

THE COURT: Members of the jury, good morning.

JURY: Good morning.

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

And you have new seats this week, so each of you get a little different view of the courtroom in this manner, and we'll change the seats again as we go along each week.

You'll recall that when we recessed on Friday, early Friday afternoon, we were hearing testimony from Mr. James Cadigan, the FBI agent, on cross-examination by Mr. Tigar, and we'll pick up where we left off.

Mr. Cadigan, if you'll resume the stand under the oath earlier taken.

THE WITNESS: Thank you, sir.

(James Cadigan was recalled to the stand.)

THE COURT: Mr. Tigar, you may continue.

CROSS-EXAMINATION CONTINUED

BY MR. TIGAR:

Q. Mr. Cadigan, do you know when the crime occurred where the lock was recovered?

A. No, sir.

Q. Do you know if the lock was in such a condition at the time

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it was found that it could be removed without using a key, or if it was necessary to put a key in it to take it from the hasp?

A. I don't know.

Q. Do you know if somebody dropped the lock between the time it was recovered and the time you came to court?

A. By the time I came to court, yes.

Q. Who dropped it?

A. Well, Mr. Hartzler dropped it at one time when we were looking at it.

Q. All right. And do you know if the lock was dropped by anyone between the time it was recovered at the crime scene and the time you examined it?

A. No, I do not.

Q. Do you teach crime-scene procedures at the FBI -- whatever it is, in Quantico?

A. I teach schools on trajectory, bullet trajectory, and crime-scene analysis, yes.

Q. And would you agree with me, sir, that before tool mark evidence is admitted to the FBI Laboratory, it should be packed to preserve the evidence and prevent contamination?

A. It should be sealed, yes, sir.

Q. No, I didn't ask you that, sir. Do you agree with me that the evidence should be packed to preserve the evidence and prevent contamination?

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A. Yes.

Q. And in fact, sir, that caution is contained in a book entitled Handbook of Forensic Science, is it not?

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

Q. That's -- and I'm going to hold it up, sir, this handbook. That's your book; right?

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

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

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

Q. Which portion did you edit?

A. That on tool marks and casting.

Q. Tool mark, what, sir?

A. Tool marks and casting of tool marks.

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

A. I'd have to look at it.

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

THE WITNESS: Yes, sir.

BY MR. TIGAR:

Q. Asking you, sir, to look at the orange tabs there and at one of them -- there we are -- page 64. Would you look at that and tell the jury if that refreshes your recollection as to whether or not you identified the portion "Submitting Tool Mark Evidence."

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

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sure I looked at it before it was published.

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

A. Correct.

Q. Now, when you teach crime-scene procedures, you teach people to gather the evidence carefully; is that right?

A. Yes, sir.

Q. You teach them to label the evidence carefully; is that right?

A. Yes, sir.

Q. You teach them to package the evidence carefully; is that right?

A. Yes, sir.

Q. You teach them to write down the description of the evidence on some kind of property report at or about the time it was recovered; is that right?

A. I'm not sure that I would teach that, but there should be some recording of the evidence as it's recovered as to where it's recovered and marks as to who recovered it, yes, sir.

Q. And that -- those -- that recording should be done as close to the time as the evidence is recovered as possible; correct?

A. As is possible, yes, sir.

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

A. Yes, sir.

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Q. And in addition you would expect the evidence to be kept under circumstances that prevents people from fooling with it; correct?

A. Absolutely.

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

A. That's correct.

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

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

Q. I understand. Do you know when it came into FBI custody?

A. No, sir.

Q. You just know it had to come into custody sometime before you looked at it; right?

A. That's correct.

Q. And you looked at it, again, when?

A. In July, and then returned it in August, the first time.

Q. By the way, you conducted a number of examinations of many tools -- is that right -- in connection with this case?

A. Yes, sir.

Q. Do you have an estimate of how many tools you examined from

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Mr. Nichols' home?

A. No, I don't.

Q. Now, in your direct examination, sir, you talked about the test impression that was made; correct?

A. Yes, sir.

Q. In lead.

A. Yes, sir.

Q. Did you make the test impression, yourself?

A. Yes, I did.

Q. You used a drill press?

A. Yes, sir.

Q. Now, a drill press is an item that -- a drill that's mounted on a stand and permits you to rotate a lever and bring the drill bit down into contact with the material being drilled; is that right?

A. Yes, sir.

Q. When you did the test impression, did you leave the drill spinning, or did you stop the drill in the test material and then pull the drill bit up off?

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

Q. Now, were you careful to hold the test impression material in the same location and not let it move around while you were doing the drilling?

A. Yes, sir.

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

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evidence as Government's Exhibit 1843.

Turn on the light. There we go.

Now, do you notice the red mark on the left side there? See where my finger's pointing?

A. Yes, sir.

Q. What is that?

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

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

A. Yes, sir.

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

A. Yes, sir.

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

A. Yes, sir.

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

A. Yes, sir.

Q. Would you agree with me that these two impressions here and here on the test impression are much more jagged than the cutting surfaces that are depicted on 155?

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A. Yes, sir.

Q. And yet there can be no question in the world that the test impression, 1843, was made with the drill, 155; correct?

A. That's correct.

Q. All right. Now, in addition to the lock that you showed us, that drill mark that you have shown pictures of was drilled down into the lock; correct?

A. Yes, sir.

Q. In fact, you had to remove some pieces of the stacked plates of the lock in order to get a better look at it; is that right?

A. That is correct.

Q. The lock in question, just to refresh our recollection here, is -- if I could put up what's been received as Government Exhibit 127 -- is a Master padlock, and these little things here, those are actually stacked pieces of metal; is that right?

A. Yes, sir.

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

A. Yes, sir.

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

A. No, sir.

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

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drill press?

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

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

MR. TIGAR: I ask that answer be stricken, your Honor, non-responsive.

THE COURT: Motion is granted, stricken.

BY MR. TIGAR:

Q. If one holds a drill, a regular household drill and attempts to drill it -- to drill upwards, right, into something, would you expect that portions of the material being drilled are going to drop down into the chuck?

A. Possibly.

Q. Did you make an examination of the tool -- the drill or the drill bit -- to see if evidence recovered at the crime scene would permit you to see if anything had stuck to the drill or the drill bit?

A. I don't understand your question.

Q. Did you make an examination of any shavings that had been adhering to the chuck or recovered from the crime scene?

A. No, sir.

Q. Now, if someone is drilling with a household drill and you're drilling upwards and underneath, as if I were going to drill up underneath this lectern, would you expect that I would not be able to hold the drill as steady as I would if I was

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using a drill press?

A. Probably, yes, sir.

Q. And in fact, does the lock, as you examined it, show signs that the drill wiggled, as the drill hole was being made?

A. Wiggled.

Q. Wiggled back and forth as opposed to being held steady as a drill press would?

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

Q. And one could -- you know, we don't have to be, you know, experts in the field to take a look at that hole and see whether or not it looks like the thing had wiggled?

A. Yes, sir.

Q. Okay. Now, you told us that the drill hole was made down inside the lock; is that correct?

A. Yes, sir.

Q. Now, when someone drills, as the drill penetrates into the material, shavings or debris from the item being drilled are going to come loose; is that right?

A. Yes, sir.

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

Q. Some of those will be carried out by the flutes of the drill, those things that go around; is that right?

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

Q. And some of those things will remain in the hole and start to scar the material being drilled; isn't that right?

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A. They could.

Q. Now, in metallurgy, are you familiar with the phenomenon of compression of the drilled material when a drill bit is being used to drill metal?

A. No, I'm not a metallurgist.

Q. I didn't ask you whether you were a metallurgist; I just asked you whether you were familiar with it.

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

Q. Okay. Whether in metallurgy or not in metallurgy, are you familiar with the phenomenon of compression of the material that's being drilled by the heat and pressure of the drill bit?

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

Q. We don't have to be experts in metallurgy to know that; we've all seen it; right?

A. Yes, sir.

Q. That is to say, if we go and try to drill a piece of metal at home, the pieces of the metal are going to get caught and start scarring up the piece that we're working on; right?

A. They could, yes, sir.

Q. All right. Now, you testified on direct examination that the hole size was a quarter of an inch; correct?

A. Yes, sir.

Q. Did you measure it?

A. Yes, I did.

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Q. What did you measure it with?

A. Ruler.

Q. A ruler?

A. Yes, sir.

Q. And it's a quarter of an inch?

A. In diameter, yes, sir.

Q. In diameter, all right. Now, did you measure the drill bit?

A. Yes, sir.

Q. What's the diameter of the drill bit?

A. One-fourth of an inch in diameter.

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

MR. TIGAR: Has that not been received?

THE COURTROOM DEPUTY: It has not been received.

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

Excuse

me, sorry.

THE COURTROOM DEPUTY: No.

MR. TIGAR: No, all right.

BY MR. TIGAR:

Q. When you examined the drill, did you see a mark on it that indicated that it said a quarter of an inch?

A. The drill bit, yes, sir.

Q. Yes, sir.

A. Uh-huh.

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Q. Now, do you know what the actual measurement in diameter of a standard quarter-inch drill bit?

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

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

A. .236?

Q. Yes, sir.

A. Certainly could be.

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

A. I don't know that that's the standard diameter of one-quarter-inch drill bit, no, sir.

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

A. I don't know.

Q. Did anyone under your direction collect a bunch of quarter-inch drill bits?

A. Yes, sir.

Q. You told us that they did.

A. Yes, sir.

Q. Did they measure those drill bits?

A. Measure each one of them?

Q. Yes, sir.

A. No.

Q. Did they measure some of them?

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

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

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

A. That's correct.

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

MR. TIGAR: May I approach, your Honor?

THE COURT: Yes.

BY MR. TIGAR:

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

A. Yes, sir.

Q. I'm going to ask you to take a look at that and see if that refreshes your recollection that someone under your direction measured the drill bit.

A. Right. Yes, sir.

Q. And what did they find is the diameter of a quarter-inch drill bit?

A. .236 inches.

Q. Thank you, sir.

Now, .236 -- excuse me.

.236 inches is about 15 --

MR. ORENSTEIN: I'm sorry. May I see what the witness was shown?

MR. TIGAR: I'm sorry?

MR. ORENSTEIN: May I see what the witness was shown?

MR. TIGAR: I'm sorry. Thank you.

MR. ORENSTEIN: Thank you.

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MR. TIGAR: Thank you.

BY MR. TIGAR:

Q. .236 is about 16/54, isn't it?

A. I guess. I don't know.

Q. We could do the arithmetic?

A. Yes, sir.

Q. Now, you told us that on a given day, the same machine can make thousands of drill bits; correct?

A. Yes, sir.

Q. And in fact, from your experience, in the modern industry, the same machine does make thousands of drill bits every day; right?

A. Yes, sir. That's correct.

Q. And in the process of making, a piece of bar stock is pulled, machined, tempered, and ground; is that right?

A. Yes, sir.

Q. All of those processes?

A. Most of the time, yes, sir.

Q. And in modern manufacture, that is an automated process; correct?

A. Yes, sir.

Q. Now, after you -- you said you looked at these -- the lead impression that you made and the photograph of the lock through a comparison microscope; isn't that right?

A. I didn't look at a photograph of the lock.

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Q. You looked at the actual -- you looked at the test impression and the lock itself through a comparison microscope?

A. That's correct.

Q. And you took photographs?

A. Yes.

Q. Now, that comparison microscope is not stereoscopic, is it?

A. Yes, it would be. The image that you see is three-dimensional.

Q. You're testifying that the image is three-dimensional?

A. The image that you see, yes.

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

A. Yes, sir.

Q. And it has two eyepieces on one piece; is that right?

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

A. That is correct.

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

A. Yes, sir.

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

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

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

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items?

A. The one lens -- one part of the microscope is focused on one side or one part of the -- for instance, in this case, it would be the lock.

Q. The lock?

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

Q. Is it your testimony, sir, that with objective lens, you could get a stereoscopic or 3-D image of the test impression?

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

Q. Yeah. Okay. That was my question, sir. Is it your testimony that with a single objective lens, you can see something under that lens in three dimensions?

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

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

MR. TIGAR: May I approach, your Honor?

THE COURT: Yes.

BY MR. TIGAR:

Q. I'm going to show you, sir, what I have -- do you have the exhibits that you were shown the other day?

A. No, sir.

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

This and those.

BY MR. TIGAR:

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Q. Sir, I'm showing you now what has already been received as Government's Exhibit 1842 and 1843, and the clerk is also handing you what have been marked as Defendant's Exhibits E, as in Echo, 1842 and 1843. Would you examine those and tell us whether the E exhibits are photographic enlargements of the Government exhibits that bear the corresponding number?

A. Yes, sir.

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

MR. ORENSTEIN: If they're duplicates, I'm not sure I understand the purpose, your Honor.

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

MR. ORENSTEIN: No objection.

THE COURT: All right. They're received.

BY MR. TIGAR:

Q. Sir, did you notice that 1842 bears a line drawn across it? Do you see that line?

A. Oh, yes, sir.

Q. All right. Thank you. Now, so that we can orient ourselves here, sir, I've placed E1842 -- and we're focusing in on a portion of the striations that you observed; correct, sir?

A. Yes, sir.

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

A. Yes; that's correct.

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

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this tinting phenomenon there; is that correct?

A. Yes, sir.

Q. Whereas, if we were to look at 1843, E1843, we would see something more nearly a perfect circle; correct?

A. That's correct.

Q. And does that indicate to you that either the drill or the thing being drilled was moved during the process of drilling?

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

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

A. It could be.

Q. Could be. All right.

Now, sir, in order that we can make a comparison, I'm going to cut E1842 along the line that you noticed.

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

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

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

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

THE COURT: All right.

BY MR. TIGAR:

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Q. I've now placed on the ELMO E1843. Let me zoom out here. Now, if I place this piece here, what's been marked as E1842, I can see that there are some striations that follow through -- correct -- and some that do not; right?

A. That's correct.

Q. And if I move it around, in different locations, I can see that, well, here's a striation, but in this area here it becomes very blurred and this striation here does not match or follow through; correct?

A. That's correct.

Q. And if I start looking over here, I can see this striation following through, but I can't see this one following through; is that right?

A. Yes, sir.

Q. And if I were to take this exhibit, 1842 and 1843, I could perform that same exercise -- that is to say, looking for similarities and differences -- around the entire circumference; correct?

A. You could, yes, sir.

Q. All right. And as I was looking for similarities and differences, I could note here on E1842 that up in here, in this area, there's simply nothing that we can see by striations; correct?

A. There is nothing there, yes, sir.

Q. All right. And in order to look at this and take it and

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run it around and look at it in different places, these photographs, which are the ones you took -- I don't have to be an expert to look for striations there, do I?

A. You don't, no, sir. But I don't use photographs to make comparisons.

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

A. No.

THE COURT: That wasn't his answer.

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

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

BY MR. TIGAR:

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

A. Yes, sir.

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

A. That's correct.

MR. TIGAR: Is 1841 in evidence?

THE COURTROOM DEPUTY: Yes.

BY MR. TIGAR:

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

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

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

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

A. Certainly.

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

A. Yes, sir.

Q. That's a striation; right?

A. Yes, sir.

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

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

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

A. That's correct.

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

Thank you.

THE COURT: All right.

Mr. Orenstein, you have some redirect?

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

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

I

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

MR. ORENSTEIN: 127.

THE COURT: 127.

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

MR. TIGAR: No objection, your Honor. It had been marked as admitted on my copy.

THE COURT: It's received.

REDIRECT EXAMINATION

BY MR. ORENSTEIN:

Q. Good morning, Agent Cadigan.

A. Good morning, sir.

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

MR. ORENSTEIN: I'm sorry, your Honor, I was mistaken. 127 is which exhibit?

MR. TIGAR: It's the picture --

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

I

was thinking of 157. I was confused.

THE COURT: 127 is now admitted.

MR. ORENSTEIN: And no objection.

THE COURT: Okay.

BY MR. ORENSTEIN:

Q. Now, you were asked this morning about the photograph of the test impression, Government Exhibit 1843.

A. Yes, sir.

James Cadigan - Redirect

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

BY MR. ORENSTEIN:

Q. Now, Agent Cadigan, the defense lawyer asked you whether the cutting surfaces which you looked at when you examined the

the cutting surfaces which you looked at when you examined the tip of the drill bit, 151B, had very minor differences on its two different cutting edges; do you recall that question?

A. Yes, I do.

Q. Now, looking at Government Exhibit 1843, can you tell the difference between those two cutting surfaces and striations that each of one of them has left?

A. Yes, sir.

Q. Now, that jagged line running through the middle of the photograph, that's the boundry between the two cutting surfaces; is that correct?

A. Yes, sir.

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

A. Well, it would be, the -- there are two cutting surfaces on the tip of the drill bit, and what you're seeing on the left side would be the impression cut by one portion of the drill bit, and on the other side would be the other cutting portion of the drill bit.

Q. And when you lift the drill bit from the cutting surface, when you're making your test impression, when you raise the --

A. -- drill press.

James Cadigan - Redirect

Q. Thank you, the drill press -- is there any way of guaranteeing that that boundary line between the two cutting edges will be raised in an entirely uniform fashion?

A. No.

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

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

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

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

Q. Now, on cross -- on cross-examination on Friday, the

defense attorney asked if it's your belief that every drill bit that comes off the line in the manufacturing process is unique when it leaves the factory. Do you recall that question?

A. Yes, I do.

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

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

MR. TIGAR: Object to this, your Honor.

James Cadigan - Redirect

THE COURT: What's the objection?

MR. TIGAR: No foundation for his opinion.

THE COURT: Overruled.

THE WITNESS: As each of the drill bits is placed onto a particular machine, it's then placed up against a grinding wheel. And the purpose of the grinding wheel is to sharpen the tip of the drill bit in order so that it will perform its function; that is, cut and remove metal.

That wheel has random particles on it that are presented to each of the tips, the tips of the drill bit, that are to be sharpened in a random fashion, and that's why from the first to the 1,000th drill bit produced on a particular grinding machine, they will be different, because each time that wheel turns and it scrapes against the drill bit, particles drop off; and particles of the metal, of the drill bit, are sharpened and thus produce a unique tip for each one that's produced.

BY MR. ORENSTEIN:

Q. Now -- excuse me -- is the grinding wheel that's used in that process, is that larger than the surface of the drill bit that it's cutting?

A. Yes, sir.

Q. So you could have one drill bit grinded (sic) against one part of a wheel and the next drill bit is ground against a different part of the same wheel?

James Cadigan - Redirect

A. Yes. And normal function is that the wheel is indexed, which means it's moved for each drill bit. The first drill bit is sharpened. The first portion of the drill bit is sharpened, it comes out, the drill bit rotates, it goes back in, and as it goes back in, it moves just slightly so it hits a different part of the wheel so a groove is not cut into the grinding wheel so it wears the grinding wheel evenly. So it hits a different part of the grinding wheel each time.

Q. Now, is it generally the case that one drill bit, which has, as you testified, two different surfaces -- will those two surfaces be cut against the same grinding wheel?

A. Yes, sir.

Q. And obviously it's the same grinding wheel, so it would produce, one would expect, similar if not the same cuts?

A. It would be similar.

Q. But even with that similarity, again, looking at Government Exhibit 1843, which is on your screen, does that show the difference in striations that are left even when the same wheel cuts one drill bit at two different times?

A. Yes, sir.

Q. Now, if I may redisplay Government Exhibit 157. You were asked this morning about the possibility of scars being produced during the drilling process.

A. Yes, sir.

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

James Cadigan - Redirect

this is from the lock itself; is that correct?

A. Yes, sir.

Q. And that's opposed to this side which I'm pointing to which has the test impression; is that correct?

A. That is correct.

Q. So is this area which I'm indicating with my pen something that could indicate the kind of scarring you were being asked about?

A. It could be.

Q. Now, that's not the kind of circular motion that's produced by a drill; is that correct?

A. That's correct.

Q. That one little mark doesn't tell you anything about the kind of striations produced --

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

THE COURT: Sustained.

MR. ORENSTEIN: Thank you, your Honor.

BY MR. ORENSTEIN:

Q. Now, on cross-examination on Friday, the defense attorney asked you about the process of sharpening not only the tip of a drill bit, but also its flutes; do you recall that questioning?

A. Yes, sir.

Q. The marks that you examined on the padlock, Government Exhibit 126, where were they within the padlock?

A. One was within the lock cylinder.

James Cadigan - Redirect

Q. And based on the position in the lock and the nature of the marks that you saw, could you tell whether they had been cut with the tip of a drill bit or its flutes?

A. Well, based on the orientation in the holes in the lock cylinder, I would say it was the tip of the drill bit.

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

I have nothing further. Thank you.

THE COURT: Mr. Tigar.

RE-CROSS-EXAMINATION

BY MR. TIGAR:

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

A. You mean what I said?

Q. Yes. No, any documents or pictures or photographs or charts or any materials of any sort related to your testimony.

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

Q. Okay. And you did not meet with any of the prosecutors over the weekend; correct?

A. No, sir.

Q. You talked about this business of manufacturing drill bits. I want to ask you some more about that since it's been gone into.

In 1995, did the FBI under your direction begin a study of whether or not a drill-bit mark made in a particular item could be identified as unique?

James Cadigan - Recross

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

THE COURT: Overruled.

THE WITNESS: In probably late 1996, we started to accumulate drill bits to study them to perhaps provide a more statistical base for the examination. But the purpose of the study --

BY MR. TIGAR:

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

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

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

Q. Was an analogy to ballistics being used?

A. If you mean firearms identification.

Q. Yes, firearms identification.

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

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

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

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

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

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

James Cadigan - Recross

evidence -- correct -- or firearms identification evidence?

A. Cartridge case impressions and -- yes.

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

A. Depending on the rate of twist and the length of the barrel, that is certainly possible.

Q. Right. And you could not think of a pistol in which the bullet would have made more than one full revolution before leaving the barrel, could you?

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

Q. And in connection with this operation Drill Fire or this study, someone looked at the possibility of getting Microsoft Mathematica; correct?

A. I think so.

Q. And someone also looked at the possibility of making some kind of standard statistical analysis; correct, sir?

A. It's my understanding that there was -- we were looking at what might occur as far as a statistical study.

Q. Right. Because in order to know whether or not something is truly unique, or a little bit unique, or could have happened a number of times, we can apply to the insights of statistics in order to evaluate that; right?

MR. ORENSTEIN: Objection. Scope and relevance.

THE COURT: Overruled.

James Cadigan - Recross

THE WITNESS: I don't think that the statistical study would prove it. Certainly the -- utilizing the computer would aid in establishing the criteria for such an identification, but it doesn't -- you cannot make an identification based on statistics.

BY MR. TIGAR:

Q. To take an example from another field, there's no known instance of two people having the same fingerprints; right?

A. That is correct.

Q. And millions and millions and millions of fingerprints have been studied; correct?

A. That is correct.

Q. So now you're confident in knowing because the science has been done that a fingerprint is unique; correct?

A. Yes, sir.

Q. Right. You were going to do a study to see if you could analyze statistically drill bits; right?

A. We were going to look at drill bits.

Q. Right. And in that connection, someone was going to do a Poisson distribution; right?

A. I don't know that they were going to do that as part of the study. It was just one of the things that the person that was making those notes was thinking about.

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

A. I have no idea.

James Cadigan - Recross

Q. All right. Do you know that a Poisson distribution is something named after a scientist who made a mathematical way to look at evidence as how often things happen and whether they're random or not?

MR. ORENSTEIN: Objection.

THE COURT: Sustained.

BY MR. TIGAR:

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

Was this study ever completed?

A. No, sir.

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

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

The drill-bit impressions need to be examined by me, and paperwork needs to be -- final paper needs to be written, but, no, it's not done yet.

Q. Not done, all right. Now, you told us that when a drill bit is manufactured, there is a phenomenon by which the grinding wheel is offset; correct?

A. Offset?

Q. Is changed each time so that the same portion of the grinding wheel surface isn't presented to each drill bit; right?

A. The grinding wheel is not offset; the drill bit itself is indexed or moved.

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

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typical drill-bit manufacturing process?

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

Q. Four, okay. So Drill Bit 1 hits this part of the wheel and then goes off, and then Drill Bit 2 hits the next part, 3, 4, and then goes back to 1; is that the way it works?

A. Well, the way it works is the first part of the Drill Bit 1 hits the grinding wheel at Portion A, comes out, and the second part of the drill bit hits Part B of the grinding wheel and so on.

Q. And so on. And did you do a study to determine how often the same impression of grinder positions occurs during the course of an average manufacturing day?

A. No, sir.

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

A. No, sir.

Q. All right. But you do know that thousands of drill bits are manufactured each day by a given factory; correct?

A. At least, yes.

Q. Now, the drill bit about which you've been testifying, do you know where it was manufactured?

A. No, sir.

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

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

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

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was produced in?

A. No, I don't.

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

A. No, sir.

Q. Now, on cross-examination, you were shown again what's been received in evidence as Government's Exhibit 1843. And if that can be shown. I didn't understand. You notice that when you were talking about these jagged edges -- correct -- if you made another drill bit impression with the same drill press and the same drill bit with which you made this, would you expect these jagged lines to be different?

A. Different?

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

A. I don't know.

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

A. Yes, sir.

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

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

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

A. 1955?

Q. Excuse me, 1995.

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A. I think it was 1995.

Q. And all the pictures that you have here were taken in 1995; correct, sir?

A. Most of them, yes, sir.

Q. And is it your experience that as you use a drill bit, over time, it starts to wear out?

A. It can change.

Q. If you use a drill bit to cut things that are hard, like metal, it can change; right?

A. Depending on the metal.

Q. Depending, yes, exactly.

A. Uh-huh.

Q. And again, do you know what use, if any, this drill bit that's in 155 had between the fall of 1994 and the time in 1995 when you looked at it?

A. No, sir.

MR. TIGAR: No further questions, your Honor.

MR. ORENSTEIN: Nothing further.

THE COURT: All right. This witness then excused?

MR. ORENSTEIN: Yes, sir.

THE COURT: That agreed. Mr. Tigar?

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

THE COURT: Is it agreed --

MR. TIGAR: Yes, it's agreed.

THE COURT: You may step down.

THE WITNESS: Thank you, your Honor.

THE COURT: Next witness, please.

MR. MACKEY: Your Honor, the United States will call George Krivosta. Ms. Wilkinson will examine.

THE COURT: Krivosta.

THE COURTROOM DEPUTY: Would you raise your right hand, please.

(George Krivosta affirmed.)

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

Would you state your full name for the record and spell your last name.

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

THE COURTROOM DEPUTY: Thank you.

THE COURT: Miss Wilkinson.

MS. WILKINSON: Thank you, your Honor.

DIRECT EXAMINATION

BY MS. WILKINSON:

Q. Good morning, Mr. Krivosta.

A. Good morning.

Q. I'm sure it will become clear to the jury as they listen to you, but can tell them where you're from.

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

Q. Where were you born?

Q. Where were you born?

A. I was born in Brooklyn, New York.

Q. Can you tell us where Suffolk County is.

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

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

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

Q. So you have no affiliation with the police department there in Suffolk County?

A. That is correct.

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

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

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

A. Firearms and tool mark examinations.

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

A. I do not.

Q. Do you also do independent examinations?

A. Yes, I do.

Q. Does that mean when you do an independent examination that you're not doing it for the Suffolk County Crime Lab?

A. That is correct.

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

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conduct just such an examination?

A. Yes, I was.

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

A. Yes, I have.

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

A. It does not.

Q. Tell us how long you've been employed as a firearms and tool marks examiner.

A. I started with the Suffolk County Crime Laboratory in 1974. I was moved into the firearms section in 1979.

Q. Now, you told us that your unit is called the Firearms Unit; correct?

A. That is correct.

Q. You also do tool marks?

A. In the Suffolk County Crime Laboratory, both firearms examinations and tool mark examinations are done in the same section of the laboratory. Tool mark examinations is just considered to be -- in actually, I should say firearms examination is just considered to be a specialized form of tool marks examinations.

Q. Explain that for the jury, could you.

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

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

When a cartridge or a bullet is fired from the gun, these markings are now transferred from the weapon onto it so in actuality, the individuality has to take place in the weapon first, not on the expendents.

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

A. There is not.

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

A. I did.

Q. Did it involve comparing a padlock with a test impression that was made from Mr. Nichols' drill bit?

A. Yes.

Q. Now, before we get into the details of that comparison, can you tell us just a little bit about your educational background. When did you receive your bachelor of science degree?

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

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

A. 1974.

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

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

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Q. Now, over the years, how many tool marks and firearms -- should I just say tool marks examination for purpose of these?

A. Yes.

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

A. Hundreds of thousands.

Q. Since you have become a tool marks examiner, have you done any teaching or lecturing in this field?

A. Yes, I have.

Q. What have you done?

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

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

Have you done any proficiency tests, either internal or

external, as they relate to a spinning drill bit?

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

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

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What was the name of it?

A. Collaborative Testing Services.

Q. What is that?

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

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

MR. TIGAR: Object to leading, your Honor.

THE COURT: Overruled. It's preliminary.

THE WITNESS: That is correct.

BY MS. WILKINSON:

Q. And did you do -- what type of work did you do as part of this external proficiency test on a spinning drill bit?

A. It was to perform a -- they had submitted a drill bit. They had submitted questioned drill impressions of essentially blind holes, holes where the drill bit hadn't fully penetrated the stock, and you were asked to determine if the markings could be associated and if any of the other markings could be associated with each other.

Q. Let's turn to the actual examination of a spinning drill bit and start with the identification of tool marks that you might compare. Can you tell us what type of tool marks you

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look for in a spinning drill bit.

A. There are essentially two types of tool marks. We have what are referred to as impressed tool marks. They describe where the -- there is force between the tool, which is the harder of the two substances, and what's going to pick up the markings. And from pressure between at least two, a -- a mirror image or a negative of what's on the tool will be impressed.

Another type of tool mark is what's referred to as a striated tool mark. That's when the tool, again, the harder substance, comes across the softer of the two substances and leaves a series of parallel scratch marks that are often referred to as either striate or striations.

Q. Okay. Let's compare that to a firearms identification. What type of tool marks are you looking at when you're doing a firearms identification?

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

A. Again, you're looking at both types. If we were talking about a firing-pin impression or if we were talking about a brief face marking, we would be talking about compressed tool marks. If we're talking about the bullet traveling down the barrel, if we're talking about the extractor rubbing across the edge of the rim or during the extraction process in the casing coming out from the chamber, in those cases, we would be talking about striated tool marks.

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

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the bullet coming down the barrel. Does it make any difference how many times the bullet spins or revolves before it goes out the barrel whether you find those striations or tool marks?

A. It does not.

Q. Why is that?

A. The rifling keeps the bullet from slipping during its travel down the barrel. So it's going to pick up -- it's following the same type of path as it travels down. It would have to take a deviated path, which at times does happen. And that's what's referred to as slippage. When the bullet first starts its travel, it can slide a little bit before it engages the rifling. So you might have some areas that would appear different from other areas on the surfaces that you're examining, but that's due to slippage.

Q. And slippage is something that you see in certain cases; is that right?

A. Yes, you do.

Q. Does that preclude you from making any identification of the firearm?

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

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

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you're talking about?

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

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

A. I do.

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

THE COURT: Yes.

BY MS. WILKINSON:

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

Now, if you were going to use that drill to drill a

padlock and you were holding it underneath the padlock, would you -- could you have the same phenomenon you just talked about, some kind of slippage or some kind of lateral movement?
A. Most definitely. A drill -- one of the things you have to be aware of when dealing with a drill and doing drill-mark comparisons is you have two cutting surfaces. Now, those two cutting surfaces are going to be taking off metal at the same time. The angle of those cutting surfaces can change slightly. Also the pressure on one end or the other end can change. And if the tip of the drill bit is not supported by the sides of

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the hole -- as an example, when we get deeper down into a hole, that drill bit is going to be supported and is not going to be allowed to move as much. But when we're first starting, we can actually have a cutting edge coming like this, shifting a little bit, changing the angle that it's at, coming across, maybe making another little bend. At the same time, it's leaving markings. You can find areas of patterned reproducibility, but then you can find areas that are breaks. In the type of situation where you're drilling and trying to hold something, will just increase the possibility of that happening.

Q. But you would still be able to find those patterns, I think you called them, of reproducibility; those are just striation patterns; is that what you're talking about?

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

Q. And I think you said as you're drilling into this padlock, you'd expect for there to be more movement as you just start to enter the padlock -- is that right -- and you'd have a better pattern in the deeper end of the lock; is that what you said?

A. That's correct.

Q. And that's because of what?

A. The ability of -- you have the ability to have movement. But anyone who's tried to drill a hole for the first time in metal, one of the things sometimes you have to do is you have to make a little tick there to get the drill started, otherwise

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what will happen is the drill will run, it won't even start penetrating the metal. It's the same sort of thing happening. You can have this sort of movement in there; and then after you get in a certain amount of depth, the sides of the drill are supported, and it will drill much more uniformly.

Q. So the sides of the hole will support the drill bit; is that what you're saying?

MR. TIGAR: Leading.

THE COURT: Sustained.

BY MS. WILKINSON:

Q. What would be supporting the drill bit?

A. In a case like this, the padlock is holding the drill, you're holding the drill and the operator who is doing this is

trying to keep them as stable as possible.

Q. Now, is there anything particularly difficult or different in examining the marks left by a spinning drill bit?

A. As long as one keeps in mind that there are two cutting surfaces and that the -- you know, you may have -- you see some discrepancy on one, you might have to look at the other cutting surface. 'Cause either one of these can leave the markings, and they also don't necessarily have to be all the way across from one another.

If this one is cutting, this one is cutting and this one suddenly breaks free, this one is going to continue for a little bit. Now, we wouldn't realize that unless we stopped

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

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

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

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

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

A. The cutting edge of the drill is ground. And ground -- grinding is a type of machining procedure that leaves very -- what we refer to as accidental marks, the possibility of carryover. "Carryover" means that something can be manufactured and something else manufactured immediately thereafter could have the same type of markings on it.

Drilling -- or I should say grinding is a type of machining process where that cannot take place. The cutting away of the metal is done by the very little abrasive bits of material on the -- on the wheel. They're harder than the tool

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steel. They tend to make small scratches, but they're turning. They immediately -- they take a little metal off and they come away, and something -- a different one in a different place comes along. The possibility of getting the exact same structure becomes rather infinitesimal. So when we talk about looking at the striations in a reproducible pattern, they would have to be there either -- the only way they could be there other than from having the same tool would be by pure chance.

Q. Now, what about when you do a firearms examination? Do you have some of those same phenomena going on?

A. When you do firearms examinations, you have to be very cautious of where you're looking and what you're looking at

cautious of where you're looking and what you're looking at. As an example, if we were to look at the inside of a barrel where the grooves or the shower spots are, there are some machining operations where you can get carryover, where the cutting tool that cuts that groove makes a passage, takes metal away. Then when it manufactures the next barrel, the exact same situation can happen, and there can be a certain amount of similarity between those two markings.

There are other parts, what we refer to as the land impressions when the barrel is formed. The inside of that is drilled, it's reamed. The tool marks that are left inside that barrel are particular to the direction of the bullet is going to travel. So the markings that are going to be placed on there are totally random. The possibility of them reproducing

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is exceptionally remote.

Q. And is that possibility of the randomness or the chance repeat of the bullet coming out of the barrel similar to the phenomenon you've described about the chance of reproducibility of the drill bit spinning into a lock or some other metal surface?

A. That is correct.

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

THE COURT: Yes.

BY MS. WILKINSON:

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

Did you examine that padlock in connection with this case?

A. I did.

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

A. When I received the padlock, it was wrapped up in tape in a similar-type fashion, and I began my examination by documenting the condition I received it. Then what I did -- I had noticed that the lock had been partially disassembled, so I removed these plates in order to remove this brass part that's referred to as the cylinder bolt from the lock so that I could more easily examine that.

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Q. Why did you want to get to the cylinder?

A. My examination revealed that there had been attempt to drilling and a drilling -- through the pin area of the lock.

Q. Did you see that through a visual inspection?

A. Yes, I could.

Q. And could you describe for the jury what you look at on that padlock that tells you or shows you that there was an attempt to drill with a drill?

A. This bright, shiny circular area; and right above it, in the kevwav, where the pins normally would have been, there's a

round hole that penetrates into the lock.

Q. Let me show you Government's Exhibit 1841.

Does that photo indicate what you're describing?

A. Yes, it does.

Q. Could you use that black pen there and take it -- you see that up on top of there, and take it down and write underneath on the screen itself and show the jury what you're describing on Government's Exhibit 1841.

A. This first area demonstrates the attempt to drill in the center of the keyway. Off to the side was the second area that was the actual drilling through the pin area on the lock. When I examined these and in my notes, I referred to various areas, this being Area A and this being Area B.

Q. Can we stop right there, Mr. Krivosta, for a moment. Now, you've shown us two impressions, and now you're breaking one

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down into A and B; is that right?

A. That's right.

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

A. A and B compose both the shallow and deep impression. They're just two different surface areas that I worked on in the shallow and deep impression.

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

A. The other impression: This photo was focused for the top area; but down at the bottom of this hole, right down in this approximate area, was where -- I'm sorry. I keep on hitting that little side button there and wiping things out here.

Right down in there -- that was at the bottom of the hole where what had happened was the drill had almost punched all the way through and started separating out the metal. But there was also areas of striations that were consistent with being the bottom of the hole and would have been -- and were suitable for comparative analysis.

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

A. I examined it visually. Then I took this part and went to an instrument that was referred to as a stereomicroscope.

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

A. Once I had taken the lock and disassembled it, I then took the cylinder bolt, took it under the stereomicroscope; and that's where I performed my detailed examinations, attempting

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

Q. Before we describe that, were you also provided with Government's Exhibit 244, a test impression?

A. Yes, I was.

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

THE COURT: Yes.

BY MS. WILKINSON:

Q. Mr. Krivosta, did you examine Government's Exhibit 244 before you conducted your analysis?

A. Yes, I did.

MS. WILKINSON: Excuse me, your Honor.

BY MS. WILKINSON:

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

A. Yes, I am.

Q. What is it?

A. It's lead.

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

A. When one starts performing tool mark comparisons, one would want to use the softest metal available first. What you do not want to do is change the tool in any form until you've got a set of markings off it. If necessary, one can always go to

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

Q. So let's say someone wanted to review the work that had been done. Is it better to make the drill bit impression into this soft metal so someone could examine the drill bit later and make yet another impression, if they found it necessary?

A. By starting with the lead material, one could start performing examination. If that lead provided you with enough information, there might not be a need to even go any further.

Q. But if someone else wanted to come in and review the work, could you have protected the drill bit as much as you could by using lead rather than some harder metal?

A. Yes, I would.

Q. And if the impression had been done in a harder metal, say a metal similar to the padlock, is there a chance the comparison would have been harder to make, instead of easier to make?

A. If you started with the harder metal first, you might not have captured the markings that were on there; and if you altered the drill, you can't go back. Once the drill is changed, there's no way you can go backwards. There's no time machine that allows you to go backwards.

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

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

A. That is correct.

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

A. It would inhibit the comparison.

Q. Why is that?

A. Because if the markings on the padlock were destroyed in some manner, again, you can't go back. The possibility of changing it, you know, by abusing it or something else, into it, is so infinitesimal, you know, it wouldn't be talked about.

But, you know, to take it and obliterate the markings so that they couldn't be seen: That's always a distinct possibility.

Q. So if someone had seized this padlock and then dropped it, if it altered it, would that inhibit your identification, or assist it?

A. It would inhibit.

Q. So can you -- all right. Let's turn to your actual examination, if we could. You said you looked at this visually. And can I show you a copy of the test impression, Government's 1843.

Did you view the test impression, Government's 244, under the microscope?

A. Yes, I did.

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

A. Yes.

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

A. Stereomicroscope.

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

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

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

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

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

A. They do not.

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

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

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always be more comfortable in reviewing the evidence.

Q. And do you make your comparison based on what you see through the microscope?

A. That is correct.

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

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

A. Yes, I do.

Q. Now let's talk about what you did. I want to start by showing you Government's Exhibit 157, which I believe you've seen before.

Do you recognize this?

A. Yes, I do.

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

A. This is a -- the questioned tool marking from the lock that was at the bottom of the deeper hole. This particular -- right along the edge of the marking of this piece of metal, there was a small red-ink mark that had been placed there by someone preceding me.

Q. So if we want to go back to the visual examination you did of the lock, this is of the deep impression, not of the shallow impression; is that right?

A. That is correct.

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

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

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the piece of lead. One of the impressions that was more towards the right and rusted bit had a small red mark on it, also, that would have been up in this 12:00 position.

Q. Now, when you examined the deep impression, did you find tool marks suitable for comparison?

A. Yes, I did.

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

THE COURT: All right. Now would be appropriate.

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

THE COURT: All right.

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

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

MR. TIGAR: Yes, your Honor.

MS. WILKINSON: Okay.

VOIR DIRE EXAMINATION

BY MR. TIGAR:

Q. You've been -- good morning, sir. My name is Michael Tigar. I'm one of the lawyers appointed to help Terry Nichols.

You began in the tool marks section in 1979; is that right?

A. That is correct.

Q. How long does it take you to do a -- Do you have an average amount of time it takes you to do a typical tool mark

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examination?

A. The question is what becomes a typical examination. I've worked performing comparisons anywhere from a matter of minutes

to four to seven days before we were done with identifying one mark.

Q. Yes. You said that you had done hundreds of thousands of tool mark examinations in a period of 20 years. That would work out to how many a year?

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

Q. And you said hundreds of thousands, so how many hundreds of thousands do we have here?

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

Q. All right. So you would say that you did, what, 10,000 tool mark identifications a year?

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

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

A. Approximately.

Q. And so how many does that work out a day of tool mark identification, if you're doing 10,000 a year?

A. Quite a number. The question is is how do you value a tool mark examination and what do you call it. I refer to a tool mark examination as every time I take one surface, put it against another surface. That's a tool mark examination. So therefore, as an example, if I'm examining two test bullets -- all right -- and I look at four tests, now, have I done one

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

Q. That was my question --

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

Q. Yes, go ahead.

A. At the same time, if I have six surfaces or 12 surfaces on that bullet and I bring two of these surfaces up against one another and I now look at them, and now I rotate away from that, and I look at another surface and I rotate and I look at another surface and then three-quarters of the way through I finally put two surfaces together, now have I done one examination, or have I done one examination where I matched two surfaces together and at the same time did, say, 10 or 11 that were not matched to one another, or what we refer to as nonmatches? In actuality, I consider every time I bring two surfaces together and I sit there and look at them a comparison.

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

A. That is correct.

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

A. When they punched in data that was stored at the laboratory where all we did was kept track of the number of casings and/or bullets that were compared vs. test specimens; so in other

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

four tests. They documented that I did 5,000 examinations in a year in that manner. So if we were to count every land, now obviously that would be much higher.

Q. All right.

A. So by the standards we kept in the laboratory, there's documentation of me doing at least 5,000 in one particular year where we kept track.

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

A. I have one article published in the Association of Firearms and Tool Mark Examiners' Journal.

Q. And that is a two-and-a-half-page article that describes a firearms accident and recommends procedures not to have those kinds of accidents anymore; isn't that fair?

A. It also describe a rather unusual comparison where the cartridge had been detonated by a non-typical part of the firearm striking the primer, instead of the primer doing the initiation of the cartridge. What had happened was the bottom of the slide had struck the firing pin and caused that cartridge to detonate.

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

no --

Q. Sir --

A. Sir, please, can I finish?

There was no way for me to reproduce that type of

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

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

A. It does not.

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

A. Yes, I did.

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

A. The --

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

A. Which certification examination?

Q. On examination by Government Counsel, you said you'd done something with somebody called Collaboration Testing. Do you remember that?

A. Yes, I do.

Q. Did you put that on your resume?

A. We take --

Q. Did you put that on your resume, sir? Would you just answer my question.

A. I did not.

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Q. Now, how many times have you testified in court as an expert witness comparing spinning drill bits?

A. Testifying in court, not once.

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

A. That is correct.

Q. Okay. Now, are you aware of any studies showing the statistical probability that two impressions made by two different drill bits will in fact be different?

A. There was a paper published by Joe Reitz of the Baltimore Police Department in 1975 involving a homicide case. He also took the work of -- I believe it was Art Parthalow, or something like that, from Chicago, and used his assistance in the publication of that paper in the December --

Q. That paper --

A. -- in December of 1975 in the Association of Firearm and Tool Mark Examiners' Journal.

Q. Did that paper written some 22 years ago contain a statistical analysis of the probabilities involved in comparing different tool marks?

A. It did not.

Q. So the answer to the question whether there exists any literature that would tell us the statistical probability of two different marks made by two different drills being either the same or different is that there is no such study that has been done; is that correct?

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

Q. Excuse me, sir. I'm talking about spinning drill bits. Is the answer to my question that no such study exists?

A. Specifically to this singular tool, no.

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

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

THE COURT: Sustained.

MR. TIGAR: I'm sorry, your Honor. I thought that was

a preliminary matter. Well, then, may I approach, your Honor?

THE COURT: Yes you may.

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

(At the bench:)

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

(In open court:)

THE COURT: You may proceed, Miss Wilkinson.

MS. WILKINSON: Thank you, your Honor.

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

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

DIRECT EXAMINATION CONTINUED

BY MS. WILKINSON:

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

A. Yes.

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

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

THE COURT: Overruled.

BY MS. WILKINSON:

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

MS. WILKINSON: Could you hold on one second.

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

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

BY MS. WILKINSON:

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

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

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

A. When I performed comparative analysis -- By the way, I have now shifted from the use of the stereomicroscope to using a tool that's referred to as a "forensic ballistic comparison microscope." That is a type of tool that's essentially two microscopes, different optic systems, so you can vary the magnifications that combines the image together in a bridge so that you're viewing it in the same fashion we have in front of us. Hairline splits to center; on one side you can place your questioned specimen, on the opposite side you can place your test; and you can vary the lighting and the angles and everything else to make the markings more visible.

Q. So does this photo show some but not all of what you saw under the microscope?

A. That is correct.

Q. Now, you've showed us the marks there on the left side. And could you start down here at the bottom and tell us what

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

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

At the same time, you will have areas that are probably illuminated and then you have others that are not. As an example; right down here, there's one striation that corresponds to one on the other side.

As we continue up, we have areas of high points, troughs, high points, troughs, other troughs, ridges. All these are what we refer to as "consecutive patterns." You can have peaks, you can have ridges, you can have valleys. Any one of these peaks can be rounded. They have a three-dimensional nature. For something to be in congruence, this has to all agree. As we go and we string more and more of these together, what we refer to as consecutive matching pairs, it becomes more significant.

MR. TIGAR: Objection to significance, your Honor.

THE COURT: Well, significant to the comparison?

THE WITNESS: Yes.

THE COURT: All right. Overruled.

BY MS. WILKINSON:

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

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

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you're seeing some of these striations where my pen is going; is that correct?

A. That's correct.

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

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

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

A. That was just a small piece of metal that was -- that was still left in there and was something else that was kind of like attached in the view of the field.

Q. Now, let's go over to the right side, to the test impressions. Can you compare some of the test impressions on the right with the tool mark impressions on the left?

A. All these markings -- I hit that again -- just as they come in to this hairline, the troughs, the high spots, this is what we're looking to find on the other side. And again, what we're looking to see is a congruence of these -- when I say "congruence," I mean looking here and finding it on the other side, looking here and finding it on the other side.

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

A. Yes, I do.

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

striations up here on the right; correct?

A. That is correct.

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

A. That is correct.

Q. Does that change the significance of the similarities that you've identified below?

A. What we have here is we have an area that reproduced. We can give it some weight. Now we have an area here where the photo doesn't display it and it was there, or maybe it wasn't there at all. You know, that's weighed, that's considered; but it has to be judged against what we've seen previously.

Q. Now, did you look under the microscope and look around not just at what we see in this photo but at other similarities in the deep impression?

A. Yes. There were other areas down in there that had typical areas like this. This was an area. You can't see it, but this was actually like down in here. This was one of those areas where it almost punched through and split. So when we see a dark area in here -- and there are some other dark areas -- what we're talking about is either voids or areas we're not seeing in the photo because we have a light problem.

Q. Now, keeping that --

A. But there are other areas similar to this and the other areas around that hole.

Q. Mr. Krivosta, keeping that in mind, does that change what you believe are the similarities that you see here that you've

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identified for the jury?

A. I looked at the areas, and I weighed them in addition. But this was part of what I considered, was what I saw right here.

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

A. Yes.

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

A. Yes.

Q. Did you see other patterns of reproducibility in the deep impression of the lock?

A. Yes, I did.

Q. If you could clear your screen, please.

Did you also look at the shallow impression to see if you saw any striations for comparison?

A. Yes, I did.

Q. All right. Let me show you Government's Exhibit 1841 again. Take the jury to the shallow impression and tell them what you saw.

A. I had reflected in my notes, as I had previously marked on this, there were two areas I had looked at --

Q. Can I zoom that in for you a little bit, so that it's easier to see? Does that help?

A. Okay. Yes.

... Okay. Yes.

Q. Go ahead.

A. This area -- meaning this whole area -- I referred to in my notes that I kept on this comparison as Area A. This area was

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Area B. When I did my comparisons against a test surface, I indicated to you that -- and what we discussed is that there were two cutting surfaces on that. The one that I indicated had the red mark on the test, that I had also marked in my notes as Area A, that I performed comparisons between this and searching for areas of similarity.

Q. Did you find them?

A. Yes, I did.

Q. And did you find them in Section B that you've identified on this photograph?

A. Then what I had to do was shift to the other part of the cutting of that test impression, that was the result of the other cutting edge. And those I compared against this area as B and again found similarities.

Q. And did you -- did you have sufficient time to look at all the striations that you could under the microscope in both the deep and the shallow impression -- impressions?

A. I had an adequate amount of time, yes.

Q. And did you see similarities in all those sections?

A. Yes, I did.

Q. And they were all similar to the test impression that was done, Government's Exhibit 244 that you examined?

A. There were areas that were similar. There were also what we refer to as some incongruences.

Q. And tell us why you would see incongruences. Excuse me.

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

The finer stuff would break off, possibly recontinue, possibly break off. So what became necessary when I performed my comparisons in this area is I would look for a spot using the bulk of the stuff to put myself into what's referred to as phase. I would look for small areas of reproducibility; and then there would be an incongruence, a dissimilarity. So what I would now do is I can shift using other bold stuff, looking for other areas. And I would find pattern -- areas of striations that also were similar or in congruence.

Now, what I do is rather than be able to take, like that one photo showed of everything in a nice line, in this case what you have to do is you have to make a mental image. You have to look at something that you think is not just by random chance, because the pattern is complex enough, follow to another area and find something else in another area and

mentally bring these things together.

Q. Because you have dissimilarities in between. Is that what you're talking about?

A. That's correct.

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

George Krivosta - Direct

in the shallow impression?

A. The fact that the drill-end surface wasn't held perfectly as nice as that drill-bit test impression or as well as the deep hole where the drill was being secured by the sides of the hole.

Q. So when you look at Government's Exhibit 1843, which -- can you clear your pen there for a moment, please -- which is the photo of the test impression, you see these perfect circular patterns -- is that right -- and striations?

A. Yes.

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

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

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

A. That's correct.

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

George Krivosta - Direct

A. Yes.

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

A. It was not.

MS. WILKINSON: No further questions, your Honor.

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

MR. TIGAR: Thank you.

THE COURT: You may step down.

Members of the jury, we'll, as usual practice, take our 20-minute recess, during which, of course, as usual, you are cautioned to avoid discussion of anything that you're hearing in this case and anything about the case and avoid anything outside of our evidence so that you can follow the obligation of your oath and decide according to the law and the evidence and the instructions.

You're excused now, 20 minutes.

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

THE COURT: Sit down.

Recess, 20 minutes.

(Recess at 10:30 a.m.)

(Reconvened at 10:50 a.m.)

THE COURT: Be seated, please.

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

THE COURT: Resume the stand, please.

Mr. Tigar, you may inquire.

George Krivosta - Cross

CROSS-EXAMINATION

BY MR. TIGAR:

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

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

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

A. They contacted me and asked me about my availability.

Q. Now, before testifying in this case, you had testified in a United States District Court before; is that correct?

A. That is correct.

Q. How many times?

A. One occasion.

Q. And where was that?

A. In the Eastern District of New York.

Q. Brooklyn, or Long Island?

A. Long Island.

Q. What was the subject of that testimony?

A. It was a civil case, as I recall. It involved the death of an individual with the Suffolk County Police Department being involved.

Q. Now, in your work in Suffolk County, you teach people how to respond to crime scenes, don't you?

A. That is correct.

George Krivosta - Cross

Q. And do you attend crime scenes yourself?

A. I have on occasion. Currently, I do not.

Q. Now, when retrieving physical evidence at a crime scene, you know it is important to mark it at the time it is retrieved; is that correct?

A. The general consensus is either to mark the evidence or to place the evidence into a sealed container and mark the sealed container.

Q. And between the time it is retrieved at the crime scene and the time it is tested, it is important to keep it under conditions that make sure it cannot be altered in some way. Is that correct?

A. That is correct.

Q. And is it important when retrieving evidence at a crime scene that may be suitable for taking fingerprint impressions to make sure that the fingerprints are not disturbed?

A. That is correct.

A. That is correct.

Q. In retrieving a tool at a crime scene, is it important to handle the tool in such a way that any foreign objects or matter that might be on the tool is preserved?

A. That is correct.

Q. Specifically with respect to a drill -- you have the drill in front of you, don't you, sir?

A. Yes.

Q. If someone uses a drill in a vertical position -- that is

George Krivosta - Cross

drilling upwards -- it's likely that the thing that's being drilled, shavings or chips of it are going to trickle down onto the drill and into the chuck. Is that right?

A. I guess that might be a possibility.

Q. And would you as a crime scene person want to make sure that if any such evidence existed it was collected and preserved?

A. I would make every attempt to preserve the evidence.

Q. Now, in this case, sir, do you know what happened to the lock that you examined between the time it was recovered at a crime scene and the time it was first examined by the FBI?

A. I do not.

Q. You did not take your own pictures of the lock, did you, sir?

A. I did not.

Q. And with respect to the drill bit, do you know how long a period of time elapsed between the offense that was committed and the recovery of the drill bit?

A. I do not.

Q. You testified earlier that each time a tool is used, such -- well, each time a drill bit is used to cut something, there is a likelihood that the drill bit will be altered or changed in some way; is that right?

A. Yes, it can.

Q. And is that why -- is that one reason why it is significant

George Krivosta - Cross

to know the amount of time between the offense and the time that the drill bit is recovered and examined?

A. One would want to attempt to safeguard the tool to keep the tool from being changed from its condition so that the possibility of an association might be made. But, you know, going in the other direction starts approaching the mathematically improbable. To change it into something --

Q. Now, you say "the mathematically improbable." Are you referring to any study of the statistical probability involved in identifying a drill bit with a mark that the drill bit has made?

A. There were a number of studies relative to rare chance, which is what this would be talking about. To drill bits specifically as I stated before, there are none.

Q. All right.

A. But this would still be just a rare chance.
Q. So we're talking chance; right?
A. Yes.
Q. We're talking coincidence; right?
A. Yes.
Q. Now, when we're talking about coincidence, are we -- would you be concerned to know whether the lock had been dropped by somebody before you looked at it?
A. Once again, if the lock were dropped, it could change what's there. But to change it into something that we might

George Krivosta - Cross

find in the future and associate would have to be purely by rare chance.
Q. But you're saying there could be some change made in it from being dropped?
A. Yes.
Q. Do you know whether this lock was dropped between the time you looked at -- the time it was seized at a crime scene and the time you looked at it?
A. I do not know.
Q. Now, you spoke about the cutting edges of a drill bit. In terms of a drill bit, what are flutes?
A. Flutes are the grooves that are cut in the drill bit in a spiral fashion that allow the chips of metal to come out.
Q. I'm holding up something from Government's 151A. The flutes are these things that are in a spiral form on the drill-bit stock; is that right?
A. That's correct.
Q. Now, the edges of the flutes are sharpened, aren't they?
A. They are trued up and uniform, and they have some sharpness, yes.
Q. So that if I'm drilling something, say a piece of metal that is an inch or so thick, and I wiggle my drill back and forth at high speed, the flutes will cut into the sides of the hole I'm making; correct?
A. That is correct.

George Krivosta - Cross

Q. So that when you told us that a deep hole that is cut in metal is more likely to hold the drill, did you take account of the fact that someone drilling such a hole might be wiggling the drill?
A. Absolutely. If this were the drill and we wiggled it, we could widen up this area here.
The edge of the bit right down here is not going to wiggle. That's still going to be supported.
Q. Showing you now, sir, what has been received as Government's Exhibit 1842, is this a picture of a shallow hole, or a deep hole? Do you remember?
A. This appears to be the -- the bottom, the photo -- one of the photos from the bottom of the deep hole.

Q. All right. And would you agree with me, sir, that these marks here, these striations are not circular; that they deviate from being circular?

A. The -- they have that appearance of being deviated, but that same kind of deviation could be -- or appearance of deviation could be caused by a bending of the stock of that metal as it was separating out. If that would now bend, it would give the appearance of a bend. Does not necessarily mean that that wasn't spinning in a nice, true circular pattern at that point.

Q. Of course. That is to say, a drill always is going to spin circular; right? That is to say, it does drill when you push

George Krivosta - Cross

the button; it makes a nice, clean circle, doesn't it?

A. It spins, yes.

Q. Right. It spins. Now, the question is what -- The marks that are made are determined by the relationship between the drill that's spinning and the stock that's being cut; right?

A. Can you -- one more time.

Q. Yes. The marks that are made by the drill are determined by the relationship between the spinning drill and what's being cut; correct?

A. The cutting edge of that drill bit is what makes the marks.

Q. That's right. And the kind of mark is determined by the relationship.

A. That's right. I said before that if there is movement and there is play, that can vary somewhat. At the same time, if there is no movement, it can be much more uniform.

Q. Now, do you know the circumstances under which the lock that was drilled was drilled?

A. No.

Q. You don't know where the lock was, whether it was hanging underneath a metal shroud, upside down, right side up, or sideways; right?

A. I do not.

Q. Now, you testified on direct examination that as you were looking at this shallow hole you were thinking about phase. Is that correct?

George Krivosta - Cross

A. Yes. I used that term "phase."

Q. The term "phase" is a term used in firearms identification, isn't it, sir?

A. Yes.

Q. Do you know of any published study anywhere by a reputable scientific person that uses the term "phase" in connection with the analysis of a spinning drill bit?

A. No.

Q. Now, when you examined the drill bit or when you examined what you testified about here today, you did that in Cheyenne, Wyoming; is that correct?

A. That is correct.

A. That is correct.

Q. And you drove from Denver to Cheyenne with Agent Cadigan, did you not?

A. Yes, I did.

Q. Now, in driving to Cheyenne with Agent Cadigan, did you discuss with him what he had found when he looked at these things?

A. No.

Q. Did Agent Cadigan accompany you to the laboratory?

A. Yes, he did.

Q. Did Agent Cadigan tell you anything that he had found when looking at these things?

A. During the examinations, I was initially working on the shallow end, and he was encouraging me to go to the deep part

George Krivosta - Cross

of the hole. But I wasn't satisfied that I was completed -- my examinations at the shallow end.

Q. Did he tell you why he thought you should be working on the deeper part of the hole instead of the shallow part?

A. He felt that the -- the markings down on the -- on the deep part of the hole were the ones that he had associated, and he was encouraging me to go there.

From what I was observing at the shallow end, I felt I still had enough to work on the shallow end, and I wanted to devote more time to it.

Q. So you were willing to go further in finding similarities than FBI Agent Cadigan; is that right?

A. I don't know what you call "further." I was asked to do an examination. I did it according to the criteria that I normally follow, and that's how I was going to proceed.

Q. My question is: Isn't it your understanding, sir, that you were going to come to a different conclusion than Agent Cadigan?

MS. WILKINSON: Objection, your Honor.

THE COURT: Sustained.

BY MR. TIGAR:

Q. When you do examinations in a laboratory, is it relevant to you to know what other examiners have concluded looking at the same thing?

A. I was aware that Agent Cadigan --

George Krivosta - Cross

THE COURT: Answer the question.

THE WITNESS: Okay. Can you just give me the question, please.

BY MR. TIGAR:

Q. Yes, sir. When you do examinations, is it relevant to you to know what examiners have concluded with respect to the same thing?

A. Yes, it is.

Q. And in fact, sir, in your prior experience testifying, you have been called in to testify to additional or different

conclusions than those reached by official law enforcement people in the jurisdiction where you're testifying?

MS. WILKINSON: Objection, your Honor, based on the prior ruling. Conclusions.

THE COURT: Well, overruled.

BY MR. TIGAR:

Q. Just yes or no, sir.

A. One more time on the question.

Q. Yes, sir. In your background, sir, isn't it the fact that you have been retained to testify in cases -- in cases where you're going to give an opinion that goes beyond or is different from the opinion given by the law enforcement people in the jurisdiction where you're testifying?

A. Yes, I have.

Q. And in fact, you did that in a New Jersey case, didn't you,

George Krivosta - Cross

sir?

A. In a New Jersey case and in a New York case, also.

Q. All right. Now, is this a case in which your finding of similarities, your understanding, is different from the finding of similarities and differences that Agent Cadigan thought should be pointed out?

A. We are both in agreement on what's in the -- the deep hole.

Q. But you are not in agreement on what's in the shallow hole; right?

A. I believe that may be the case, yes.

Q. All right. Now, did you measure the drill bit?

A. I did not.

Q. Do you know what the diameter of the drill bit is?

A. I believe it was a quarter-inch drill bit.

Q. You don't know.

A. No.

Q. Did you take measurements off it? Did you measure the hole in the lock?

A. I did not.

Q. Do you have an idea what the size of the hole is?

A. It should be for what that drill bit is.

Q. Oh. Is it your testimony that the hole in the lock should be identical to the diameter of the drill bit?

A. Not identical, because you can have differences. I did not measure the hole. My goal was to do a microscopic comparison

George Krivosta - Cross

of one item to another item.

Q. Did you do your own test impression in lead?

A. I did not.

Q. You testified that it is important to know what material the test impression is used in; correct? Or done in?

A. Yes, it can be important, yes.

Q. Well, you said that you want to make sure that the test impression material is soft; correct?

A. Right. You always start with the softest item first so as not to change the tool.

Q. And do you know whether the lead in which the test impression was made contained antimony or recycled products or anything that would have cautioned it to be hard?

A. I do not.

Q. You'd expect the FBI to get the right kind of lead; right?

A. Relative to the hardness of metals, even if we put a little hardener in it, lead would still be considered soft.

Q. My question is: You'd expect the FBI to get the right kind of lead, wouldn't you?

A. Yes.

Q. Did you know if you were going to make that test impression in lead with respect to compare with -- you said you'd use a drill press; correct?

A. Yes.

Q. Would you run the -- as you lifted the drill bit up from

George Krivosta - Cross

the test-impression material, would you leave the drill press spinning, or would you let it stop?

A. It would be spinning.

Q. Spinning. And do you know whether or not when the drill was -- whatever drill bit was used to drill this lock was withdrawn from the lock -- do you know whether it was spinning at the time it was withdrawn from the lock or if it had stopped down there?

A. I wouldn't know.

Q. You testified, sir, about your experience in ballistics; is that correct?

A. Yes.

Q. Now, when a Smith & Wesson revolver with a 4-inch barrel is fired, at what -- do you know the speed of rotation of the bullet as it leaves the barrel?

A. They're spinning very fast. You know, depending on what load we pick, if we talk about, say, something coming up, to keep the mathematics simple, a thousand feet per second, which is reasonable for a .38 Special Smith & Wesson -- and I think that the twists are like 1 in 15 or 1 in 18, which is a little tough mathematically. So we'd be talking about, just to make it 1 in 12, to keep the mathematics simple -- we're talking about a thousand rotations a second. When we talk about drill terminology, we're talking about rotations a minute, so we have to rotate by another 60. So we're talking about 60,000

George Krivosta - Cross

rotations a minute, where a drill is spinning at a fraction of that. They're only spinning at about, say, 3,000 rotations a minute.

Q. Exactly, sir. And the bullet is also moving a good deal faster than your average homeowner can punch a hole with a drill. Right?

A. That's correct.

Q. All right. Now, as the bullet moves out of the barrel of the gun, it is twisting. Is that correct? Is that your understanding?

A. It's spinning.

Q. It's turning, spinning?

A. But it should be following the rifling.

Q. It's spinning and following the rifling.

A. Yes.

MS. WILKINSON: Your Honor, I'm going to object to Mr. Tigar agreeing with the --

THE COURT: Yes. Withhold your comments, please.

MR. TIGAR: Yes, your Honor.

BY MR. TIGAR:

Q. As the bullet spins inside the barrel, how many rotations will it make between the time the firearm is discharged and the time it leaves the front end of the barrel on a 4-inch barrel?

A. It's going to make maybe a third of a rotation.

Q. And the difference is -- between what we're seeing is that

George Krivosta - Cross

your hypothesis is that a spinning drill bit down inside the hole held there for a minute -- Suppose I put a drill down inside a hole and hold it there for a minute and pull the trigger. How many rotations will that drill bit make inside that hole?

A. It's making its rotations. It's cutting away material, and it gets deeper and deeper. When you pull it away, it stops cutting and the hole doesn't get any deeper. So I don't know where this spinning has anything to do with one another.

Q. I didn't ask you about that, sir. I asked you the question -- and it's simple mathematics: How many times is that drill bit going to be turning around in that hole in a minute?

A. It may make 6,000 -- 3,000 revolutions in that minute.

Q. Well, would you look at the drill in front of you, sir. And does it have marked on there what the rated RPM is?

A. My guesstimate of rotations -- this is only 400 rotations a minute.

Q. Yeah. And do you know of any commercial home drill that makes 6,000 -- runs at 6,000 RPM?

A. No.

Q. Okay. So your 6,000 was an estimate and you want to reconsider it?

A. Yeah.

Q. What would you make it now?

George Krivosta - Cross

A. Less --

Q. Pardon?

A. Less than a thousand.

MR. TIGAR: Will your Honor indulge me for a moment?

THE COURT: Yes

THE COURT: Yes.

MR. TIGAR: Nothing further.

THE COURT: Any redirect?

MS. WILKINSON: Yes.

THE COURT: All right.

REDIRECT EXAMINATION

BY MS. WILKINSON:

Q. Mr. Krivosta, during cross-examination, you were asked about the examination you conducted in Cheyenne. Do you remember that?

A. Yes, do I.

Q. Mr. Cadigan was present?

A. Yes, he was.

Q. Was there also a member of the defense team that was present observing everything that you did?

A. Yes, there was.

Q. Now, you told Mr. Tigar that you and Mr. Cadigan had discussed what you were seeing at the time you were observing the lock through the microscope. Is that right?

A. Yes.

Q. And you were focusing at that time on the shallow

George Krivosta - Redirect

impression, and he was asking you to look at the deeper impression; is that right?

A. Yes.

Q. Now, you -- I believe defense counsel asked you whether there was some disagreement over your conclusions. Is that right?

A. Yes, he did.

Q. Now, do you understand what the disagreement was between the two of you?

A. The -- I thought that he had gone "inconclusive" on the -- the shallower impression. That's not to say that it had not been the result of the drill, but he had not made a determination.

And in actuality, at one point I had focused the scope and I leaned out of the way and I asked him to lean over my shoulder and to look at what I had, and I had shown him some of what I was looking at.

Q. So he was more conservative on that shallow impression; is that right?

A. Yes.

Q. Now, as to the deep impression, did you agree on your findings, both you and Mr. Cadigan, of the similarities that you saw in the deep impression?

A. Without doubt.

Q. Have you described that comparison picture before that

George Krivosta - Redirect

you've seen, Government's Exhibit 157, which shows the similarities?

This is the photograph Mr. Cadigan put together.

Right?

A. Yes.

Q. How did you describe that photograph?

A. As textbook picture perfect.

Q. Now, you were also asked about whether you have been hired on certain occasions to give different opinions from others.

Is that right?

A. Yes.

Q. Now, have you come to an opinion or done a review of this case prior to when the Government asked you about its findings?

MR. TIGAR: Object to that, your Honor.

THE COURT: Sustained.

BY MS. WILKINSON:

Q. Mr. Krivosta, have you changed your opinion or your belief about the similarities of this tool mark and tool mark impression in any way since you first viewed these photographs?

A. I have not.

Q. And does it matter whether the Government hires you, or whether defense hires you?

A. It does not.

MS. WILKINSON: No further questions.

THE COURT: Any redirect (sic)?

George Krivosta - Redirect

MR. TIGAR: Yes, your Honor, quickly.

RE-CROSS-EXAMINATION

BY MR. TIGAR:

Q. Textbook picture perfect. Is that what you said?

A. Yes.

Q. What textbook?

A. If I was going to write one and put this chapter in it, this would be an excellent picture to use.

Q. Thank you. But is there in the scientific community a textbook in which the methodology that you used in finding these similarities is validated according to acceptable scientific principles?

MS. WILKINSON: Objection, your Honor.

THE COURT: Overruled.

THE WITNESS: I believe if you review the criteria in the published data that's within the --

THE COURT: Answer the question, will you, please.

THE WITNESS: Yes, your Honor.

There are journals that do support my methodology.

BY MR. TIGAR:

Q. Is there a -- my question was is there a textbook that validates the finding of these similarities according to acceptable scientific statistical principles?

A. Textbook, I don't know of one specifically.

MR. TIGAR: Thank you.

George Krivosta - Redirect

REDIRECT EXAMINATION

BY MS. WILKINSON:

Q. Mr. Krivosta, do you consider the drill bit -- the substantive drill-bit comparison to be part of the tool marks comparisons that you do?

MR. TIGAR: Objection. Improper redirect.

THE COURT: Sustained.

BY MS. WILKINSON:

Q. Mr. Krivosta, you said that you told Mr. Tigar that there was no literature or no book that you're aware of to support the scientific comparisons used in drill-bit comparison. Is that right?

A. Yes.

Q. Do you have more general scientific study or statistical data that you use in tool marks to support your comparison?

A. Yes.

Q. And what do you use to make that type -- to support your methodology?

A. There are a number of articles and journals that have been published throughout the year, many of them appearing in the Association of Firearm/Tool Mark Examiners Journal, other in the Journal of Forensic Sciences.

As an example, the idea of finding areas of congruence and how significant they are, a fellow by the name of Biasotti did his master's thesis and published this as early as -- I

George Krivosta - Redirect

believe he started his thesis in like 1955 and published in several journals from '57 through '59. And this is very well-known in the field.

Q. Now, when we move to the actual drill bit that leaves the tool mark in a padlock or some other surface, is the impression created when the drill bit stops?

A. It's being created as the drill bit is cutting, and it's going to stop when that drill bit breaks contact. As long as the drill bit is turning, it's going to keep on cutting, creating new markings.

The old markings come out as the chips.

Q. So with Government's Exhibit 126, I believe it is, the padlock: If someone had drilled all the way through and not stopped, would you find a tool mark?

A. If they had gone just a little bit further, they would have eliminated the possibility of finding tool marks.

MS. WILKINSON: No further questions.

RE-CROSS-EXAMINATION

BY MR. TIGAR:

Q. Are you familiar with Dr. -- with -- excuse me -- Mr. Biasotti is now deceased. Is that correct?

A. To be -- I'm not even aware of that. I couldn't recall.

Q. Yes. Are you familiar with the chapter on the tool mark identification and you -- co-authored by Mr. Alfred Biasotti

and Mr. John Murdock in the latest edition of the treatise

George Krivosta - Recross

Modern Scientific Evidence?

A. Can I see the cover, please.

Q. Have you read that?

A. I don't think I've had the opportunity to read that yet.

MR. TIGAR: All right. Nothing further. Thank you.

MS. WILKINSON: This witness is dismissed, your

Honor.

THE COURT: Are you agreed to dismiss the witness?

MR. TIGAR: Yes, your Honor, we agree.

THE COURT: You may step down. You're excused.

THE WITNESS: Have a good day, your Honor.

THE COURT: Next, please.

MR. MACKEY: Your Honor, we would call Special Agent
Larry Tongate.

THE COURT: Please come forward, Mr. Tongate.

(Larry Tongate affirmed.)

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

Would you state your full name for the record and
spell your last name.

THE WITNESS: It's Larry G. Tongate, T-O-N-G-A-T-E.

THE COURT: Proceed, Ms. Wilkinson.

MS. WILKINSON: Thank you, your Honor.

DIRECT EXAMINATION

BY MS. WILKINSON:

Q. Mr. Tongate, tell the jury what you do for a living.

A. I'm a special agent with the FBI.

Larry Tongate - Direct

Q. How long have you been an agent?

A. A little over 24 years.

Q. Where are you currently assigned?

A. Kansas City, Missouri.

Q. Was that your assignment back in April of 1995?

A. Yes, it was.

Q. Now, after the bombing occurred on April 19, 1995, were you
assigned to participate in the investigation in Kansas?

A. Yes, I was.

Q. Did you continue to participate in -- on April 22, 1995?

A. Yes, I did.

Q. As part of your investigatory duties, were you assigned to
participate in the search of Mr. Nichols' home on April 22,
1995?

A. Yes, I did.

Q. Were you searching that home pursuant to the search warrant
that other witnesses have previously described?

A. That's correct.

Q. And did you review that search warrant prior to entering
Mr. Nichols' house?

A. Yes, I did.

Q. Now, did you personally seize some of the items during the

search?

A. Yes, I did.

Q. Before you began the search, were you told by other agents

Larry Tongate - Direct

that Mr. Nichols had told agents the night before that there were no booby traps in his house?

A. No.

Q. Did you find any booby traps in his house?

A. I did not.

Q. Were you told that Mr. Nichols had told agents the night before that he had no explosives in his house?

A. No.

Q. Did you find explosives in his house?

A. Yes.

Q. Where did you find explosives in Mr. Nichols' house?

A. In the -- in a box in the basement storage area of 109 South 2nd.

Q. And where was the -- was the box open or closed when you found it?

A. It was on the floor, sealed. There were other boxes on top of it.

Q. And did you open that box?

A. Yes, I did.

Q. What did you see when you opened the box?

A. I saw a number of clear plastic bottles in plastic, and laying on top of the bottles were two stacks of Primadet, 60-foot nonelectric blasting caps.

Q. You said you also saw plastic bottles in that box. Were they empty, or were they full?

Larry Tongate - Direct

A. They were empty.

Q. Okay. And what did the Primadet look like that you saw?

A. It was orange in color, and it was wrapped with a cardboard sleeve around it. There were two sections. One group had four, and the other one had one single strand of the 60-foot Primadet.

Q. So there were five coils total in that box?

A. Five coils, that's correct.

Q. What did you do when you saw the Primadet coils in that box?

A. I requested a photographer come take a photograph of the items as I found them.

Q. I take it the photographer did that.

A. He did.

Q. Can you look at your screen and see Government's Exhibit 140. Is that the photograph that you caused to be taken?

A. It is.

Q. And does that show the Primadet as you found it in Mr. Nichols' house?

A. It does.

MS. WILKINSON: Your Honor, we'd offer Government's Exhibit 140.

MR. TIGAR: No objection, your Honor.

THE COURT: 140 received, may be published.

BY MS. WILKINSON:

Larry Tongate - Direct

Q. Now, Mr. Tongate, you're familiar with the black pen up there?

A. Yes.

Q. Can you show the jury and describe for them what they're seeing in this photograph?

A. Well, as I said earlier, there were two areas of the Primadet that I found. One roll consisted of four rolls of the Primadet. The other one just the single strand.

These are the plastic bottles that were in clear plastic that the Primadet was lying on top of.

Q. Now, after you saw these in place and the photographer took this photo, did you ask him to take another photograph?

A. Yes, I did.

Q. What did you ask him to photograph?

A. I removed the Primadet so that he could take a closeup photograph of the Primadet.

Q. All right. Let me show you Government's Exhibit 141. Is this that closeup photograph?

A. Yes, it is.

MS. WILKINSON: Your Honor, we offer 141 into evidence.

MR. TIGAR: No objection, your Honor.

THE COURT: Received.

BY MS. WILKINSON:

Q. Now, tell the jury, on the left side, that is the one coil

Larry Tongate - Direct

of Primadet that you found?

A. Yes, it is.

Q. And on the right side, what are we seeing?

A. That is the four additional rolls of the Primadet.

Q. Now, if I do a closeup, can you tell the jury exactly what's noted on this sleeve?

A. If I may use my glasses.

Q. Sure. Let me try to -- whoops.

MS. WILKINSON: Can we have it displayed, please, to the jury.

THE COURTROOM DEPUTY: There is nothing on the screen.
141?

MS. WILKINSON: Yes.

BY MS. WILKINSON:

Q. All right. Is that a closer shot of the Primadet?

A. Yes, it is.

Q. Can you read that, or would it help if I gave you the

original for the --

A. I have the original, if I may use it.

THE COURT: Yes.

BY MS. WILKINSON:

Q. Let's start at the top where it says, "Primadet." What does it say under "Primadet"?

A. "Nonelectric delay detonators. Not for public sale."

Q. Go over to the right. What does it say there?

Larry Tongate - Direct

A. "60 FT/PI."

Q. And the warning label?

A. "Use of this product by persons who lack adequate training, experience, and supervision may kill or injure. Use only if you are engaged in day-to-day use of explosives in mining and construction and will limit its use to trained, experienced, supervised persons. See instructions on case insert."

Q. Now, over on the side -- and we can't see it too well -- can you tell the jury starting on the left there -- you see that, what it says there?

A. Yes, I can.

Q. What does that say?

A. "Danger, blasting cap." Underneath it says, "Explosive"; and then it says, "Keep from children."

Q. Okay. Now, in this photograph, you told us already that it's marked 60-foot. Is that right?

A. That is correct.

Q. Down there at the bottom, can you circle that other tag there that has a partial number, or we can see part of the number. Excuse me.

What does that say on that tag?

A. It says "8."

Q. Now, is that Primadet that you found in Mr. Nichols' house identical to the Primadet stolen from the Martin Marietta rock quarry in Marion, Kansas?

Larry Tongate - Direct

A. Yes, it is.

Q. During your participation in the search of Mr. Nichols' house, did you also search other rooms?

A. Yes, I did.

Q. Did you search parts of the kitchen?

A. Yes, I did.

Q. All right. Let me show you -- and did you seize certain items from there?

A. Yes, I did.

Q. Let me show you Government's Exhibit 1838, which is not yet in evidence. Do you recognize that?

A. Yes, I do.

Q. And did you seize that item?

A. Yes, I did.

Q. How do you recognize it?

A. First off. I recall the card itself; and I also have the

... these six, I recall the card itself, and I also have the packaging with me here that I placed the item in, and it's my initials and writing on the packaging.

MS. WILKINSON: Your Honor, we'd offer Government's Exhibit 1838.

MR. TIGAR: May I voir dire, your Honor?

THE COURT: You may.

VOIR DIRE EXAMINATION

BY MR. TIGAR:

Q. Agent Tongate, this document that you're looking at: You

Larry Tongate - Voir Dire

found that in the kitchen?

A. Yes.

Q. Was it with some other papers?

A. Yes.

Q. What other papers was it with?

A. There were, as I recall, numerous business cards and other miscellaneous papers.

Q. So just a whole bunch of business cards of which this was one?

A. That's correct.

MR. TIGAR: If your Honor please, we'd like to have all the business cards found at the same location published simultaneously under Rule 106.

THE COURT: Do you have such a photograph?

MS. WILKINSON: Of all? No, we don't, your Honor.

THE COURT: About how many others were there?

THE WITNESS: I'm going to say at least 20, maybe as many as 40 different cards and pieces of paper. That's a guess.

THE COURT: All right.

Well, they don't have such a photograph. I'll permit this one to be displayed in view of the answer.

MS. WILKINSON: Your Honor, I can clarify one other thing with Mr. Tongate.

DIRECT EXAMINATION CONTINUED

Larry Tongate - Direct

BY MS. WILKINSON:

Q. Did you find other items in the cabinet where you found the business cards?

A. Yes, I did.

Q. Did you find Mr. Nichols' passport?

A. Yes, I did.

Q. Do you recall anything else that you found in that area?

A. Receipts. I found a voltage tester and things of that nature and other papers.

Q. Do you remember what type of receipts were found in that area?

A. I believe there was a Wal-Mart receipt. I'm not sure of the date.

MS. WILKINSON: We'd offer 1838 and publish it.

THE COURT: Yes. I've received it over objection, I think, to the fact that it -- the photograph is not in the context of the other cards.

That's my understanding of your position, Mr. Tigar; is that right?

MR. TIGAR: Yes, your Honor.

MS. WILKINSON: I'm offering the actual underlying business card. This is obviously just a display on the computer.

BY MS. WILKINSON:

Q. Mr. Tongate, you have the business card up there, don't

Larry Tongate - Direct

you?

A. Yes, I do.

Q. Tell the jury what this business card says starting from the left?

A. It says, "For the people"; and then on the right side it says, "By the people." And underneath that it says, "Missouri 51st Militia." And in the lower left hand corner, it has "P.O. Box 182, Grain Valley, MO, 64029." And on the lower right it has, "Phone/Fax, (816) 941-3375."

Q. Did you find another business card with this same description, "Missouri 51st Militia," written on a business card?

A. I think it just had "MO" instead of "Missouri" written on it; but yes, I did.

Q. Take a look at Government's Exhibit 1839, which is not yet into evidence. Is this that card?

A. Yes.

Q. Do you see that same marking that you've just described, MO?

A. Yes.

Q. Do you recognize this card?

A. Yes, I do.

Q. Did you seize this and put it in the same plastic wrapping and sealed the way you've described it?

A. Yes, I did.

Larry Tongate - Direct

MS. WILKINSON: Your Honor, we'd offer 1839.

MR. TIGAR: No objection -- Same objection, your Honor, but I assume it's overruled.

THE COURT: Was this card in the same area with the others?

THE WITNESS: Yes, it was, your Honor.

THE COURT: All right. 1839 received.

MS. WILKINSON: May we publish?

THE COURT: Yes.

BY MS. WILKINSON:

Q. Mr. Tongate, start at the top there and tell the jury what they're seeing.

A. It's a business card. At the top it says, "MO 51st Militia." And then underneath, it has the name "Thomas A. Samples, 3005 N.W. Florence, Riverside, MO, 64151."

In the lower left-hand corner, it has, "Independent Computer Consultant," and it gives his address on the web, I believe.

On the right-hand side, it has "Voice" and a telephone number of "816 741-7480" and "Data 816 741-7804."

Q. Now, at the bottom we see a Q number. Is it your understanding that's the Q number Mr. Mills described for us that the laboratory uses for forensic analysis?

A. That's correct.

MS. WILKINSON: We have no other questions, your

Larry Tongate - Direct

Honor.

THE COURT: All right. Mr. Tigar, do you have questions?

MR. TIGAR: Yes.

CROSS-EXAMINATION

BY MR. TIGAR:

Q. Agent Tongate, you went -- you retrieved the items that you've testified about now on what date, sir?

A. On -- it was -- the search began on the 22d and concluded the early morning of the 23d of April.

Q. And you've been sitting here as the case agent; right?

A. Yes.

Q. So we don't have to go over this again, this is the same one that Agent Jasnowski testified about; is that correct?

A. That is correct.

Q. Were you present at the same briefing that Agent Jasnowski testified about?

A. Yes, I was.

Q. At that briefing were you told anything about what Mr. Nichols had told the agents about what was in his house?

A. Not that I recall, no.

Q. So as you started the search, you don't know what conversation he had with those agents about any items in his house; right?

A. I did not.

Larry Tongate - Cross

Q. You did not; and you didn't know whether or not he told them, "Don't mistake one thing for another," and so on?

A. I did not.

Q. Okay. And also, just to make sure, you did not have access to a diagram of the house drawn by Mr. Nichols showing the location of various things?

A. I did not.

Q. Okay. You have seen that diagram since then; right?

A. I have.

Q. Okay. Now, as you -- you described going into the basement

Q. Okay. Now, as you you described going into the basement and you saw that Primadet; right?

A. That's correct.

Q. Okay. Now, you know that Primadet is a product made by a commercial manufacturer; correct?

A. Yes.

Q. And prior to the 22d, had you ever had occasion to use Primadet?

A. I had not.

Q. All right. Had you ever seen anybody use it?

A. No.

Q. Did you know what sorts of things it was used for?

A. No.

Q. And you've heard Mr. Rydlund testify about the sorts of things Primadet could be used for?

A. I did.

Larry Tongate - Cross

Q. For instance, on a farm for ditching?

A. I heard the ditching, yes.

Q. But you don't have any personal knowledge as to whether -- as to how that's used or under what circumstances; right?

A. I do not.

Q. Now, you also talked about some plastic bottles; right?

A. That's correct.

Q. Did you also find some labels for the plastic bottles?

A. I don't know if I personally found labels. I think there were labels found.

Q. Okay. But as you sit there today, do you remember what the contents of the labels were?

A. The contents of the labels?

Q. What it said on the labels.

A. Are you referring -- may I ask what he's referring to?

Q. Did you see some labels that obviously would fit those plastic bottles?

A. Yes.

Q. And do you remember the exact text of what those labels were?

A. If you're referring to plant food, I do recall such labels that had "plant food" and also the word "explosives" on them.

Q. Okay. And those were labels that described, as you understood -- described small quantities of ammonium nitrate that could be put into the plastic bottles; is that right?

Larry Tongate - Cross

A. That's correct.

Q. And the label that said "explosive" was just word for word the same label you would find if you went to the feed store and bought a sack of ammonium nitrate; right?

A. I haven't compared it, but I think it's probably similar.

Q. Yeah. Okay. You don't remember any differences?

A. No.

Q. Now, you told us about two business cards that you found;

right? Have you ever been to a gun show?

A. Maybe many years ago. Not recently, no.

Q. Now, have you investigated gun shows?

A. No.

Q. Do you know who attends gun shows?

A. Many people.

Q. Right. And do some of the people who attend gun shows -- are they members of militias?

A. I think so, yes.

Q. The card you showed us is something called the Missouri Militia?

A. That's correct.

Q. You're the case agent?

A. Yes.

Q. Are we going to hear any evidence about the Missouri Militia in this case other than this business card?

MS. WILKINSON: Objection, your Honor.

Larry Tongate - Cross

THE COURT: Overruled.

THE WITNESS: Not that I'm aware of.

BY MR. TIGAR:

Q. So it's just a business card; right?

A. That's correct.

Q. Why did you pick that out of the other 40 that were in there, then?

A. I took the other 40.

Q. I know you took the other 40. Well, who is it that selected that one and only one militia business card to be shown today?

MS. WILKINSON: Objection.

THE COURT: Sustained.

MR. TIGAR: No further questions. Thank you.

THE COURT: Any other questions?

MS. WILKINSON: Yes, your Honor.

REDIRECT EXAMINATION

BY MS. WILKINSON:

Q. You were asked, Mr. Tongate, about the diagram that Mr. Nichols did for the agents, and you've seen that --

A. I have.

Q. -- right? Did Mr. Nichols note anywhere on there the location of the Primadet?

A. He did not.

Q. You were also asked about the labels that could fit the

Larry Tongate - Redirect

plant food. You found some of those -- right -- or someone did on the search?

A. That's correct.

Q. Do you remember anything else that was on the labels or on the instruction documents that went along with those labels?

MR. TIGAR: Your Honor, I'm going to object to that

unless the label is in evidence.

THE COURT: Sustained.

BY MS. WILKINSON:

Q. You were also asked about gun shows and who attends gun shows. Is that right?

A. That's correct.

Q. Do you know anyone who sells plant food at gun shows?

MR. TIGAR: Objection, your Honor, unless personal knowledge is shown.

THE COURT: Sustained.

MS. WILKINSON: No further questions, your Honor.

THE COURT: You may step down.

Next, please.

MR. MACKEY: Your Honor, we would call Brian Espe.

THE COURT: Okay.

THE COURTROOM DEPUTY: Raise your right hand, please.

(Brian Espe affirmed.)

THE COURTROOM DEPUTY: Would you have a seat, please. Would you state your full name for the record and

Larry Tongate - Redirect

spell your last name.

THE WITNESS: Brian Espe, E-S-P-E.

THE COURTROOM DEPUTY: Thank you.

THE COURT: Mr. Orenstein.

MR. ORENSTEIN: Thank you, your Honor.

DIRECT EXAMINATION

BY MR. ORENSTEIN:

Q. Good morning, Mr. Espe.

A. Good morning.

Q. Would you tell the jury where you live.

A. Oklahoma City.

Q. And how old are you, sir?

A. 60 years old.

Q. Are you married?

A. Yes.

Q. Do you have any children?

A. Five.

Q. And how long have you been married, and how old are your children?

A. Been married almost 43 years, and children range in age from 42 to 35.

Q. Where were you born and raised, sir?

A. I was born outside of Chicago, Illinois, and raised there.

Q. And where did you go to school?

A. Initially, I went to -- you mean further education?

Brian Espe - Direct

Q. Yes. You graduated high school in the Chicago area?

A. Right. Right.

Q. After that, what did you do?

A. I spent two years in college in North Dakota and four years in veterinary school in Oklahoma and graduated in 1961 with a

in veterinary school in Oklahoma and graduated in '61 with a veterinary degree.

Q. And after you completed your degree, what did you do for a living?

A. I went to work for U.S. Department of Agriculture.

Q. And what did you do there, and how long did you stay?

A. I started as a field veterinarian in Connecticut; and then after two years of that, I was assigned to University of Wisconsin, where I received a master's degree in epidemiology. And then in '67, I was transferred to Oklahoma.

Q. And still with the Department of Agriculture?

A. Yes.

Q. How long did you stay with the Department?

A. I stayed with the Department at that time from '67 through 1982 and left the Department for about six years and came back with the Department in 1989.

Q. What were you doing in the meantime?

A. Worked at a racetrack, did some private consulting, worked for the Oklahoma State University.

Q. All in the field of veterinary medicine?

A. Yes.

Brian Espe - Direct

Q. You said that you came back to the Department --

A. Yes.

Q. -- at some point. When was that?

A. In October of 1989.

Q. And have you been employed by the Department of Agriculture since then?

A. Yes.

Q. Where were you assigned once you returned in 1989?

A. The Alfred P. Murrah Building.

Q. Now, could you describe for the ladies and gentlemen of the jury the services that the Department of Agriculture provided in Oklahoma City at the Murrah Building?

A. All right. Generally, we work cooperatively with the state Department of Agriculture in eradicating animal diseases. A number of those diseases are those that affect both animals and humans. Also, we're involved in the export of animals that in order for animals to be exported from the U.S., they have -- all test results and everything need to be certified by a USDA veterinarian; and we did that for the State of Oklahoma.

Q. Now, when you say you're involved in the export process, the USDA is not itself doing the exporting; correct?

A. No, these are private individuals doing the exporting and such.

Q. Local ranchers and such?

A. Local ranchers. Even pet owners are required to get

Brian Espe - Direct

certification on their animals.

Q. Now, you said that you worked -- you, yourself, worked in the Murrah Building?

A. Yes.

Q. Let me ask you how many employees did the Department of Agriculture have in the Murrah Building in April of 1995, people who were actually stationed there?

A. In looking back, there were 13 that actually -- their duty station was considered the Alfred P. Murrah Federal Building.

Q. Were there others who were employed by the Department of Agriculture in the state of Oklahoma who occasionally also went to the Murrah Building?

A. Right. We had supplied desk space for some occasionally whose main duties were in the field but a desk space if they needed to be in the office for a short period of time that they had access to.

Q. So 13 there regularly, and then others would come in on occasion?

A. Correct.

Q. What was your position in April of 1995?

A. I was the area veterinarian in charge for the USDA veterinary services.

Q. Did you supervise others in that position?

A. Yes.

Q. Now, what floor within the Murrah Building did the

Brian Espe - Direct

Department of Agriculture occupy?

A. The fifth floor.

MR. ORENSTEIN: If I might have Government's Exhibit 952 displayed, the fifth-floor diagram.

BY MR. ORENSTEIN:

Q. Dr. Espe, do you see on the screen before you and before the jury a diagram showing the Department of Agriculture space in the Murrah Building?

A. Yes.

Q. Using the light pen which you have with you, would you demonstrate to the jury the space that you occupied and who was in each of the areas?

A. All right. Can't seem to get the pen to where I --

Q. Perhaps -- why don't we do it this way. I'll use the ELMO, and I'll indicate areas and ask you who was working where.

A. All right.

Q. Can you see that well enough?

A. Yes.

Q. Let me start in this area marked "APHIS storage room." Is that part of the Ag --

A. Right. We were the Animal and Plant Health Inspection Service, and that's the acronym for our agency. That was strictly storage for supplies, forms. Some files were stored in that room.

Q. That's this room that I'm indicating with my finger.

Brian Espe - Direct

Now, if you go into the Agriculture Department's

offices on the fifth floor, starting in this office here, who worked there?

A. That was my office.

Q. And the next one?

A. Nancy Roberts, who was area epidemiologist.

Q. And in the next office?

A. That was James Boles' office.

Q. And in this corner area?

A. That was Jack Goldman, who works for USDA but works for Plant Protection, which is another branch of APHIS.

Q. So part of the Department of Agriculture?

A. Part of the Department of Agriculture, yes.

Q. And proceeding down?

A. That was a conference room.

Q. Down below that?

A. That was our smoking room.

Q. Now, over here in this corner there is another room that's --

A. Right. That was the office that we had supplied to regulatory enforcement, which was another APHIS USDA agency; but that office was just used occasionally because they were located at field locations.

Q. So there wasn't someone permanently assigned to that office?

Brian Espe - Direct

A. No.

Q. Now, in this area that doesn't have partition -- well, walls indicated, were there people working in that area?

A. Yes. Yes.

Q. Who worked there?

A. My secretary worked there. You want me to try the pen again and see --

Q. No. You don't have to worry about where within the area. Just tell us who worked --

A. My secretary worked there, my export clerk worked there, my administrative officer worked there, my budget analyst also worked in that area, my purchasing agent worked in that area, and one clerk worked in that area; and then we had another office that we had a veterinary trainee at that time who we supplied her office space in that same general area.

Q. And when you say "office space," did you have partitions to --

A. We had cubicle-type arrangement.

Q. Now, Dr. Espe, let me direct your attention to the morning of April 19, 1995. Would you tell the jury when you arrived at work that day.

A. Approximately 7:30 in the morning.

Q. When you arrived at your office, was anyone already there?

A. Yes.

Q. Who did you see?

Brian Espe - Direct

A. I saw my secretary and my export clerk.

Q. Let me interrupt you, if I may. Would you give us the names of people that you saw?

A. I saw Ada Maloney, my secretary. She sat -- was the first person that you encountered when you came indoors.

I saw James Boles, administrative officer.

I saw Adele Higginbottom.

I saw Rheta Long and Olen Bloomer.

Q. Those folks were all there when you arrived in the morning?

A. They were there when I arrived.

Q. Now, later in the morning but before the explosion at the building, did you see anyone else who arrived at your office?

A. Yes.

Q. Who else did you see?

A. Dick Cummins came to my office. We had a matter to discuss, so he came to my office about 8:00.

And Dr. Clark came to the office about 8:30 that morning. She was picking up some material to go to a meeting later that afternoon.

Q. You mentioned someone named Mr. Cummins?

A. Yes.

Q. Was he stationed at the Murrah Building?

A. No, he was -- he was occupying that one office I mentioned that we supplied as a convenience if they needed to be in our office but did not routinely spend time in that office.

Brian Espe - Direct

Q. Now, did you know someone named Carole Khalil who worked for the Department of Agriculture?

A. Yes. I'm sorry. Carole showed up late. We had people on a staggered work schedule, so some people showed up at 7, some at 7:30. Carole was one that showed up at 8.

Q. So you arrived before her, but you saw her that morning?

A. Right.

Q. Now, what did you do once you got to work?

A. After I got a cup of coffee, I went to -- went to my office and made a couple of phone calls to some of my field people and wrote a couple of memos to a couple of field people.

Then I visited -- by this time, Richard Cummins was there, and we went back and sat in the smoking room and had our visit about the information that he was obtaining for me.

Then I went back to my office for a while, did a little bit more paperwork. And by this time, it was approaching quarter of 9, and I had a meeting scheduled at 10:00 that morning over at the state Department of Agriculture, so I had about an hour and 15 minutes before I needed to be over there.

And I was working on a project. I was scheduled to give a lecture to the graduating class at Oklahoma State University Veterinary School on Monday; and I was preparing a slide, a set of slides to use in that presentation. So I went to the conference room there -- it's working now -- to the

Brian Espe - Direct

conference room, because that was the only room that you could turn off the lights and view slides.

Q. And did anyone go in there with you into that conference room?

A. No.

Q. Dr. Espe, after you entered that conference room on the morning of April 19, 1995, did you ever see Jim Boles alive again?

A. No, I did not.

Q. Did you ever see Olen Bloomer alive again?

A. No, I did not.

Q. Did you ever see Adele Higginbottom alive again?

A. No, I did not.

Q. Did you ever see Rheta Long alive again?

A. No, I did not.

Q. Did you ever see Dick Cummins alive again?

A. No, I did not.

Q. Did you ever see Carole Khalil alive again?

A. No, I did not.

Q. And did you ever see Dr. Clark alive again?

A. No.

Q. Tell us what happened after you had entered the conference room.

A. Well, I was there with the lights off putting slides into a carousel, when I felt the building start to shake. And then I

Brian Espe - Direct

remember ceiling tiles and light fixtures falling. And it -- dust and of course the lights were out, so I didn't notice the darkness; but then it got very still, and then I noticed that the room was light. There was light in the room.

Q. And what could you see through that light?

A. I saw that there were no walls on two sides of that conference room and that I could see daylight, I could see across the street to the north.

Q. You could see across 5th Street?

A. Yeah. I could look across 5th Street toward the Journal Record Building.

Q. Just to orient us, you were in this office; is that correct?

A. Yes.

Q. And you could see through what had been --

A. What had been a wall here, and I could also see to the west where there had been a wall.

Q. Now, did you see any of your colleagues at that point?

A. I did. As I got out from under the rubble, I could see the two plant people were in that area that I've marked. Here again, this wall was gone, so I could see into that office. Normally, there was no way to see into that office. And I could see them up and moving around.

Q. And who was that?

A. That was Jack Goldman and Cindy King, his secretary.

Brian Espe - Direct

Q. What did you and Mr. Goldman and Ms. King do at that point?

A. Well, I -- I climbed over the debris and met with them in what was formerly their office; and we -- we checked really to see if -- if we were all right, if any of us were injured.

And

of course, we discussed what had happened.

Q. Were any of you injured?

A. Minor -- minor cuts and bruises.

Q. Were you able to leave the fifth-floor offices at that time?

A. No.

Q. Why not?

A. There was no -- there was no floor between where we were and the nearest stairwell. There was no way to get to that stairwell.

Q. So what did you do?

A. We could look out the south windows.

Q. You're referring to these windows on this side?

A. Those windows there. And we tried to signal to the ground, because by this time we could see emergency personnel coming up from the south side of the building, and so we tried to yell and signal that there were three of us there but we were all

right; that we weren't injured. And we finally did get their attention. And they signaled that they understood, so then we waited to be rescued from the building.

Q. About how long did you wait until you were rescued?

Brian Espe - Direct

A. It was over an hour.

Q. Where were you watching for the -- for the rescue to come from?

A. Primarily to the south, because that's where we could see the -- most of the activity was at the south coming up on the plaza, the south plaza.

Q. You said you waited about an hour. What happened after an hour?

A. After about an hour, we were startled when a fireman came up behind us. We were looking out the south window and came up behind us from the north and said, "I'm here to take you down."

Q. How did the fireman arrive?

A. Came up a ladder.

Q. What did you do at that point?

A. We -- the fireman said, "We'll take the young lady first."

Q. That's Ms. King?

A. That was Cindy King.

I was the one that had a terrible fear of heights, so I said, "I'm going to have problems with this, so why don't you take Jack Goldman next." And they did. Jack went down. The fireman --

Q. Did there come a point where you had to face that fear?

A. Right.

Q. And go down?

A. Yes.

Brian Espe - Direct

Q. How did you do that?

A. I did it rather unconventionally. I came down facing forward away from the ladder, rather than the traditional way of coming down a ladder.

Q. Did the fireman who was there help you out at all?

A. He talked me down every step of the way.

Q. Did you later find out that your descent down that ladder had been captured on videotape?

A. Yes.

Q. And before coming to court, did you take a look at Government's Exhibit 1013, a videotape?

A. Yes.

Q. Does it show you coming down the ladder the morning of April 19?

A. Yes, it does.

MR. ORENSTEIN: Your Honor, the Government offers Government's Exhibit 1013.

MR. TIGAR: No objection, your Honor.

THE COURT: 1013 is received.

MR. ORENSTEIN: And if I may play it, about a minute, maybe less.

THE COURT: Yes.

MR. ORENSTEIN: This will be on the laser disk.

(Exhibit 1013 played.)

BY MR. ORENSTEIN:

Brian Espe - Direct

Q. Doctor, would you click your pen?

A. Pardon?

Q. Thank you.

Dr. Espe, was what we just saw a picture of you slowly coming down the ladder with the fireman's help?

A. Yes.

Q. How many employees of the Department of Agriculture were killed in the bombing that day?

A. Seven.

Q. Now, prior to coming to court, did you examine a chart of the floor plan similar to the one that was on the screen and affix nameplates of the people who died in the bombing showing where they worked?

A. Yes.

MR. ORENSTEIN: And, your Honor, for the record, we're not going to display it now, but we offer Government's Exhibit 952E bearing those nameplates.

MR. TIGAR: Yes, your Honor. No objection.

THE COURT: All right. 952E is received.

THE COURT: All right. 932B is received.

BY MR. ORENSTEIN:

Q. Also before coming to court today, did you take a look at a chart marked Government's Exhibit 1030 containing photographs of your seven colleagues who were killed in the bombing?

A. Yes, I did.

Q. Do those photographs fairly and accurately show the way

Brian Espe - Direct

your colleagues looked before they were killed in the bombing?

A. Yes.

MR. ORENSTEIN: Government offers 1030.

MR. TIGAR: We've made our position known before.

THE COURT: Yes. 1030 is received.

MR. ORENSTEIN: May I ask Agent Tongate to assist in putting up the chart?

THE COURT: Yes.

BY MR. ORENSTEIN:

Q. Dr. Espe, I'd ask you to go through this chart and tell the jury about each of your colleagues that are depicted there, how long they worked for the Agriculture Department and what it is that they did for the Department.

A. Okay. Olen Bloomer was the budget -- our budget analyst; and he had worked for at least 12 years with the Department -- with our department. He had military time before that.

James Boles was my administrative officer, and he was approaching his 30-year career with the government.

Q. What did he do for the Department of Agriculture?

A. He was an administrative officer, took care of all the administrative details, personnel.

Dick Cummins was the senior investigator for regulatory enforcement. He did not work directly for me, but Dick Cummins was a 30-year employee with the Department of Agriculture.

Brian Espe - Direct

Adele Higginbottom was a 17-year-old -- 17-year employee with USDA. She was in charge of purchasing and supplies.

Carole Khalil is my export document examining clerk who examined those -- all those export papers prior to my signing them and certifying to their accuracy.

Q. How long had she worked for the Department?

A. She had worked 29 years for the Department.

Rheta Long was a clerk, did secretarial work and clerk work; and she worked at least 10 years. This was one that was there when I came there in '89. I don't really know exactly -- she had military time prior to coming to work for the USDA.

Peggy Clark was a trainee who had only been with the agency for about a year and a half.

Q. And what field was she training in?

A. She was training to become a field veterinarian for USDA.

Q. And that was part of her official duties there?

-
A. Pardon?
Q. That training was part of her official work for the USDA?
A. Yes, yes.
Q. You told us before that stationed in the Murrah Building there were 13 Department of Agriculture employees. Is that correct?
A. That's correct.
Q. Have you calculated the approximate percentage of your

Brian Espe - Direct

staff that you lost on April 19?
A. No, I really haven't figured the percent. I know it was -- except for my secretary, it was all our administrative staff.
Q. And have you ever tried to calculate the number of years of Department of Agriculture experience that was lost in the bombing on April 19?
A. It was over a hundred years of experience that we lost that day.
Q. After the bombing, did you try and pursue the work of the Department of Agriculture in Oklahoma City?
A. Yes.
Q. Did you have any difficulty in pursuing that work?
A. Yes.
Q. What difficulties did you encounter?
A. Our biggest difficulty came with our export work. Of course, we had lost all our records and the requirements of the various countries. And the other thing was because of the nature of our export work, the exporter was required to come to the federal building to have those papers certified and stamped. People didn't know where we were and didn't know how to find us, so this created quite a problem.
Q. When you're talking about the people, what people are you referring to?
A. I'm talking about anywhere from a commercial exporter of horses, to the European Union, to somebody wanting to take

Brian Espe - Direct

their cat, their pet cat to Japan if they were being transferred to Japan.
Q. Dr. Espe, how long was it until your area, your department within the Department of Agriculture was back up to its full strength?
A. Well, really, it went in stages; but it really wasn't until this last summer that we finally filled all the positions with trained people to conduct our business.
Q. And that's the summer of 1997?
A. Yes.

MR. ORENSTEIN: Thank you, sir. I have nothing further on direct.

THE COURT: Any cross?

MR. TIGAR: Yes, your Honor.

CROSS-EXAMINATION

BY MR. TIGAR:

Q. Dr. Espe, good afternoon, sir.

A. Good afternoon.

Q. My name is Michael Tigar. I'm one of the lawyers appointed to help out Terry Nichols; and I have a very, very few questions, sir.

A. All right. Thank you.

Q. The mission of the USDA is to help the American farmer; is that right?

A. That's correct.

Brian Espe - Cross

Q. And when you started out your career, you were -- you said you were a field veterinarian.

A. That's right.

Q. And over the years, have you worked in county agents' offices?

A. Not -- we never were assigned -- I've worked with county agents, but we never have been assigned to county agent offices.

Q. I understand. So you would work alongside the county agents dealing with whatever problems there were in the county; correct?

A. That's correct.

Q. And all the farmers you met: They knew that the USDA was a source of all sorts of information about how to farm better, produce better, market better, and export better?

A. Correct.

Q. And all of these functions are the ones that you've been talking about today; is that right?

A. That's correct.

Q. And in that process, the USDA would -- would help farmers determine the kind of fertilizer that they ought to put on their land; right?

A. That's correct.

Q. And the USDA would advise about such things as tilling, ditching, trenching, making ponds, and so on; right?

Brian Espe - Cross

A. That's right.

Q. Because even in your area as a veterinarian, you know that the getting -- you know, handling the flow of water on the pasture affects the quality of the grass and therefore the health of the animals. Right?

A. That's right.

Q. Now, on that day, we saw that very -- that picture of you coming down the ladder there. Your focus was on getting down that ladder safely; right?

A. That's correct.

Q. Okay. It was not in looking around to see what else could be seen. Would that be a fair statement?

A. That would be a fair statement.

Q. Okay. And the other day, when you were down off the ladder, you had

Q. Okay. And, sir, when you got down off the ladder, you left the scene; right?

A. Right.

Q. Okay. So you didn't stay around to witness the rescue effort or anything like that?

A. No, I did not.

Q. All right. And when was the next time that you came back to the Murrah Building area after that photograph that we saw there?

A. I believe it was the following Sunday, because I received a call from the FBI that they had found some material -- some USDA badges that they had traced to our agency, and so --

Brian Espe - Cross

Q. I see.

A. -- that was --

Q. But that was -- in other words, you did not ever have a function of going and working along -- working in that area around the building to recover evidence and so on like that?

A. No, I did not.

MR. TIGAR: All right. Thank you very much, sir.

I have no further questions, your Honor.

MR. ORENSTEIN: Nothing further, Judge.

THE COURT: Excused? All right.

You may step down. You're excused.

We'll take our noon recess at this point, since we're between witnesses.

And, members of the jury, we'll, as usual, take our usual-length recess, which will be till 1:35. And of course, as usual, please do not during this time discuss any aspect of this case or anything about it among yourselves or with any other persons; and continue to recognize your responsibility to decide just what's presented to you in the evidence in this case.

You're excused now till 1:35.

(Jury out at 12:05 p.m.)

THE COURT: Okay. Recess.

(Recess at 12:06 p.m.)

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Direct Examination by Ms. Wilkinson

Voir Dire Examination by Mr. Tigar

Direct Examination Continued by Ms. Wilkinson 7754

Cross-examination by Mr. Tigar

Redirect Examination by Ms. Wilkinson

Recross-examination by Mr. Tigar

Redirect Examination by Ms. Wilkinson

Recross-examination by Ms. Wilkinson

Recross-examination by Mr. Tigar

Larry Tongate

Direct Examination by Ms. Wilkinson

Voir Dire Examination by Mr. Tigar

Direct Examination Continued by Ms. Wilkinson 7794

Cross-examination by Mr. Tigar

Redirect Examination by Ms. Wilkinson

Brian Espe

Direct Examination by Mr. Orenstein

Cross-examination by Mr. Tigar

PLAINTIFF'S EXHIBITS

Exhibit	Offered	Received	Refused	Reserved	Withdrawn
127	7710	7710			
140	7788	7788			
141	7789	7789			
952E	7817	7817			
1013	7816	7816			
1030	7818	7818			
1838					
1838	7794	7794			
1839	7796	7796			

DEFENDANT'S EXHIBITS

Exhibit	Offered	Received	Refused	Reserved	Withdrawn
E1842-E1843	7705	7705			

* * * * *

REPORTERS' CERTIFICATE

We certify that the foregoing is a correct transcript from the record of proceedings in the above-entitled matter. Dated at Denver, Colorado, this 10th day of November, 1997.

Paul Zuckerman

Kara Spitler

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