously.

11 Q. Now, did you look under the microscope and look  
around not

12 just at what we see in this photo but at other  
similarities in

13 the deep impression?

14 A. Yes. There were other areas down in there that had  
typical

15 areas like this. This was an area. You can't see it,  
but this

16 was actually like down in here. This was one of those  
areas

17 where it almost punched through and split. So when we  
see a

18 dark area in here -- and there are some other dark  
areas --

19 what we're talking about is either voids or areas we're  
not

20 seeing in the photo because we have a light problem.

21 Q. Now, keeping that --

22 A. But there are other areas similar to this and the  
other

23 areas around that hole.

24 Q. Mr. Krivosta, keeping that in mind, does that

change what

25 you believe are the similarities that you see here that  
you've

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George Krivosta - Direct

1 identified for the jury?

2 A. I looked at the areas, and I weighed them in  
addition. But

3 this was part of what I considered, was what I saw  
right here.

4 Q. And do you still believe that these are similar?

5 A. Yes.

6 Q. And that you've seen these patterns of  
reproducibility?

7 A. Yes.

8 Q. Did you see other patterns of reproducibility in  
the deep

9 impression of the lock?

10 A. Yes, I did.

11 Q. If you could clear your screen, please.

12 Did you also look at the shallow impression to  
see if

13 you saw any striations for comparison?

14 A. Yes, I did.

15 Q. All right. Let me show you Government's Exhibit  
1841

16 again. Take the jury to the shallow impression and  
tell them

17 what you saw.  
18 A. I had reflected in my notes, as I had previously  
marked on  
19 this, there were two areas I had looked at --  
20 Q. Can I zoom that in for you a little bit, so that  
it's  
21 easier to see? Does that help?  
22 A. Okay. Yes.  
23 Q. Go ahead.  
24 A. This area -- meaning this whole area -- I referred  
to in my  
25 notes that I kept on this comparison as Area A. This  
area was

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George Krivosta - Direct

1 Area B. When I did my comparisons against a test  
surface, I  
2 indicated to you that -- and what we discussed is that  
there  
3 were two cutting surfaces on that. The one that I  
indicated  
4 had the red mark on the test, that I had also marked in  
my  
5 notes as Area A, that I performed comparisons between  
this and  
6 searching for areas of similarity.  
7 Q. Did you find them?  
8 A. Yes, I did.

9 Q. And did you find them in Section B that you've  
identified  
10 on this photograph?  
11 A. Then what I had to do was shift to the other part  
of the  
12 cutting of that test impression, that was the result of  
the  
13 other cutting edge. And those I compared against this  
area as  
14 B and again found similarities.  
15 Q. And did you -- did you have sufficient time to look  
at all  
16 the striations that you could under the microscope in  
both the  
17 deep and the shallow impression -- impressions?  
18 A. I had an adequate amount of time, yes.  
19 Q. And did you see similarities in all those sections?  
20 A. Yes, I did.  
21 Q. And they were all similar to the test impression  
that was  
22 done, Government's Exhibit 244 that you examined?  
23 A. There were areas that were similar. There were  
also what  
24 we refer to as some incongruences.  
25 Q. And tell us why you would see incongruences.  
Excuse me.

the bit  
have  
of the  
go

1 A. In this particular case, what we have is because  
2 wasn't fixed -- you had areas where the pressure might  
3 been different from other parts. If you look at some  
4 bold striate, which are the -- you're seeing that they  
5 almost the full length.

recontinue,  
performed  
using  
referred to as

6 The finer stuff would break off, possibly  
7 possibly break off. So what became necessary when I  
8 my comparisons in this area is I would look for a spot  
9 the bulk of the stuff to put myself into what's  
10 phase. I would look for small areas of  
reproducibility; and

So what  
looking

11 then there would be an incongruence, a dissimilarity.  
12 I would now do is I can shift using other bold stuff,  
13 for other areas. And I would find pattern -- areas of  
14 striations that also were similar or in congruence.

like  
this  
image.

15 Now, what I do is rather than be able to take,  
16 that one photo showed of everything in a nice line, in  
17 case what you have to do is you have to make a mental  
18 You have to look at something that you think is not

just by

19 random chance, because the pattern is complex enough,  
follow to

20 another area and find something else in another area  
and

21 mentally bring these things together.

22 Q. Because you have dissimilarities in between. Is  
that what

23 you're talking about?

24 A. That's correct.

25 Q. Now, what would cause some of these dissimilarities  
here,

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George Krivosta - Direct

1 in the shallow impression?

2 A. The fact that the drill-end surface wasn't held  
perfectly

3 as nice as that drill-bit test impression or as well as  
the

4 deep hole where the drill was being secured by the  
sides of the

5 hole.

6 Q. So when you look at Government's Exhibit 1843,  
which -- can

7 you clear your pen there for a moment, please -- which  
is the

8 photo of the test impression, you see these perfect  
circular

9 patterns -- is that right -- and striations?

10 A. Yes.

11 Q. And why does that test impression photograph show  
those  
12 perfectly round striations vs. Government Exhibit 1841  
of the  
13 padlock, where you don't see those perfectly round  
patterns of  
14 striation?

15 A. In this case, when making test impressions, I  
didn't make  
16 this particular one; but if I was going to make a test  
17 impression, I would take the drill bit, place it in the  
drill  
18 press, place the piece of flat stock down, and come in  
19 perfectly at 90 degrees, not allowing the stock and the  
drill  
20 bit to have any significant amount of movement. I  
would try to  
21 minimize all the movement that could cause all the  
other  
22 problems.

23 Q. So you would be using laboratory conditions to --

24 A. That's correct.

25 Q. -- cause that drill impression; is that correct?

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George Krivosta - Direct

1 A. Yes.

whether 2 Q. And from examining the padlock, can you determine  
3 that was drilled under laboratory conditions?

4 A. It was not.

Honor. 5 MS. WILKINSON: No further questions, your

cross. 6 THE COURT: We'll take the recess before the

7 MR. TIGAR: Thank you.

8 THE COURT: You may step down.

take 9 Members of the jury, we'll, as usual practice,

usual, you 10 our 20-minute recess, during which, of course, as

you're 11 are cautioned to avoid discussion of anything that

avoid 12 hearing in this case and anything about the case and

the 13 anything outside of our evidence so that you can follow

and the 14 obligation of your oath and decide according to the law

15 evidence and the instructions.

16 You're excused now, 20 minutes.

17 (Jury out at 10:29 a.m.)

18 THE COURT: Sit down.

19 Recess, 20 minutes.

20 (Recess at 10:30 a.m.)

21 (Reconvened at 10:50 a.m.)

22 THE COURT: Be seated, please.

23 (Jury in at 10:50 a.m.)

24 THE COURT: Resume the stand, please.

25 Mr. Tigar, you may inquire.

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George Krivosta – Cross

1 CROSS-EXAMINATION

2 BY MR. TIGAR:

3 Q. Mr. Krivosta, when were you retained by the  
Government in  
4 this case?

5 A. I believe it was approximately July 17 of this  
year.

6 Q. And did you contact the Government to say that you  
were  
7 available, or did they contact you and ask you about  
your  
8 availability?

9 A. They contacted me and asked me about my  
availability.

10 Q. Now, before testifying in this case, you had  
testified in a  
11 United States District Court before; is that correct?

12 A. That is correct.

13 Q. How many times?

14 A. One occasion.

15 Q. And where was that?

16 A. In the Eastern District of New York.

17 Q. Brooklyn, or Long Island?

18 A. Long Island.

19 Q. What was the subject of that testimony?

20 A. It was a civil case, as I recall. It involved the  
death of  
21 an individual with the Suffolk County Police Department  
being  
22 involved.

23 Q. Now, in your work in Suffolk County, you teach  
people how  
24 to respond to crime scenes, don't you?

25 A. That is correct.

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George Krivosta - Cross

1 Q. And do you attend crime scenes yourself?

2 A. I have on occasion. Currently, I do not.

3 Q. Now, when retrieving physical evidence at a crime  
scene,  
4 you know it is important to mark it at the time it is  
5 retrieved; is that correct?

6 A. The general consensus is either to mark the  
evidence or to  
7 place the evidence into a sealed container and mark the  
sealed  
8 container.

9 Q. And between the time it is retrieved at the crime

scene and

10 the time it is tested, it is important to keep it under  
11 conditions that make sure it cannot be altered in some  
way. Is  
12 that correct?

13 A. That is correct.

14 Q. And is it important when retrieving evidence at a  
crime  
15 scene that may be suitable for taking fingerprint  
impressions

16 to make sure that the fingerprints are not disturbed?

17 A. That is correct.

18 Q. In retrieving a tool at a crime scene, is it  
important to

19 handle the tool in such a way that any foreign objects  
or

20 matter that might be on the tool is preserved?

21 A. That is correct.

22 Q. Specifically with respect to a drill -- you have  
the drill

23 in front of you, don't you, sir?

24 A. Yes.

25 Q. If someone uses a drill in a vertical position --  
that is

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George Krivosta - Cross

1 drilling upwards -- it's likely that the thing that's  
being

2 drilled, shavings or chips of it are going to trickle  
down onto

3 the drill and into the chuck. Is that right?

4 A. I guess that might be a possibility.

5 Q. And would you as a crime scene person want to make  
sure

6 that if any such evidence existed it was collected and  
7 preserved?

8 A. I would make every attempt to preserve the  
evidence.

9 Q. Now, in this case, sir, do you know what happened  
to the

10 lock that you examined between the time it was  
recovered at a

11 crime scene and the time it was first examined by the  
FBI?

12 A. I do not.

13 Q. You did not take your own pictures of the lock, did  
you,

14 sir?

15 A. I did not.

16 Q. And with respect to the drill bit, do you know how  
long a

17 period of time elapsed between the offense that was  
committed

18 and the recovery of the drill bit?

19 A. I do not.

20 Q. You testified earlier that each time a tool is  
used,

21 such -- well, each time a drill bit is used to cut

something,

22 there is a likelihood that the drill bit will be  
altered or

23 changed in some way; is that right?

24 A. Yes, it can.

25 Q. And is that why -- is that one reason why it is  
significant

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George Krivosta - Cross

1 to know the amount of time between the offense and the  
time

2 that the drill bit is recovered and examined?

3 A. One would want to attempt to safeguard the tool to  
keep the

4 tool from being changed from its condition so that the  
5 possibility of an association might be made. But, you

know,

6 going in the other direction starts approaching the

7 mathematically improbable. To change it into something

--

8 Q. Now, you say "the mathematically improbable." Are  
you

9 referring to any study of the statistical probability  
involved

10 in identifying a drill bit with a mark that the drill  
bit has

11 made?

12 A. There were a number of studies relative to rare  
chance,

bits 13 which is what this would be talking about. To drill  
14 specifically as I stated before, there are none.  
15 Q. All right.  
16 A. But this would still be just a rare chance.  
17 Q. So we're talking chance; right?  
18 A. Yes.  
19 Q. We're talking coincidence; right?  
20 A. Yes.  
-- would 21 Q. Now, when we're talking about coincidence, are we  
dropped by 22 you be concerned to know whether the lock had been  
23 somebody before you looked at it?  
change 24 A. Once again, if the lock were dropped, it could  
might 25 what's there. But to change it into something that we

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George Krivosta - Cross

purely by 1 find in the future and associate would have to be  
2 rare chance.  
in it 3 Q. But you're saying there could be some change made  
4 from being dropped?  
5 A. Yes.

the time  
scene and

6 Q. Do you know whether this lock was dropped between  
7 you looked at -- the time it was seized at a crime  
8 the time you looked at it?

9 A. I do not know.

bit. In

10 Q. Now, you spoke about the cutting edges of a drill  
11 terms of a drill bit, what are flutes?

bit in a

12 A. Flutes are the grooves that are cut in the drill  
13 spiral fashion that allow the chips of metal to come  
14 out.

The

14 Q. I'm holding up something from Government's 151A.  
15 flutes are these things that are in a spiral form on  
16 the  
17 drill-bit stock; is that right?

17 A. That's correct.

they?

18 Q. Now, the edges of the flutes are sharpened, aren't

19 A. They are trued up and uniform, and they have some  
20 sharpness, yes.

metal

21 Q. So that if I'm drilling something, say a piece of  
22 and  
23 of the  
24 that is an inch or so thick, and I wiggle my drill back  
forth at high speed, the flutes will cut into the sides  
hole I'm making; correct?

25 A. That is correct.

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George Krivosta - Cross

cut in 1 Q. So that when you told us that a deep hole that is  
account of 2 metal is more likely to hold the drill, did you take  
wiggling 3 the fact that someone drilling such a hole might be  
4 the drill?

it, we 5 A. Absolutely. If this were the drill and we wiggled  
6 could widen up this area here.

going to 7 The edge of the bit right down here is not  
8 wiggle. That's still going to be supported.

9 Q. Showing you now, sir, what has been received as  
shallow hole, 10 Government's Exhibit 1842, is this a picture of a  
11 or a deep hole? Do you remember?

one of 12 A. This appears to be the -- the bottom, the photo --  
13 the photos from the bottom of the deep hole.

these 14 Q. All right. And would you agree with me, sir, that  
they 15 marks here, these striations are not circular; that  
16 deviate from being circular?

but 17 A. The -- they have that appearance of being deviated,  
of 18 that same kind of deviation could be -- or appearance  
that 19 deviation could be caused by a bending of the stock of  
bend, it 20 metal as it was separating out. If that would now  
21 would give the appearance of a bend. Does not  
necessarily mean  
22 that that wasn't spinning in a nice, true circular  
pattern at  
23 that point.

24 Q. Of course. That is to say, a drill always is going  
to spin  
25 circular; right? That is to say, it does drill when  
you push

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George Krivosta - Cross

1 the button; it makes a nice, clean circle, doesn't it?  
2 A. It spins, yes.  
3 Q. Right. It spins. Now, the question is what -- The  
marks  
4 that are made are determined by the relationship  
between the  
5 drill that's spinning and the stock that's being cut;  
right?  
6 A. Can you -- one more time.  
7 Q. Yes. The marks that are made by the drill are  
determined

8 by the relationship between the spinning drill and  
what's being

9 cut; correct?

10 A. The cutting edge of that drill bit is what makes  
the marks.

11 Q. That's right. And the kind of mark is determined  
by the

12 relationship.

13 A. That's right. I said before that if there is  
movement and

14 there is play, that can vary somewhat. At the same  
time, if

15 there is no movement, it can be much more uniform.

16 Q. Now, do you know the circumstances under which the  
lock

17 that was drilled was drilled?

18 A. No.

19 Q. You don't know where the lock was, whether it was  
hanging

20 underneath a metal shroud, upside down, right side up,  
or

21 sideways; right?

22 A. I do not.

23 Q. Now, you testified on direct examination that as  
you were

24 looking at this shallow hole you were thinking about  
phase. Is

25 that correct?

## George Krivosta – Cross

1 A. Yes. I used that term "phase."

2 Q. The term "phase" is a term used in firearms  
identification,

3 isn't it, sir?

4 A. Yes.

5 Q. Do you know of any published study anywhere by a  
reputable

6 scientific person that uses the term "phase" in  
connection with

7 the analysis of a spinning drill bit?

8 A. No.

9 Q. Now, when you examined the drill bit or when you  
examined

10 what you testified about here today, you did that in  
Cheyenne,

11 Wyoming; is that correct?

12 A. That is correct.

13 Q. And you drove from Denver to Cheyenne with Agent  
Cadigan,

14 did you not?

15 A. Yes, I did.

16 Q. Now, in driving to Cheyenne with Agent Cadigan, did  
you

17 discuss with him what he had found when he looked at  
these

18 things?

19 A. No.

20 Q. Did Agent Cadigan accompany you to the laboratory?

21 A. Yes, he did.

22 Q. Did Agent Cadigan tell you anything that he had  
found when

23 looking at these things?

24 A. During the examinations, I was initially working on  
the

25 shallow end, and he was encouraging me to go to the  
deep part

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George Krivosta - Cross

1 of the hole. But I wasn't satisfied that I was  
completed -- my

2 examinations at the shallow end.

3 Q. Did he tell you why he thought you should be  
working on the

4 deeper part of the hole instead of the shallow part?

5 A. He felt that the -- the markings down on the -- on  
the deep

6 part of the hole were the ones that he had associated,  
and he

7 was encouraging me to go there.

8 From what I was observing at the shallow end,  
I felt I

9 still had enough to work on the shallow end, and I  
wanted to

10 devote more time to it.

11 Q. So you were willing to go further in finding  
similarities

12 than FBI Agent Cadigan; is that right?

13 A. I don't know what you call "further." I was asked  
to do an  
14 examination. I did it according to the criteria that I  
15 normally follow, and that's how I was going to proceed.

16 Q. My question is: Isn't it your understanding, sir,  
that you  
17 were going to come to a different conclusion than Agent  
18 Cadigan?

19 MS. WILKINSON: Objection, your Honor.

20 THE COURT: Sustained.

21 BY MR. TIGAR:

22 Q. When you do examinations in a laboratory, is it  
relevant to  
23 you to know what other examiners have concluded looking  
at the  
24 same thing?

25 A. I was aware that Agent Cadigan --

7773

George Krivosta - Cross

1 THE COURT: Answer the question.

2 THE WITNESS: Okay. Can you just give me the  
3 question, please.

4 BY MR. TIGAR:

5 Q. Yes, sir. When you do examinations, is it relevant  
to you

6 to know what examiners have concluded with respect to  
the same

7 thing?

8 A. Yes, it is.

9 Q. And in fact, sir, in your prior experience  
testifying, you

10 have been called in to testify to additional or  
different

11 conclusions than those reached by official law  
enforcement

12 people in the jurisdiction where you're testifying?

13 MS. WILKINSON: Objection, your Honor, based  
on the

14 prior ruling. Conclusions.

15 THE COURT: Well, overruled.

16 BY MR. TIGAR:

17 Q. Just yes or no, sir.

18 A. One more time on the question.

19 Q. Yes, sir. In your background, sir, isn't it the  
fact that

20 you have been retained to testify in cases -- in cases  
where

21 you're going for give an opinion that goes beyond or is

22 different from the opinion given by the law enforcement  
people

23 in the jurisdiction where you're testifying?

24 A. Yes, I have.

25 Q. And in fact, you did that in a New Jersey case,  
didn't you,

George Krivosta - Cross

1 sir?

2 A. In a New Jersey case and in a New York case, also.

3 Q. All right. Now, is this a case in which your  
finding of

4 similarities, your understanding, is different from the  
finding

5 of similarities and differences that Agent Cadigan  
thought

6 should be pointed out?

7 A. We are both in agreement on what's in the -- the  
deep hole.

8 Q. But you are not in agreement on what's in the  
shallow hole;

9 right?

10 A. I believe that may be the case, yes.

11 Q. All right. Now, did you measure the drill bit?

12 A. I did not.

13 Q. Do you know what the diameter of the drill bit is?

14 A. I believe it was a quarter-inch drill bit.

15 Q. You don't know.

16 A. No.

17 Q. Did you take measurements off it? Did you measure  
the hole

18 in the lock?

19 A. I did not.

20 Q. Do you have an idea what the size of the hole is?  
21 A. It should be for what that drill bit is.  
22 Q. Oh. Is it your testimony that the hole in the lock  
should  
23 be identical to the diameter of the drill bit?  
24 A. Not identical, because you can have differences. I  
did not  
25 measure the hole. My goal was to do a microscopic  
comparison

7775

George Krivosta - Cross

1 of one item to another item.  
2 Q. Did you do your own test impression in lead?  
3 A. I did not.  
4 Q. You testified that it is important to know what  
material  
5 the test impression is used in; correct? Or done in?  
6 A. Yes, it can be important, yes.  
7 Q. Well, you said that you want to make sure that the  
test  
8 impression material is soft; correct?  
9 A. Right. You always start with the softest item  
first so as  
10 not to change the tool.  
11 Q. And do you know whether the lead in which the test  
12 impression was made contained antimony or recycled  
products or

13 anything that would have cautioned it to be hard?

14 A. I do not.

15 Q. You'd expect the FBI to get the right kind of lead;  
right?

16 A. Relative to the hardness of metals, even if we put  
a little

17 hardener in it, lead would still be considered soft.

18 Q. My question is: You'd expect the FBI to get the  
right kind

19 of lead, wouldn't you?

20 A. Yes.

21 Q. Did you know if you were going to make that test  
impression

22 in lead with respect to compare with -- you said you'd  
use a

23 drill press; correct?

24 A. Yes.

25 Q. Would you run the -- as you lifted the drill bit up  
from

7776

George Krivosta - Cross

1 the test-impression material, would you leave the drill  
press

2 spinning, or would you let it stop?

3 A. It would be spinning.

4 Q. Spinning. And do you know whether or not when the  
drill

was 5 was -- whatever drill bit was used to drill this lock  
spinning 6 withdrawn from the lock -- do you know whether it was  
stopped 7 at the time it was withdrawn from the lock or if it had  
8 down there?

9 A. I wouldn't know.

10 Q. You testified, sir, about your experience in  
ballistics; is 11 that correct?

12 A. Yes.

13 Q. Now, when a Smith & Wesson revolver with a 4-inch  
barrel is 14 fired, at what -- do you know the speed of rotation of  
the 15 bullet as it leaves the barrel?

16 A. They're spinning very fast. You know, depending on  
what 17 load we pick, if we talk about, say, something coming  
up, to 18 keep the mathematics simple, a thousand feet per  
second, which

19 is reasonable for a .38 Special Smith & Wesson -- and I  
think

20 that the twists are like 1 in 15 or 1 in 18, which is a  
little

21 tough mathematically. So we'd be talking about, just  
to make

22 it 1 in 12, to keep the mathematics simple -- we're  
talking

23 about a thousand rotations a second. When we talk

about drill

24 terminology, we're talking about rotations a minute, so  
we have

25 to rotate by another 60. So we're talking about 60,000

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George Krivosta - Cross

1 rotations a minute, where a drill is spinning at a  
fraction of

2 that. They're only spinning at about, say, 3,000  
rotations a

3 minute.

4 Q. Exactly, sir. And the bullet is also moving a good  
deal

5 faster than your average homeowner can punch a hole  
with a

6 drill. Right?

7 A. That's correct.

8 Q. All right. Now, as the bullet moves out of the  
barrel of

9 the gun, it is twisting. Is that correct? Is that  
your

10 understanding?

11 A. It's spinning.

12 Q. It's turning, spinning?

13 A. But it should be following the rifling.

14 Q. It's spinning and following the rifling.

15 A. Yes.

16 MS. WILKINSON: Your Honor, I'm going to  
object to

17 Mr. Tigar agreeing with the --

18 THE COURT: Yes. Withhold your comments,  
please.

19 MR. TIGAR: Yes, your Honor.

20 BY MR. TIGAR:

21 Q. As the bullet spins inside the barrel, how many  
rotations

22 will it make between the time the firearm is discharged  
and the

23 time it leaves the front end of the barrel on a 4-inch  
barrel?

24 A. It's going to make maybe a third of a rotation.

25 Q. And the difference is -- between what we're seeing  
is that

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George Krivosta - Cross

1 your hypothesis is that a spinning drill bit down  
inside the

2 hole held there for a minute -- Suppose I put a drill  
down

3 inside a hole and hold it there for a minute and pull  
the

4 trigger. How many rotations will that drill bit make  
inside

5 that hole?

6 A. It's making its rotations. It's cutting away  
material, and

7 it gets deeper and deeper. When you pull it away, it  
stops  
8 cutting and the hole doesn't get any deeper. So I  
don't know  
9 where this spinning has anything to do with one  
another.

10 Q. I didn't ask you about that, sir. I asked you the  
11 question -- and it's simple mathematics: How many  
times is  
12 that drill bit going to be turning around in that hole  
in a  
13 minute?

14 A. It may make 6,000 -- 3,000 revolutions in that  
minute.

15 Q. Well, would you look at the drill in front of you,  
sir.

16 And does it have marked on there what the rated RPM is?

17 A. My guesstimate of rotations -- this is only 400  
rotations a  
18 minute.

19 Q. Yeah. And do you know of any commercial home drill  
that  
20 makes 6,000 -- runs at 6,000 RPM?

21 A. No.

22 Q. Okay. So your 6,000 was an estimate and you want  
to  
23 reconsider it?

24 A. Yeah.

25 Q. What would you make it now?

George Krivosta – Cross

1 A. Less --

2 Q. Pardon?

3 A. Less than a thousand.

4 MR. TIGAR: Will your Honor indulge me for a  
moment?

5 THE COURT: Yes.

6 MR. TIGAR: Nothing further.

7 THE COURT: Any redirect?

8 MS. WILKINSON: Yes.

9 THE COURT: All right.

10 REDIRECT EXAMINATION

11 BY MS. WILKINSON:

12 Q. Mr. Krivosta, during cross-examination, you were  
asked  
you

13 about the examination you conducted in Cheyenne. Do

14 remember that?

15 A. Yes, do I.

16 Q. Mr. Cadigan was present?

17 A. Yes, he was.

18 Q. Was there also a member of the defense team that  
was

19 present observing everything that you did?

20 A. Yes, there was.

21 Q. Now, you told Mr. Tigar that you and Mr. Cadigan

had

observing 22 discussed what you were seeing at the time you were

23 the lock through the microscope. Is that right?

24 A. Yes.

25 Q. And you were focusing at that time on the shallow

7780

George Krivosta - Redirect

1 impression, and he was asking you to look at the deeper

2 impression; is that right?

3 A. Yes.

whether 4 Q. Now, you -- I believe defense counsel asked you

that 5 there was some disagreement over your conclusions. Is

6 right?

7 A. Yes, he did.

between 8 Q. Now, do you understand what the disagreement was

9 the two of you?

the -- 10 A. The -- I thought that he had gone "inconclusive" on

had not 11 the shallower impression. That's not to say that it

12 been the result of the drill, but he had not made a

13 determination.

14 And in actuality, at one point I had focused

the scope

15 and I leaned out of the way and I asked him to lean  
over my

16 shoulder and to look at what I had, and I had shown him  
some of

17 what I was looking at.

18 Q. So he was more conservative on that shallow  
impression; is

19 that right?

20 A. Yes.

21 Q. Now, as to the deep impression, did you agree on  
your

22 findings, both you and Mr. Cadigan, of the similarities  
that

23 you saw in the deep impression?

24 A. Without doubt.

25 Q. Have you described that comparison picture before  
that

7781

George Krivosta – Redirect

1 you've seen, Government's Exhibit 157, which shows the  
2 similarities?

3 This is the photograph Mr. Cadigan put  
together.

4 Right?

5 A. Yes.

6 Q. How did you describe that photograph?

7 A. As textbook picture perfect.

8 Q. Now, you were also asked about whether you have  
been hired

9 on certain occasions to give different opinions from  
others.

10 Is that right?

11 A. Yes.

12 Q. Now, have you come to an opinion or done a review  
of this

13 case prior to when the Government asked you about its  
findings?

14 MR. TIGAR: Object to that, your Honor.

15 THE COURT: Sustained.

16 BY MS. WILKINSON:

17 Q. Mr. Krivosta, have you changed your opinion or your  
belief

18 about the similarities of this tool mark and tool mark  
19 impression in any way since you first viewed these  
photographs?

20 A. I have not.

21 Q. And does it matter whether the Government hires  
you, or

22 whether defense hires you?

23 A. It does not.

24 MS. WILKINSON: No further questions.

25 THE COURT: Any redirect (sic)?

George Krivosta – Redirect

1 MR. TIGAR: Yes, your Honor, quickly.

2 RE-CROSS-EXAMINATION

3 BY MR. TIGAR:

4 Q. Textbook picture perfect. Is that what you said?

5 A. Yes.

6 Q. What textbook?

7 A. If I was going to write one and put this chapter in  
it,

8 this would be an excellent picture to use.

9 Q. Thank you. But is there in the scientific  
community a

10 textbook in which the methodology that you used in  
finding

11 these similarities is validated according to acceptable

12 scientific principles?

13 MS. WILKINSON: Objection, your Honor.

14 THE COURT: Overruled.

15 THE WITNESS: I believe if you review the  
criteria in

16 the published data that's within the --

17 THE COURT: Answer the question, will you,  
please.

18 THE WITNESS: Yes, your Honor.

19 There are journals that do support my  
methodology.

20 BY MR. TIGAR:

21 Q. Is there a -- my question was is there a textbook  
that

to 22 validates the finding of these similarities according  
23 acceptable scientific statistical principles?  
24 A. Textbook, I don't know of one specifically.  
25 MR. TIGAR: Thank you.

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George Krivosta – Redirect

1 REDIRECT EXAMINATION

2 BY MS. WILKINSON:

3 Q. Mr. Krivosta, do you consider the drill bit -- the  
4 substantive drill-bit comparison to be part of the tool  
marks  
5 comparisons that you do?

6 MR. TIGAR: Objection. Improper redirect.

7 THE COURT: Sustained.

8 BY MS. WILKINSON:

9 Q. Mr. Krivosta, you said that you told Mr. Tigar that  
there  
10 was no literature or no book that you're aware of to  
support  
11 the scientific comparisons used in drill-bit  
comparison. Is

12 that right?

13 A. Yes.

14 Q. Do you have more general scientific study or  
statistical

15 data that you use in tool marks to support your  
comparison?

16 A. Yes.

17 Q. And what do you use to make that type -- to support  
your  
18 methodology?

19 A. There are a number of articles and journals that  
have been  
20 published throughout the year, many of them appearing  
in the  
21 Association of Firearm/Tool Mark Examiners Journal,  
other in  
22 the Journal of Forensic Sciences.

23 As an example, the idea of finding areas of  
congruence  
24 and how significant they are, a fellow by the name of  
Biasotti  
25 did his master's thesis and published this as early as  
-- I

7784

George Krivosta - Redirect

1 believe he started his thesis in like 1955 and  
published in

2 several journals from '57 through '59. And this is  
very

3 well-known in the field.

4 Q. Now, when we move to the actual drill bit that  
leaves the

5 tool mark in a padlock or some other surface, is the  
impression

6 created when the drill bit stops?

7 A. It's being created as the drill bit is cutting, and  
it's  
8 going to stop when that drill bit breaks contact. As  
long as  
9 the drill bit is turning, it's going to keep on  
cutting,  
10 creating new markings.

11 The old markings come out as the chips.

12 Q. So with Government's Exhibit 126, I believe it is,  
the  
13 padlock: If someone had drilled all the way through  
and not  
14 stopped, would you find a tool mark?

15 A. If they had gone just a little bit further, they  
would have  
16 eliminated the possibility of finding tool marks.

17 MS. WILKINSON: No further questions.

18 RE-CROSS-EXAMINATION

19 BY MR. TIGAR:

20 Q. Are you familiar with Dr. -- with -- excuse me --  
21 Mr. Biasotti is now deceased. Is that correct?

22 A. To be -- I'm not even aware of that. I couldn't  
recall.

23 Q. Yes. Are you familiar with the chapter on the tool  
mark  
24 identification and you -- co-authored by Mr. Alfred  
Biasotti  
25 and Mr. John Murdock in the latest edition of the  
treatise

George Krivosta – Recross

1 Modern Scientific Evidence?

2 A. Can I see the cover, please.

3 Q. Have you read that?

4 A. I don't think I've had the opportunity to read that  
yet.

5 MR. TIGAR: All right. Nothing further.  
Thank you.

6 MS. WILKINSON: This witness is dismissed,  
your Honor.

7 THE COURT: Are you agreed to dismiss the  
witness?

8 MR. TIGAR: Yes, your Honor, we agree.

9 THE COURT: You may step down. You're  
excused.

10 THE WITNESS: Have a good day, your Honor.

11 THE COURT: Next, please.

12 MR. MACKEY: Your Honor, we would call Special  
Agent

13 Larry Tongate.

14 THE COURT: Please come forward, Mr. Tongate.

15 (Larry Tongate affirmed.)

16 THE COURTROOM DEPUTY: Would you have a seat,  
please.

17 Would you state your full name for the record  
and

18 spell your last name.

A-T-E. 19 THE WITNESS: It's Larry G. Tongate, T-0-N-G-

20 THE COURT: Proceed, Ms. Wilkinson.

21 MS. WILKINSON: Thank you, your Honor.

22 DIRECT EXAMINATION

23 BY MS. WILKINSON:

24 Q. Mr. Tongate, tell the jury what you do for a  
living.

25 A. I'm a special agent with the FBI.

7786

Larry Tongate - Direct

1 Q. How long have you been an agent?

2 A. A little over 24 years.

3 Q. Where are you currently assigned?

4 A. Kansas City, Missouri.

5 Q. Was that your assignment back in April of 1995?

6 A. Yes, it was.

7 Q. Now, after the bombing occurred on April 19, 1995,  
were you

8 assigned to participate in the investigation in Kansas?

9 A. Yes, I was.

10 Q. Did you continue to participate in -- on April 22,  
1995?

11 A. Yes, I did.

12 Q. As part of your investigatory duties, were you

assigned to

22, 13 participate in the search of Mr. Nichols' home on April

14 1995?

15 A. Yes, I did.

warrant 16 Q. Were you searching that home pursuant to the search

17 that other witnesses have previously described?

18 A. That's correct.

entering 19 Q. And did you review that search warrant prior to

20 Mr. Nichols' house?

21 A. Yes, I did.

during the 22 Q. Now, did you personally seize some of the items

23 search?

24 A. Yes, I did.

agents 25 Q. Before you began the search, were you told by other

7787

Larry Tongate - Direct

there 1 that Mr. Nichols had told agents the night before that

2 were no booby traps in his house?

3 A. No.

4 Q. Did you find any booby traps in his house?

5 A. I did not.

night 6 Q. Were you told that Mr. Nichols had told agents the

7 before that he had no explosives in his house?

8 A. No.

9 Q. Did you find explosives in his house?

10 A. Yes.

house? 11 Q. Where did you find explosives in Mr. Nichols'

12 A. In the -- in a box in the basement storage area of  
109

13 South 2nd.

14 Q. And where was the -- was the box open or closed  
when you

15 found it?

16 A. It was on the floor, sealed. There were other  
boxes on top

17 of it.

18 Q. And did you open that box?

19 A. Yes, I did.

20 Q. What did you see when you opened the box?

and 21 A. I saw a number of clear plastic bottles in plastic,

Primadet, 22 laying on top of the bottles were two stacks of

23 60-foot nonelectric blasting caps.

Were 24 Q. You said you also saw plastic bottles in that box.

25 they empty, or were they full?

7788

Larry Tongate – Direct

1 A. They were empty.

2 Q. Okay. And what did the Primadet look like that you  
saw?

3 A. It was orange in color, and it was wrapped with a  
cardboard

4 sleeve around it. There were two sections. One group  
had

5 four, and the other one had one single strand of the  
60-foot

6 Primadet.

7 Q. So there were five coils total in that box?

8 A. Five coils, that's correct.

9 Q. What did you do when you saw the Primadet coils in  
that

10 box?

11 A. I requested a photographer come take a photograph  
of the

12 items as I found them.

13 Q. I take it the photographer did that.

14 A. He did.

15 Q. Can you look at your screen and see Government's  
Exhibit

16 140. Is that the photograph that you caused to be  
taken?

17 A. It is.

18 Q. And does that show the Primadet as you found it in

19 Mr. Nichols' house?

20 A. It does.

21 MS. WILKINSON: Your Honor, we'd offer  
Government's

22 Exhibit 140.

23 MR. TIGAR: No objection, your Honor.

24 THE COURT: 140 received, may be published.

25 BY MS. WILKINSON:

7789

Larry Tongate - Direct

pen up 1 Q. Now, Mr. Tongate, you're familiar with the black  
2 there?

3 A. Yes.

they're 4 Q. Can you show the jury and describe for them what  
5 seeing in this photograph?

the 6 A. Well, as I said earlier, there were two areas of  
7 Primadet that I found. One roll consisted of four  
rolls of the

8 Primadet. The other one just the single strand.

clear 9 These are the plastic bottles that were in

10 plastic that the Primadet was lying on top of.

11 Q. Now, after you saw these in place and the  
photographer took

12 this photo, did you ask him to take another photograph?

13 A. Yes, I did.

14 Q. What did you ask him to photograph?

15 A. I removed the Primadet so that he could take a  
closeup  
16 photograph of the Primadet.

17 Q. All right. Let me show you Government's Exhibit  
141. Is  
18 this that closeup photograph?

19 A. Yes, it is.

20 MS. WILKINSON: Your Honor, we offer 141 into  
21 evidence.

22 MR. TIGAR: No objection, your Honor.

23 THE COURT: Received.

24 BY MS. WILKINSON:

25 Q. Now, tell the jury, on the left side, that is the  
one coil

7790

Larry Tongate - Direct

1 of Primadet that you found?

2 A. Yes, it is.

3 Q. And on the right side, what are we seeing?

4 A. That is the four additional rolls of the Primadet.

5 Q. Now, if I do a closeup, can you tell the jury  
exactly

6 what's noted on this sleeve?

7 A. If I may use my glasses.

8 Q. Sure. Let me try to -- whoops.

9 MS. WILKINSON: Can we have it displayed,  
please, to

10 the jury.

11 THE COURTROOM DEPUTY: There is nothing on the  
screen.

12 141?

13 MS. WILKINSON: Yes.

14 BY MS. WILKINSON:

15 Q. All right. Is that a closer shot of the Primadet?

16 A. Yes, it is.

17 Q. Can you read that, or would it help if I gave you  
the

18 original for the --

19 A. I have the original, if I may use it.

20 THE COURT: Yes.

21 BY MS. WILKINSON:

22 Q. Let's start at the top where it says, "Primadet."  
What

23 does it say under "Primadet"?

24 A. "Nonelectric delay detonators. Not for public  
sale."

25 Q. Go over to the right. What does it say there?

1 A. "60 FT/PI."

2 Q. And the warning label?

3 A. "Use of this product by persons who lack adequate  
training,  
only if  
mining and  
experienced,  
well --  
see

4 experience, and supervision may kill or injure. Use  
5 you are engaged in day-to-day use of explosives in  
6 construction and will limit its use to trained,  
7 supervised persons. See instructions on case insert."

8 Q. Now, over on the side -- and we can't see it too  
9 can you tell the jury starting on the left there -- you  
10 that, what it says there?

11 A. Yes, I can.

12 Q. What does that say?

13 A. "Danger, blasting cap." Underneath it says,  
"Explosive";  
that

14 and then it says, "Keep from children."

15 Q. Okay. Now, in this photograph, you told us already  
16 it's marked 60-foot. Is that right?

17 A. That is correct.

18 Q. Down there at the bottom, can you circle that other  
tag  
the

19 there that has a partial number, or we can see part of  
20 number. Excuse me.

21 What does that say on that tag?

22 A. It says "8."

23 Q. Now, is that Primadet that you found in Mr.  
Nichols' house

24 identical to the Primadet stolen from the Martin  
Marietta rock

25 quarry in Marion, Kansas?

7792

Larry Tongate - Direct

1 A. Yes, it is.

2 Q. During your participation in the search of Mr.  
Nichols'

3 house, did you also search other rooms?

4 A. Yes, I did.

5 Q. Did you search parts of the kitchen?

6 A. Yes, I did.

7 Q. All right. Let me show you -- and did you seize  
certain

8 items from there?

9 A. Yes, I did.

10 Q. Let me show you Government's Exhibit 1838, which is  
not yet

11 in evidence. Do you recognize that?

12 A. Yes, I do.

13 Q. And did you seize that item?

14 A. Yes, I did.

15 Q. How do you recognize it?

16 A. First off, I recall the card itself; and I also  
have the  
17 packaging with me here that I placed the item in, and  
it's my  
18 initials and writing on the packaging.

19 MS. WILKINSON: Your Honor, we'd offer  
Government's

20 Exhibit 1838.

21 MR. TIGAR: May I voir dire, your Honor?

22 THE COURT: You may.

23 VOIR DIRE EXAMINATION

24 BY MR. TIGAR:

25 Q. Agent Tongate, this document that you're looking  
at: You

7793

Larry Tongate - Voir Dire

1 found that in the kitchen?

2 A. Yes.

3 Q. Was it with some other papers?

4 A. Yes.

5 Q. What other papers was it with?

6 A. There were, as I recall, numerous business cards  
and other  
7 miscellaneous papers.

8 Q. So just a whole bunch of business cards of which

this was

9 one?

10 A. That's correct.

11 MR. TIGAR: If your Honor please, we'd like to

have

12 all the business cards found at the same location  
published

13 simultaneously under Rule 106.

14 THE COURT: Do you have such a photograph?

15 MS. WILKINSON: Of all? No, we don't, your  
Honor.

16 THE COURT: About how many others were there?

17 THE WITNESS: I'm going to say at least 20,  
maybe as

18 many as 40 different cards and pieces of paper. That's  
a

19 guess.

20 THE COURT: All right.

21 Well, they don't have such a photograph. I'll  
permit

22 this one to be displayed in view of the answer.

23 MS. WILKINSON: Your Honor, I can clarify one  
other

24 thing with Mr. Tongate.

25 DIRECT EXAMINATION CONTINUED

7794

Larry Tongate - Direct

1 BY MS. WILKINSON:  
2 Q. Did you find other items in the cabinet where you  
found the  
3 business cards?  
4 A. Yes, I did.  
5 Q. Did you find Mr. Nichols' passport?  
6 A. Yes, I did.  
7 Q. Do you recall anything else that you found in that  
area?  
8 A. Receipts. I found a voltage tester and things of  
that  
9 nature and other papers.  
10 Q. Do you remember what type of receipts were found in  
that  
11 area?  
12 A. I believe there was a Wal-Mart receipt. I'm not  
sure of  
13 the date.  
14 MS. WILKINSON: We'd offer 1838 and publish  
it.  
15 THE COURT: Yes. I've received it over  
objection, I  
16 think, to the fact that it -- the photograph is not in  
the  
17 context of the other cards.  
18 That's my understanding of your position, Mr.  
Tigar;  
19 is that right?  
20 MR. TIGAR: Yes, your Honor.  
21 MS. WILKINSON: I'm offering the actual

underlying

22 business card. This is obviously just a display on the  
23 computer.

24 BY MS. WILKINSON:

25 Q. Mr. Tongate, you have the business card up there,  
don't

7795

Larry Tongate – Direct

1 you?

2 A. Yes, I do.

3 Q. Tell the jury what this business card says starting  
from  
4 the left?

5 A. It says, "For the people"; and then on the right  
side it  
6 says, "By the people." And underneath that it says,  
"Missouri  
7 51st Militia." And in the lower left hand corner, it  
has "P.O.

8 Box 182, Grain Valley, MO, 64029." And on the lower  
right it  
9 has, "Phone/Fax, (816) 941-3375."

10 Q. Did you find another business card with this same  
11 description, "Missouri 51st Militia," written on a  
business  
12 card?

13 A. I think it just had "MO" instead of "Missouri"  
written on

14 it; but yes, I did.

not yet 15 Q. Take a look at Government's Exhibit 1839, which is

16 into evidence. Is this that card?

17 A. Yes.

described, 18 Q. Do you see that same marking that you've just

19 M0?

20 A. Yes.

21 Q. Do you recognize this card?

22 A. Yes, I do.

wrapping 23 Q. Did you seize this and put it in the same plastic

24 and sealed the way you've described it?

25 A. Yes, I did.

7796

Larry Tongate - Direct

1 MS. WILKINSON: Your Honor, we'd offer 1839.

your 2 MR. TIGAR: No objection -- Same objection,

3 Honor, but I assume it's overruled.

with the 4 THE COURT: Was this card in the same area

5 others?

6 THE WITNESS: Yes, it was, your Honor.

7 THE COURT: All right. 1839 received.

8 MS. WILKINSON: May we publish?

9 THE COURT: Yes.

10 BY MS. WILKINSON:

11 Q. Mr. Tongate, start at the top there and tell the  
jury what  
12 they're seeing.

13 A. It's a business card. At the top it says, "M0 51st  
14 Militia." And then underneath, it has the name "Thomas  
A.

15 Samples, 3005 N.W. Florence, Riverside, MO, 64151."  
16 In the lower left-hand corner, it has,  
"Independent

17 Computer Consultant," and it gives his address on the  
web, I  
18 believe.

19 On the right-hand side, it has "Voice" and a  
telephone  
20 number of "816 741-7480" and "Data 816 741-7804."

21 Q. Now, at the bottom we see a Q number. Is it your  
22 understanding that's the Q number Mr. Mills described  
for us  
23 that the laboratory uses for forensic analysis?

24 A. That's correct.

25 MS. WILKINSON: We have no other questions,  
your

7797

Larry Tongate - Direct

1 Honor.

2 THE COURT: All right. Mr. Tigar, do you have  
3 questions?

4 MR. TIGAR: Yes.

5 CROSS-EXAMINATION

6 BY MR. TIGAR:

7 Q. Agent Tongate, you went -- you retrieved the items  
that  
8 you've testified about now on what date, sir?

9 A. On -- it was -- the search began on the 22d and  
concluded  
10 the early morning of the 23d of April.

11 Q. And you've been sitting here as the case agent;  
right?

12 A. Yes.

13 Q. So we don't have to go over this again, this is the  
same  
14 one that Agent Jasnowski testified about; is that  
correct?

15 A. That is correct.

16 Q. Were you present at the same briefing that Agent  
Jasnowski  
17 testified about?

18 A. Yes, I was.

19 Q. At that briefing were you told anything about what  
20 Mr. Nichols had told the agents about what was in his  
house?

21 A. Not that I recall, no.

22 Q. So as you started the search, you don't know what  
23 conversation he had with those agents about any items  
in his  
24 house; right?  
25 A. I did not.

7798

Larry Tongate – Cross

1 Q. You did not; and you didn't know whether or not he  
told  
2 them, "Don't mistake one thing for another," and so on?  
3 A. I did not.

4 Q. Okay. And also, just to make sure, you did not  
have access  
5 to a diagram of the house drawn by Mr. Nichols showing  
the  
6 location of various things?

7 A. I did not.

8 Q. Okay. You have seen that diagram since then;  
right?

9 A. I have.

10 Q. Okay. Now, as you -- you described going into the  
basement  
11 and you saw that Primadet; right?

12 A. That's correct.

13 Q. Okay. Now, you know that Primadet is a product  
made by a  
14 commercial manufacturer; correct?

15 A. Yes.

16 Q. And prior to the 22d, had you ever had occasion to  
use

17 Primadet?

18 A. I had not.

19 Q. All right. Had you ever seen anybody use it?

20 A. No.

21 Q. Did you know what sorts of things it was used for?

22 A. No.

23 Q. And you've heard Mr. Rydlund testify about the  
sorts of

24 things Primadet could be used for?

25 A. I did.

7799

Larry Tongate - Cross

1 Q. For instance, on a farm for ditching?

2 A. I heard the ditching, yes.

3 Q. But you don't have any personal knowledge as to  
whether --

4 as to how that's used or under what circumstances;  
right?

5 A. I do not.

6 Q. Now, you also talked about some plastic bottles;  
right?

7 A. That's correct.

8 Q. Did you also find some labels for the plastic  
bottles?

9 A. I don't know if I personally found labels. I think  
there

10 were labels found.

11 Q. Okay. But as you sit there today, do you remember  
what the

12 contents of the labels were?

13 A. The contents of the labels?

14 Q. What it said on the labels.

15 A. Are you referring -- may I ask what he's referring  
to?

16 Q. Did you see some labels that obviously would fit  
those

17 plastic bottles?

18 A. Yes.

19 Q. And do you remember the exact text of what those  
labels

20 were?

21 A. If you're referring to plant food, I do recall such  
labels

22 that had "plant food" and also the word "explosives" on  
them.

23 Q. Okay. And those were labels that described, as you

24 understood -- described small quantities of ammonium  
nitrate

25 that could be put into the plastic bottles; is that  
right?

7800

Larry Tongate - Cross

1 A. That's correct.

2 Q. And the label that said "explosive" was just word  
for word

3 the same label you would find if you went to the feed  
store and

4 bought a sack of ammonium nitrate; right?

5 A. I haven't compared it, but I think it's probably  
similar.

6 Q. Yeah. Okay. You don't remember any differences?

7 A. No.

8 Q. Now, you told us about two business cards that you  
found;

9 right? Have you ever been to a gun show?

10 A. Maybe many years ago. Not recently, no.

11 Q. Now, have you investigated gun shows?

12 A. No.

13 Q. Do you know who attends gun shows?

14 A. Many people.

15 Q. Right. And do some of the people who attend gun  
shows --

16 are they members of militias?

17 A. I think so, yes.

18 Q. The card you showed us is something called the  
Missouri

19 Militia?

20 A. That's correct.

21 Q. You're the case agent?

22 A. Yes.

Missouri 23 Q. Are we going to hear any evidence about the  
24 Militia in this case other than this business card?  
25 MS. WILKINSON: Objection, your Honor.

7801

Larry Tongate – Cross

1 THE COURT: Overruled.

2 THE WITNESS: Not that I'm aware of.

3 BY MR. TIGAR:

4 Q. So it's just a business card; right?

5 A. That's correct.

in 6 Q. Why did you pick that out of the other 40 that were  
7 there, then?

8 A. I took the other 40.

that 9 Q. I know you the took the other 40. Well, who is it  
10 selected that one and only one militia business card to  
be 11 shown today?

12 MS. WILKINSON: Objection.

13 THE COURT: Sustained.

14 MR. TIGAR: No further questions. Thank you.

15 THE COURT: Any other questions?

16 MS. WILKINSON: Yes, your Honor.

17

REDIRECT EXAMINATION

18 BY MS. WILKINSON:

19 Q. You were asked, Mr. Tongate, about the diagram that  
20 Mr. Nichols did for the agents, and you've seen that --

21 A. I have.

22 Q. -- right? Did Mr. Nichols note anywhere on there  
the  
23 location of the Primadet?

24 A. He did not.

25 Q. You were also asked about the labels that could fit  
the

7802

Larry Tongate - Redirect

1 plant food. You found some of those -- right -- or  
someone did

2 on the search?

3 A. That's correct.

4 Q. Do you remember anything else that was on the  
labels or on

5 the instruction documents that went along with those  
labels?

6 MR. TIGAR: Your Honor, I'm going to object to  
that

7 unless the label is in evidence.

8 THE COURT: Sustained.

9 BY MS. WILKINSON:

10 Q. You were also asked about gun shows and who attends

gun

11 shows. Is that right?

12 A. That's correct.

13 Q. Do you know anyone who sells plant food at gun  
shows?

14 MR. TIGAR: Objection, your Honor, unless  
personal

15 knowledge is shown.

16 THE COURT: Sustained.

17 MS. WILKINSON: No further questions, your  
Honor.

18 THE COURT: You may step down.

19 Next, please.

20 MR. MACKEY: Your Honor, we would call Brian  
Espe.

21 THE COURT: Okay.

22 THE COURTROOM DEPUTY: Raise your right hand,  
please.

23 (Brian Espe affirmed.)

24 THE COURTROOM DEPUTY: Would you have a seat,  
please.

25 Would you state your full name for the record  
and

7803

Larry Tongate – Redirect

1 spell your last name.

2 THE WITNESS: Brian Espe, E-S-P-E.

3 THE COURTROOM DEPUTY: Thank you.

4 THE COURT: Mr. Orenstein.

5 MR. ORENSTEIN: Thank you, your Honor.

6 DIRECT EXAMINATION

7 BY MR. ORENSTEIN:

8 Q. Good morning, Mr. Espe.

9 A. Good morning.

10 Q. Would you tell the jury where you live.

11 A. Oklahoma City.

12 Q. And how old are you, sir?

13 A. 60 years old.

14 Q. Are you married?

15 A. Yes.

16 Q. Do you have any children?

17 A. Five.

18 Q. And how long have you been married, and how old are  
your  
19 children?

20 A. Been married almost 43 years, and children range in  
age  
21 from 42 to 35.

22 Q. Where were you born and raised, sir?

23 A. I was born outside of Chicago, Illinois, and raised  
there.

24 Q. And where did you go to school?

25 A. Initially, I went to -- you mean further education?

7804

Brian Espe - Direct

1 Q. Yes. You graduated high school in the Chicago  
area?

2 A. Right. Right.

3 Q. After that, what did you do?

4 A. I spent two years in college in North Dakota and  
four years

5 in veterinary school in Oklahoma and graduated in '61  
with a

6 veterinary degree.

7 Q. And after you completed your degree, what did you  
do for a

8 living?

9 A. I went to work for U.S. Department of Agriculture.

10 Q. And what did you do there, and how long did you  
stay?

11 A. I started as a field veterinarian in Connecticut;  
and then

12 after two years of that, I was assigned to University  
of

13 Wisconsin, where I received a master's degree in  
epidemiology.

14 And then in '67, I was transferred to Oklahoma.

15 Q. And still with the Department of Agriculture?

16 A. Yes.

17 Q. How long did you stay with the Department?

18 A. I stayed with the Department at that time from '67  
through

19 1982 and left the Department for about six years and  
came back

20 with the Department in 1989.

21 Q. What were you doing in the meantime?

22 A. Worked at a racetrack, did some private consulting,  
worked

23 for the Oklahoma State University.

24 Q. All in the field of veterinary medicine?

25 A. Yes.

7805

Brian Espe - Direct

1 Q. You said that you came back to the Department --

2 A. Yes.

3 Q. -- at some point. When was that?

4 A. In October of 1989.

5 Q. And have you been employed by the Department of  
Agriculture

6 since then?

7 A. Yes.

8 Q. Where were you assigned once you returned in 1989?

9 A. The Alfred P. Murrah Building.

10 Q. Now, could you describe for the ladies and  
gentlemen of the

11 jury the services that the Department of Agriculture  
provided

12 in Oklahoma City at the Murrah Building?

13 A. All right. Generally, we work cooperatively with  
the state  
14 Department of Agriculture in eradicating animal  
diseases. A  
15 number of those diseases are those that affect both  
animals and  
16 humans. Also, we're involved in the export of animals  
that in  
17 order for animals to be exported from the U.S., they  
have --  
18 all test results and everything need to be certified by  
a USDA  
19 veterinarian; and we did that for the State of  
Oklahoma.

20 Q. Now, when you say you're involved in the export  
process,  
21 the USDA is not itself doing the exporting; correct?

22 A. No, these are private individuals doing the  
exporting and  
23 such.

24 Q. Local ranchers and such?

25 A. Local ranchers. Even pet owners are required to  
get

7806

Brian Espe - Direct

1 certification on their animals.

2 Q. Now, you said that you worked -- you, yourself,  
worked in  
3 the Murrah Building?

4 A. Yes.

5 Q. Let me ask you how many employees did the  
Department of

6 Agriculture have in the Murrah Building in April of  
1995,  
7 people who were actually stationed there?

8 A. In looking back, there were 13 that actually --  
their duty  
9 station was considered the Alfred P. Murrah Federal  
Building.

10 Q. Were there others who were employed by the  
Department of

11 Agriculture in the state of Oklahoma who occasionally  
also went  
12 to the Murrah Building?

13 A. Right. We had supplied desk space for some  
occasionally  
14 whose main duties were in the field but a desk space if  
they  
15 needed to be in the office for a short period of time  
that they  
16 had access to.

17 Q. So 13 there regularly, and then others would come  
in on  
18 occasion?

19 A. Correct.

20 Q. What was your position in April of 1995?

21 A. I was the area veterinarian in charge for the USDA  
22 veterinary services.

23 Q. Did you supervise others in that position?

24 A. Yes.

25 Q. Now, what floor within the Murrah Building did the

7807

Brian Espe - Direct

1 Department of Agriculture occupy?

2 A. The fifth floor.

3 MR. ORENSTEIN: If I might have Government's  
Exhibit

4 952 displayed, the fifth-floor diagram.

5 BY MR. ORENSTEIN:

6 Q. Dr. Espe, do you see on the screen before you and  
before

7 the jury a diagram showing the Department of  
Agriculture space

8 in the Murrah Building?

9 A. Yes.

10 Q. Using the light pen which you have with you, would  
you

11 demonstrate to the jury the space that you occupied and  
who was

12 in each of the areas?

13 A. All right. Can't seem to get the pen to where I --

14 Q. Perhaps -- why don't we do it this way. I'll use  
the ELM0,

15 and I'll indicate areas and ask you who was working  
where.

16 A. All right.

17 Q. Can you see that well enough?  
18 A. Yes.  
19 Q. Let me start in this area marked "APHIS storage  
room." Is  
20 that part of the Ag --  
21 A. Right. We were the Animal and Plant Health  
Inspection  
22 Service, and that's the acronym for our agency. That  
was  
23 strictly storage for supplies, forms. Some files were  
stored  
24 in that room.  
25 Q. That's this room that I'm indicating with my  
finger.

7808

Brian Espe - Direct

1 Now, if you go into the Agriculture  
Department's  
2 offices on the fifth floor, starting in this office  
here, who  
3 worked there?  
4 A. That was my office.  
5 Q. And the next one?  
6 A. Nancy Roberts, who was area epidemiologist.  
7 Q. And in the next office?  
8 A. That was James Boles' office.  
9 Q. And in this corner area?

for  
10 A. That was Jack Goldman, who works for USDA but works  
11 Plant Protection, which is another branch of APHIS.  
12 Q. So part of the Department of Agriculture?  
13 A. Part of the Department of Agriculture, yes.  
14 Q. And proceeding down?  
15 A. That was a conference room.  
16 Q. Down below that?  
17 A. That was our smoking room.  
18 Q. Now, over here in this corner there is another room  
19 that's --  
20 A. Right. That was the office that we had supplied to  
21 regulatory enforcement, which was another APHIS USDA  
agency;  
22 but that office was just used occasionally because they  
were  
23 located at field locations.  
24 Q. So there wasn't someone permanently assigned to  
that  
25 office?

7809

Brian Espe - Direct

1 A. No.  
2 Q. Now, in this area that doesn't have partition --  
well,  
3 walls indicated, were there people working in that

area?

4 A. Yes. Yes.

5 Q. Who worked there?

6 A. My secretary worked there. You want me to try the  
pen

7 again and see --

8 Q. No. You don't have to worry about where within the  
area.

9 Just tell us who worked --

10 A. My secretary worked there, my export clerk worked  
there, my

11 administrative officer worked there, my budget analyst  
also

12 worked in that area, my purchasing agent worked in that  
area,

13 and one clerk worked in that area; and then we had  
another

14 office that we had a veterinary trainee at that time  
who we

15 supplied her office space in that same general area.

16 Q. And when you say "office space," did you have  
partitions

17 to --

18 A. We had cubicle-type arrangement.

19 Q. Now, Dr. Espe, let me direct your attention to the  
morning

20 of April 19, 1995. Would you tell the jury when you  
arrived at

21 work that day.

22 A. Approximately 7:30 in the morning.

there? 23 Q. When you arrived at your office, was anyone already

24 A. Yes.

25 Q. Who did you see?

7810

Brian Espe - Direct

1 A. I saw my secretary and my export clerk.

the 2 Q. Let me interrupt you, if I may. Would you give us  
3 names of people that you saw?

the first 4 A. I saw Ada Maloney, my secretary. She sat -- was  
5 person that you encountered when you came indoors.

6 I saw James Boles, administrative officer.

7 I saw Adele Higginbottom.

8 I saw Rheta Long and Olen Bloomer.

morning? 9 Q. Those folks were all there when you arrived in the

10 A. They were there when I arrived.

at the 11 Q. Now, later in the morning but before the explosion  
office? 12 building, did you see anyone else who arrived at your

13 A. Yes.

14 Q. Who else did you see?

15 A. Dick Cummins came to my office. We had a matter to  
16 discuss, so he came to my office about 8:00.

17                   And Dr. Clark came to the office about 8:30  
that  
18 morning. She was picking up some material to go to a  
meeting  
19 later that afternoon.  
20 Q. You mentioned someone named Mr. Cummins?  
21 A. Yes.  
22 Q. Was he stationed at the Murrah Building?  
23 A. No, he was -- he was occupying that one office I  
mentioned  
24 that we supplied as a convenience if they needed to be  
in our  
25 office but did not routinely spend time in that office.

7811

Brian Espe - Direct

1 Q. Now, did you know someone named Carole Khalil who  
worked  
2 for the Department of Agriculture?  
3 A. Yes. I'm sorry. Carole showed up late. We had  
people on  
4 a staggered work schedule, so some people showed up at  
7, some  
5 at 7:30. Carole was one that showed up at 8.  
6 Q. So you arrived before her, but you saw her that  
morning?  
7 A. Right.  
8 Q. Now, what did you do once you got to work?

9 A. After I got a cup of coffee, I went to -- went to  
my office  
10 and made a couple of phone calls to some of my field  
people and  
11 wrote a couple of memos to a couple of field people.

12 Then I visited -- by this time, Richard  
Cummins was  
13 there, and we went back and sat in the smoking room and  
had our  
14 visit about the information that he was obtaining for  
me.

15 Then I went back to my office for a while, did  
a  
16 little bit more paperwork. And by this time, it was  
17 approaching quarter of 9, and I had a meeting scheduled  
at  
18 10:00 that morning over at the state Department of  
Agriculture,  
19 so I had about an hour and 15 minutes before I needed  
to be  
20 over there.

21 And I was working on a project. I was  
scheduled to  
22 give a lecture to the graduating class at Oklahoma  
State  
23 University Veterinary School on Monday; and I was  
preparing a  
24 slide, a set of slides to use in that presentation. So  
I went  
25 to the conference room there -- it's working now -- to  
the

Brian Espe - Direct

1 conference room, because that was the only room that  
you could  
2 turn off the lights and view slides.

3 Q. And did anyone go in there with you into that  
conference  
4 room?

5 A. No.

6 Q. Dr. Espe, after you entered that conference room on  
the  
7 morning of April 19, 1995, did you ever see Jim Boles  
alive  
8 again?

9 A. No, I did not.

10 Q. Did you ever see Olen Bloomer alive again?

11 A. No, I did not.

12 Q. Did you ever see Adele Higginbottom alive again?

13 A. No, I did not.

14 Q. Did you ever see Rheta Long alive again?

15 A. No, I did not.

16 Q. Did you ever see Dick Cummins alive again?

17 A. No, I did not.

18 Q. Did you ever see Carole Khalil alive again?

19 A. No, I did not.

20 Q. And did you ever see Dr. Clark alive again?

21 A. No.

22 Q. Tell us what happened after you had entered the  
conference

23 room.

24 A. Well, I was there with the lights off putting  
slides into a

25 carousel, when I felt the building start to shake. And  
then I

7813

Brian Espe - Direct

1 remember ceiling tiles and light fixtures falling. And  
it --

2 dust and of course the lights were out, so I didn't  
notice the

3 darkness; but then it got very still, and then I  
noticed that

4 the room was light. There was light in the room.

5 Q. And what could you see through that light?

6 A. I saw that there were no walls on two sides of that  
7 conference room and that I could see daylight, I could  
see

8 across the street to the north.

9 Q. You could see across 5th Street?

10 A. Yeah. I could look across 5th Street toward the  
Journal

11 Record Building.

12 Q. Just to orient us, you were in this office; is that  
13 correct?

14 A. Yes.

15 Q. And you could see through what had been --

16 A. What had been a wall here, and I could also see to  
the west

17 where there had been a wall.

18 Q. Now, did you see any of your colleagues at that  
point?

19 A. I did. As I got out from under the rubble, I could  
see the

20 two plant people were in that area that I've marked.  
Here

21 again, this wall was gone, so I could see into that  
office.

22 Normally, there was no way to see into that office.  
And I

23 could see them up and moving around.

24 Q. And who was that?

25 A. That was Jack Goldman and Cindy King, his  
secretary.

7814

Brian Espe - Direct

1 Q. What did you and Mr. Goldman and Ms. King do at  
that point?

2 A. Well, I -- I climbed over the debris and met with  
them in

3 what was formerly their office; and we -- we checked  
really to

4 see if -- if we were all right, if any of us were  
injured. And

5 of course, we discussed what had happened.

6 Q. Were any of you injured?

7 A. Minor -- minor cuts and bruises.

8 Q. Were you able to leave the fifth-floor offices at  
that  
9 time?

10 A. No.

11 Q. Why not?

12 A. There was no -- there was no floor between where we  
were  
13 and the nearest stairwell. There was no way to get to  
that  
14 stairwell.

15 Q. So what did you do?

16 A. We could look out the south windows.

17 Q. You're referring to these windows on this side?

18 A. Those windows there. And we tried to signal to the  
ground,  
19 because by this time we could see emergency personnel  
coming up

20 from the south side of the building, and so we tried to  
yell  
21 and signal that there were three of us there but we  
were all

22 right; that we weren't injured. And we finally did get  
their  
23 attention. And they signaled that they understood, so  
then we

24 waited to be rescued from the building.

25 Q. About how long did you wait until you were rescued?

7815

Brian Espe - Direct

1 A. It was over an hour.

2 Q. Where were you watching for the -- for the rescue  
to come

3 from?

4 A. Primarily to the south, because that's where we  
could see

5 the -- most of the activity was at the south coming up  
on the

6 plaza, the south plaza.

7 Q. You said you waited about an hour. What happened  
after an

8 hour?

9 A. After about an hour, we were startled when a  
fireman came

10 up behind us. We were looking out the south window and  
came up

11 behind us from the north and said, "I'm here to take  
you down."

12 Q. How did the fireman arrive?

13 A. Came up a ladder.

14 Q. What did you do at that point?

15 A. We -- the fireman said, "We'll take the young lady  
first."

16 Q. That's Ms. King?

17 A. That was Cindy King.

18 I was the one that had a terrible fear of  
heights, so  
19 I said, "I'm going to have problems with this, so why  
don't you  
20 take Jack Goldman next." And they did. Jack went  
down. The  
21 fireman --  
22 Q. Did there come a point where you had to face that  
fear?  
23 A. Right.  
24 Q. And go down?  
25 A. Yes.

7816

Brian Espe - Direct

1 Q. How did you do that?  
2 A. I did it rather unconventionally. I came down  
facing  
3 forward away from the ladder, rather than the  
traditional way  
4 of coming down a ladder.  
5 Q. Did the fireman who was there help you out at all?  
6 A. He talked me down every step of the way.  
7 Q. Did you later find out that your descent down that  
ladder  
8 had been captured on videotape?  
9 A. Yes.  
10 Q. And before coming to court, did you take a look at

11 Government's Exhibit 1013, a videotape?

12 A. Yes.

13 Q. Does it show you coming down the ladder the morning  
of

14 April 19?

15 A. Yes, it does.

16 MR. ORENSTEIN: Your Honor, the Government  
offers

17 Government's Exhibit 1013.

18 MR. TIGAR: No objection, your Honor.

19 THE COURT: 1013 is received.

20 MR. ORENSTEIN: And if I may play it, about a  
minute,

21 maybe less.

22 THE COURT: Yes.

23 MR. ORENSTEIN: This will be on the laser  
disk.

24 (Exhibit 1013 played.)

25 BY MR. ORENSTEIN:

7817

Brian Espe - Direct

1 Q. Doctor, would you click your pen?

2 A. Pardon?

3 Q. Thank you.

4 Dr. Espe, was what we just saw a picture of  
you slowly

5 coming down the ladder with the fireman's help?

6 A. Yes.

7 Q. How many employees of the Department of Agriculture  
were

8 killed in the bombing that day?

9 A. Seven.

10 Q. Now, prior to coming to court, did you examine a  
chart of

11 the floor plan similar to the one that was on the  
screen and

12 affix nameplates of the people who died in the bombing  
showing

13 where they worked?

14 A. Yes.

15 MR. ORENSTEIN: And, your Honor, for the  
record, we're

16 not going to display it now, but we offer Government's  
Exhibit

17 952E bearing those nameplates.

18 MR. TIGAR: Yes, your Honor. No objection.

19 THE COURT: All right. 952E is received.

20 BY MR. ORENSTEIN:

21 Q. Also before coming to court today, did you take a  
look at a

22 chart marked Government's Exhibit 1030 containing  
photographs

23 of your seven colleagues who were killed in the  
bombing?

24 A. Yes, I did.

25 Q. Do those photographs fairly and accurately show the

way

7818

Brian Espe - Direct

1 your colleagues looked before they were killed in the  
bombing?

2 A. Yes.

3 MR. ORENSTEIN: Government offers 1030.

4 MR. TIGAR: We've made our position known  
before.

5 THE COURT: Yes. 1030 is received.

6 MR. ORENSTEIN: May I ask Agent Tongate to  
assist in

7 putting up the chart?

8 THE COURT: Yes.

9 BY MR. ORENSTEIN:

10 Q. Dr. Espe, I'd ask you to go through this chart and  
tell the

11 jury about each of your colleagues that are depicted  
there, how

12 long they worked for the Agriculture Department and  
what it is

13 that they did for the Department.

14 A. Okay. Olen Bloomer was the budget -- our budget  
analyst;

15 and he had worked for at least 12 years with the  
Department --

16 with our department. He had military time before that.

17 James Boles was my administrative officer, and

he was

18 approaching his 30-year career with the government.

19 Q. What did he do for the Department of Agriculture?

the

20 A. He was an administrative officer, took care of all

21 administrative details, personnel.

me, but

22 Dick Cummins was the senior investigator for  
23 regulatory enforcement. He did not work directly for

of

24 Dick Cummins was a 30-year employee with the Department

25 Agriculture.

7819

Brian Espe - Direct

year

1 Adele Higginbottom was a 17-year-old -- 17-

and

2 employee with USDA. She was in charge of purchasing

3 supplies.

clerk

4 Carole Khalil is my export document examining

my

5 who examined those -- all those export papers prior to

6 signing them and certifying to their accuracy.

7 Q. How long had she worked for the Department?

8 A. She had worked 29 years for the Department.

and clerk

9 Rheta Long was a clerk, did secretarial work

10 work; and she worked at least 10 years. This was one  
that was  
11 there when I came there in '89. I don't really know  
exactly --  
12 she had military time prior to coming to work for the  
USDA.

13 Peggy Clark was a trainee who had only been  
with the  
14 agency for about a year and a half.

15 Q. And what field was she training in?

16 A. She was training to become a field veterinarian for  
USDA.

17 Q. And that was part of her official duties there?

18 A. Pardon?

19 Q. That training was part of her official work for the  
USDA?

20 A. Yes, yes.

21 Q. You told us before that stationed in the Murrah  
Building

22 there were 13 Department of Agriculture employees. Is  
that

23 correct?

24 A. That's correct.

25 Q. Have you calculated the approximate percentage of  
your

7820

Brian Espe - Direct

1 staff that you lost on April 19?

it was -- 2 A. No, I really haven't figured the percent. I know  
staff. 3 except for my secretary, it was all our administrative  
years of 4 Q. And have you ever tried to calculate the number of  
the 5 Department of Agriculture experience that was lost in  
6 bombing on April 19?  
lost that 7 A. It was over a hundred years of experience that we  
8 day.  
of the 9 Q. After the bombing, did you try and pursue the work  
10 Department of Agriculture in Oklahoma City?  
11 A. Yes.  
12 Q. Did you have any difficulty in pursuing that work?  
13 A. Yes.  
14 Q. What difficulties did you encounter?  
Of 15 A. Our biggest difficulty came with our export work.  
16 course, we had lost all our records and the  
requirements of the  
the 17 various countries. And the other thing was because of  
18 nature of our export work, the exporter was required to  
come to 19 the federal building to have those papers certified and  
20 stamped. People didn't know where we were and didn't  
know how

21 to find us, so this created quite a problem.

22 Q. When you're talking about the people, what people  
are you

23 referring to?

24 A. I'm talking about anywhere from a commercial  
exporter of

25 horses, to the European Union, to somebody wanting to  
take

7821

Brian Espe - Direct

1 their cat, their pet cat to Japan if they were being

2 transferred to Japan.

3 Q. Dr. Espe, how long was it until your area, your  
department

4 within the Department of Agriculture was back up to its  
full

5 strength?

6 A. Well, really, it went in stages; but it really  
wasn't until

7 this last summer that we finally filled all the  
positions with

8 trained people to conduct our business.

9 Q. And that's the summer of 1997?

10 A. Yes.

11 MR. ORENSTEIN: Thank you, sir. I have  
nothing

12 further on direct.

13 THE COURT: Any cross?

14 MR. TIGAR: Yes, your Honor.

15 CROSS-EXAMINATION

16 BY MR. TIGAR:

17 Q. Dr. Espe, good afternoon, sir.

18 A. Good afternoon.

19 Q. My name is Michael Tigar. I'm one of the lawyers  
appointed

20 to help out Terry Nichols; and I have a very, very few  
21 questions, sir.

22 A. All right. Thank you.

23 Q. The mission of the USDA is to help the American  
farmer; is

24 that right?

25 A. That's correct.

7822

Brian Espe - Cross

1 Q. And when you started out your career, you were --  
you said

2 you were a field veterinarian.

3 A. That's right.

4 Q. And over the years, have you worked in county  
agents'

5 offices?

6 A. Not -- we never were assigned -- I've worked with  
county

7 agents, but we never have been assigned to county agent

8 offices.

9 Q. I understand. So you would work alongside the  
county  
county;  
10 agents dealing with whatever problems there were in the  
11 correct?

12 A. That's correct.

13 Q. And all the farmers you met: They knew that the  
USDA was a  
14 source of all sorts of information about how to farm  
better,  
15 produce better, market better, and export better?

16 A. Correct.

17 Q. And all of these functions are the ones that you've  
been  
18 talking about today; is that right?

19 A. That's correct.

20 Q. And in that process, the USDA would -- would help  
farmers  
21 determine the kind of fertilizer that they ought to put  
on  
22 their land; right?

23 A. That's correct.

24 Q. And the USDA would advise about such things as  
tilling,  
25 ditching, trenching, making ponds, and so on; right?

Brian Espe – Cross

1 A. That's right.

2 Q. Because even in your area as a veterinarian, you  
know that

3 the getting -- you know, handling the flow of water on  
the

4 pasture affects the quality of the grass and therefore  
the

5 health of the animals. Right?

6 A. That's right.

7 Q. Now, on that day, we saw that very -- that picture  
of you

8 coming down the ladder there. Your focus was on  
getting down

9 that ladder safely; right?

10 A. That's correct.

11 Q. Okay. It was not in looking around to see what  
else could

12 be seen. Would that be a fair statement?

13 A. That would be a fair statement.

14 Q. Okay. And, sir, when you got down off the ladder,  
you left

15 the scene; right?

16 A. Right.

17 Q. Okay. So you didn't stay around to witness the  
rescue

18 effort or anything like that?

19 A. No, I did not.

20 Q. All right. And when was the next time that you  
came back

we saw 21 to the Murrah Building area after that photograph that  
22 there?  
23 A. I believe it was the following Sunday, because I  
received a  
24 call from the FBI that they had found some material --  
some  
25 USDA badges that they had traced to our agency, and so  
--

7824

Brian Espe - Cross

1 Q. I see.  
2 A. -- that was --  
3 Q. But that was -- in other words, you did not ever  
have a  
4 function of going and working along -- working in that  
area  
5 around the building to recover evidence and so on like  
that?  
6 A. No, I did not.  
7 MR. TIGAR: All right. Thank you very much,  
sir.  
8 I have no further questions, your Honor.  
9 MR. ORENSTEIN: Nothing further, Judge.  
10 THE COURT: Excused? All right.  
11 You may step down. You're excused.  
12 We'll take our noon recess at this point,  
since we're

13 between witnesses.  
14 And, members of the jury, we'll, as usual,  
take our  
15 usual-length recess, which will be till 1:35. And of  
course,  
16 as usual, please do not during this time discuss any  
aspect of  
17 this case or anything about it among yourselves or with  
any  
18 other persons; and continue to recognize your  
responsibility to  
19 decide just what's presented to you in the evidence in  
this  
20 case.

21 You're excused now till 1:35.

22 (Jury out at 12:05 p.m.)

23 THE COURT: Okay. Recess.

24 (Recess at 12:06 p.m.)

25 \* \* \* \* \*

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		PLAINTIFF'S EXHIBITS			
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Withdrawn	Exhibit	Offered	Received	Refused	Reserved
	E1842-E1843	7705	7705		

15 \* \* \* \* \*

16 REPORTERS' CERTIFICATE

17 We certify that the foregoing is a correct  
transcript from

18 the record of proceedings in the above-entitled matter.  
Dated

19 at Denver, Colorado, this 10th day of November, 1997.

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22

Paul Zuckerman

23

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24

Kara Spitler

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