

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLORADO

Criminal Action No. 96-CR-68

UNITED STATES OF AMERICA,

Plaintiff,

vs.

TERRY LYNN NICHOLS,

Defendant.

REPORTER'S TRANSCRIPT

(Trial to Jury: Volume 100)

PROCEEDINGS

Proceedings before the HONORABLE RICHARD P. MATSCH,
Judge, United States District Court for the District of
Colorado, commencing at 1:30 p.m., on the 1st day of December,
1997, in Courtroom C-204, United States Courthouse, Denver,
Colorado.

Proceeding Recorded by Mechanical Stenography, Transcription
Produced via Computer by Paul Zuckerman, 1929 Stout Street,
P.O. Box 3563, Denver, Colorado, 80294, (303) 629-9285

APPEARANCES

PATRICK RYAN, United States Attorney for the Western
District of Oklahoma, 210 West Park Avenue, Suite 400, Oklahoma
City, Oklahoma, 73102, appearing for the plaintiff.

LARRY MACKEY, SEAN CONNELLY, BETH WILKINSON, GEOFFREY
MEARNS, JAMIE ORENSTEIN, and AITAN GOELMAN, Special Attorneys
to the U.S. Attorney General, 1961 Stout Street, Suite 1200,
Denver, Colorado, 80294, appearing for the plaintiff.

MICHAEL TIGAR, RONALD WOODS, ADAM THURSCHELL, REID
NEUREITER, and JANE TIGAR, Attorneys at Law, 1120 Lincoln
Street, Suite 1308, Denver, Colorado, 80203, appearing for
Defendant Nichols.

* * * * *

PROCEEDINGS

(Reconvened at 1:30 p.m.)

THE COURT: Please be seated.

(Jury in at 1:30 p.m.)

THE COURT: All right, Mr. Tigar.

MR. TIGAR: Thank you.

(Steven Burmeister was recalled to the stand.)

CROSS-EXAMINATION CONTINUED

BY MR. TIGAR:

Q. Hello, again, Mr. Burmeister.

What's an EGIS?

A. EGIS?

Steven Burmeister - Cross

Q. Yes.

A. It is a instrument. It's a brand name for an instrument that is a explosives screening device, but it can also lead to chemical information for a particular sample.

Q. And did you run an EGIS test on Government Exhibit 664?

A. I believe it was conducted on that particular sample.

Q. Is that one of the tests that you reported in the chart that was put up on the easel?

A. If I could just take a peek at the chart one second.

Q. Of course.

A. Yes.

Q. Yes, it is?

A. Yes, it is.

Q. How is it listed on the chart?

A. It is listed as the gas chromatography with the chemiluminescence detection.

Q. Gas chromatography. Oh.

Putting 1744 up on the thing here. This, where it says gas chromatography with chemiluminescence detection; is that it?

A. Yes.

Q. And who did that test?

A. I'm not positive who the exact operator would have been.

Q. I'm going to show you page 222 of your notes and ask if that refreshes your recollection as to who did the test.

Steven Burmeister - Cross

Does that refresh your recollection?

A. Yes.

Q. Who did the test?

A. That particular one was conducted by Special Agent Martz.

Q. Didn't you tell me on cross-examination before lunch that Mr. Martz didn't do any of the work?

A. If I did, then I misspoke; but I thought at the time that I testified it was in regards to the ammonium nitrate testing itself.

Q. So the gas chromatography was for -- that was for the high-explosive tests; right?

A. Yes.

Q. Okay. And Mr. Martz is a cocky gentleman who shoots from the hip, isn't he?

MS. WILKINSON: Objection, your Honor.

THE COURT: Sustained.

BY MR. TIGAR:

Q. Do you have an opinion about Mr. Martz's abilities in the laboratory?

MS. WILKINSON: Objection, your Honor.

THE COURT: Overruled.

THE WITNESS: Well, you'd have to ask me on what particular types of examinations you're referring to.

BY MR. TIGAR:

Q. Well, have you ever referred to him as a cocky gentleman?

Steven Burmeister - Cross

MS. WILKINSON: Objection.

THE COURT: Yes. We'll have to limit it to the test that is involved here.

BY MR. TIGAR:

Q. Have you ever criticized his overall approach to testing?

MS. WILKINSON: Objection.

THE COURT: Sustained.

BY MR. TIGAR:

Q. Do you have an opinion about his ability to operate this machine?

A. Yes.

Q. And what is that?

A. He was competent to operate that instrument.

Q. Showing you now what I've marked page 222 of your notes as Defendant's D1740. Do you recognize this as Mr. Martz's work in connection with that particular test?

A. He was provided an extract that I did provide to him, and he would have made notations on the chart following the examination on the GC/Chemiluminescence instrument.

Q. And does that document which is -- is that document page 222 of your notes? Or is that part of your notes?

A. It is part of my notes on this sample.

Q. Does the document relate to Mr. Martz's testing of Government Exhibit 664?

A. It does for 664 as labeled Q507. It was an extract from

Steven Burmeister - Cross

it.

Q. Yes.

MR. TIGAR: We offer it, your Honor.

MS. WILKINSON: I don't think I have any objection, but I'd just like to look at it.

THE COURT: All right. Sure.

This is D1740?

MR. TIGAR: Yes, your Honor.

MS. WILKINSON: We have no objection.

THE COURT: All right. It's received.

BY MR. TIGAR:

Q. Now, placing what's been received now as D1740 up on the overhead television projector, we see -- the first sign we see is No. -- Run No. 4, Q507; right?

A. Yes.

Q. And he records a positive for RDX; correct?

A. That's what's written, yes.

Q. Well, does that mean he found RDX on this item?

A. It doesn't mean he found it, no.

Q. What does it mean? Does it mean it's consistent with it? Tell me what that means.

A. That would indicate that when he ran it, there was a positive indication for RDX in the sample.

Q. Uh-huh. And your conclusion you testified on direct was

Q. On that, and your conclusion you recalled on direct was high explosive, not detected; correct?

Steven Burmeister - Cross

A. That's correct. But I had reviewed his work, and I didn't agree with that particular finding.

Q. So what was it that caused you to disagree with Mr. Martz's finding?

A. Well, I was the ultimate one who would review the charts and the data on this particular run. I did not determine that it was positive for RDX.

Q. And did you perform an additional test or just review the read-out from the machine?

A. The additional testing was a mass-spectral examination for that particular material.

Q. Did you do that?

A. It was at my request.

Q. And did you think this was an example of Mr. Martz' shooting from the hip?

A. No.

Q. This conclusion?

A. No.

Q. Why did you think he made a mistake?

A. I didn't say he made a mistake. I said I reviewed the chart and I didn't agree with the particular finding.

Q. Now, you testified that -- on direct examination that you also went and looked at a storage shed; correct?

A. Yes.

Q. That was on the 22d of April? A Saturday or Sunday, what

Steven Burmeister - Cross
day?

A. It would have been the 23d.

Q. 23d. Sunday?

A. Yes.

Q. And that's a storage shed that had chipboard walls and a cement floor; correct?

A. That would -- that sounds -- yes, that sounds consistent with what I recall.

Q. Are those surfaces, chipboard and cement, suitable for the retention of explosive residues?

A. The wooden surface could be, and the protected environment that a concrete floor would be on could definitely be a surface that could retain it.

Q. In -- now, finally with respect to your collection techniques, what is a control sample?

A. A control sample would be one in which you -- if, for example, you're taking a swabbing with a piece of gauze, you would want to know whether that piece of gauze has anything on it to begin with. So in order to do that, you would capture that gauze, package it up, and send it to the laboratory for testing. If you're using a solvent in conjunction with that particular swab, you would take the solvent and the swab and

send that in, and that would represent a control.

Q. Now, does the -- do you ever use control samples to determine background levels of things to try to verify the

Steven Burmeister - Cross

results you're going to get in the laboratory?

A. Well, if you will, if you're determining background levels, the background levels would be those that would be normally present on the -- either the swab or in the solvent that you're doing.

Q. So that the control samples you take -- when you go to the scene, you take clean things; right? They're not supposed -- they don't have any stuff on them of the kind you're looking for; correct?

A. Yes.

Q. And then to make a control sample, you take them out and expose them to the environment that you're testing in; is that the next thing you do?

A. Well, you're -- you in one way or another have to expose it to get it out of the packaging to put it into the second packaging.

Q. Yes.

A. But you're not really measuring the environment per se. You're actually looking at the item that's taking the sample as the control.

Q. Okay. And in that -- in that process, looking around in the parking lot there, were you concerned about the background levels of ammonia and nitrate ions?

A. Concerned is probably strong. I was aware that there could be levels of ammonium ions, could be level of nitrate ions, and

Steven Burmeister - Cross

certainly that finding would weigh on my ultimate decision if in fact I found ammonium ions and nitrate ions.

Q. And you were aware that the bomb had damaged sewer pipes -- correct -- waste pipes?

A. I'm not aware of that.

Q. Did you look at the damage to the Athenian Building immediately adjacent to the parking lot, that brick building, to see if any waste pipes had burst?

A. I didn't check for particular waste pipes, and I didn't see any.

Q. Human waste contains ammonia; correct?

A. Yes, it does.

Q. I mean, do you have kids?

A. No.

Q. No? You ever looked at a diaper after it's been hanging around for a while? There's an ammonia smell; right?

A. That's true, yes.

Q. And that is ammonia; correct?

A. It's in combination with -- my knowledge on the actual breakdown of urine and those items, I know that you can detect

ammonia in some levels, but it could also come from the urea that's present.

Q. Okay. Now, but as we've established before, you didn't cause any samples to be taken around the items where these items that were lying on the ground were recovered; is that

Steven Burmeister - Cross
correct?

A. I'm sorry, are you referring to soil samples?

Q. Yes, soil samples. Debris samples, really.

A. No soil samples were taken in that general area.

Q. And when we say soil samples, the parking lot surface was asphalt; correct?

A. Yes.

Q. But there was a lot of debris over top of the asphalt that had resulted from things falling on or being deposited on it in particular ways; correct?

A. There was a lot of debris on that parking lot, yes.

Q. And did you . . . you were aware at the time -- did you cause the people that were doing the -- you didn't cause anybody to do video-taping of the evidence recovery procedure; correct?

A. No, I had nothing to do with that.

Q. And you were aware at the time in May, 1995, were you not, that the methods of evidence collection in the field that were being used by the United States lagged behind those used in other parts of the world?

A. I didn't know that.

Q. Were you aware that in the United States the process of collection of evidence in the field by bomb technicians had been lagging for a long time?

A. I didn't know that.

Steven Burmeister - Cross

Q. Do you recall being interviewed on Monday, the 22d of April, 1996, by Special Agent Joseph Lestrangle?

A. The name doesn't ring a bell.

Q. Well, I'm going to show you page 89 of what I represent to be a transcript of that interview and ask you to look there and see if that refreshes your recollection about what you said on this subject.

The second of the two paragraphs there.

A. I'd have to read the whole context --

Q. All right.

A. -- in order to see how it fit in.

Q. All right.

If you'll excuse my tabs there -- on here, I'll give you the rest of the pages, sir.

A. Uh-huh.

Q. Take your time.

Were you aware back in April, May, 1995, that the United States was lagging behind other places in the world in the control of evidence collection at bomb crime scenes?

THE CONTROL OF EVIDENCE COLLECTION AT BOMB CRIME SCENES:

A. That was -- that statement there was directed at prior to that time. It was sometime before that. Essentially when I first came into the laboratory.

Q. You're saying that when you first came in the laboratory, you were lagging behind; but you think that by April, May, 1995, United States was not lagging behind anymore; is that

Steven Burmeister - Cross

what you're saying?

A. I would have to say yes.

Q. So you think in April, May, 1995, you were doing it right?

A. Yes.

Q. And were you aware, then, in April, May, 1995, of the NFPA921, National Fire Protection guide, that said physical evidence should be thoroughly documented before it is moved? You knew that; right?

A. I don't know whether the document itself says that, but I would concur with that topic.

Q. All right. Let me just show you and see. First, does the document say it; and second, do you agree with it?

A. Uh-huh. Yes.

Q. And do you know whether that standard was followed with respect to the search in the parking lot conducted on the 21st of April, 1995, by Special Agent Wilson and Mr. Kelly?

A. Only reviewing the after-the-fact material that even in preparation for this testimony, seeing the documents, I believe what's mentioned in that article was in fact performed.

Q. It's your opinion that it was; is that right?

A. Yes.

Q. Now, next-to-last time. With respect to crystals, sir, at the time you were doing the examination of Government's 664, were you aware that ammonium nitrate crystals can occur in different shapes?

Steven Burmeister - Cross

A. Yes.

Q. And those shapes can be influenced by the way in which the ammonium nitrate is deposited; is that -- was that your understanding?

A. Deposited and formed on a particular surface.

Q. Now, during the -- you did all the examinations that you testified about on direct examination -- correct, sir -- including the ones -- or caused to be done or did -- the ones that included the ones to try and detect high explosives; correct?

A. Yes.

Q. And you also looked at all the fragments you talked about; is that correct, sir?

A. Yes.

Q. And you expressed your opinions to many, many people; correct?

A. I don't know what you mean by that.

Q. Well, you expressed your opinions to your principal examiner; correct?

A. He would have received my findings in a written form.

Q. And then he made a report based on those; correct?

A. A final, official laboratory report was issued.

Q. Yes. And did you read that?

A. I only recall seeing portions of that report. I don't recall reading the entire report.

Steven Burmeister - Cross

MR. TIGAR: Just a moment, sir.

I got it.

BY MR. TIGAR:

Q. Now, did you -- did you see the report after -- have you previously testified that you saw the report after it was prepared?

A. I would have seen it after it was prepared and in its final form.

Q. Yeah. So you saw the whole thing; right?

A. Again, portions of it, I recall seeing. The entire report, I'm not sure if I saw the entire report.

Q. Were you interviewed again Monday, the 22d of April, 1996, by Special Agent Joseph Lestrangle and others?

A. I'm not sure of the name. The name doesn't sound familiar.

Q. Do you remember on -- do you remember being interviewed on or -- in or about April, 1996?

A. By whom?

Q. By a group of people that included Special Agent Lestrangle.

A. Again, I'm not sure of the --

Q. How about Mr. Eldon -- was he there?

A. That name I recognize, yes.

Q. Do you recall being asked this question and making this answer? Page 73.

"Now, did you review this report, the Dave Williams report, before it went out? Let me just ask you that question

Steven Burmeister - Cross

first. Did you review it all?"

Agent Burmeister: "I saw it afterwards. I'm not sure if I saw it before."

Do you remember being asked that question and making that answer?

A. If you're reading it to me now, that would sound consistent with what I recall saying.

Q. And does it sound consistent with what you remember happening?

A. Again, my recollection is that I would have seen the report but only read parts of the report. I don't recall reading the entire report at all.

Q. Sir, do you have any doubt that you were asked whether you reviewed it all and that you said you saw it afterwards?

A. Well, you're asking me what my recollection is. My recollection today is that I don't recall seeing the -- reading the entire report. I only recall seeing it but reading portions of it.

Q. And your recollection today is that you told Mr. Eldon that you'd seen it all; correct?

A. That sounds consistent with it, yes.

Q. Now, in addition -- you discussed your findings with respect to high explosives, ammonium nitrate, examination of plastic with your principal examiner, we established. And you also made lab reports on the work that you've done; correct?

Steven Burmeister - Cross

A. I recall providing the principal examiner with my written results.

Q. And you also discussed your findings with other people in the Department of Justice; correct?

A. On various questions. You'd have to give me the particular topics. I mean it's pretty broad --

Q. You discussed what you -- you discussed the chemical composition of the device, didn't you?

A. See, I don't have the actual interview in front of me. I may very well have. I don't know.

Q. Well, isn't it a fact, sir, that in your view, there's a mystery behind not knowing what the device really contained and how it was configured?

MS. WILKINSON: Objection, your Honor. Again this is beyond the scope.

THE COURT: Sustained.

BY MR. TIGAR:

Q. Sir, you were the person who was responsible for doing all of your -- you were responsible for overseeing all of the chemical tests; correct?

A. Yes.

Q. And the chemical tests were designed to detect what the device might have contained; correct?

MS. WILKINSON: Objection, your Honor.

THE COURT: Overruled.

Steven Burmeister - Cross

THE WITNESS: The purpose of the chemical testing was to determine what explosives and explosive residues may have been on the material itself. They can only provide suggestions as to what the device may have contained.

BY MR. TIGAR:

Q. And you understood that was your purpose? You wanted to provide suggestions as to what the device may have been contained; correct?

A. That's part of the overall findings.

Q. That was your job; correct?

A. To conduct the chemical examination of the material.

Q. The -- all the examinations that you testified to having conducted are in the context of helping to make suggestions as

conducted are in the context of helping to make suggestions as to what the device might have contained; is that right?

A. It's information that can be used to determine what that device may have contained.

Q. And you, as the acting chief of the Explosives Unit of the FBI Laboratory, have expertise in the construction and content of explosive devices; correct?

A. That's not my expertise.

Q. You know how to build them, don't you?

A. But I'm not an expert in those particular devices.

Q. Have you built explosive devices, improvised explosive devices?

A. Yes, I have.

Steven Burmeister - Cross

Q. You've blown up trucks with them, haven't you, sir?

A. I've been involved with testing where vehicles have been exploded.

Q. So you know -- you know how to make them; correct?

A. I'm aware of construction, but I don't consider myself an expert in that area.

Q. And you've also read books on how to make them; correct?

A. Yes.

Q. Well, in your work, was -- in the context of attempting to help people figure out what this was made of -- correct -- or not?

MS. WILKINSON: Objection, asked and answered.

THE COURT: Overruled.

THE WITNESS: Could you repeat the question?

BY MR. TIGAR:

Q. Yes. Your work was to help figure out what this was made of; correct?

A. Chemical analysis is used to determine what that device may have contained.

Q. All right. And in your opinion, there's a mystery as to what it contained, to this day, isn't there?

MS. WILKINSON: Objection.

THE COURT: Sustained.

MR. TIGAR: May I inquire? I don't want to trespass on the Court's ruling. Is this a scope matter, your Honor?

Steven Burmeister - Cross

THE COURT: It is.

MR. TIGAR: Very well.

Agent Burmeister, then I have no further questions. We would like to have the agent recalled, and I'll ask him, then, when he comes back.

THE COURT: All right.

Miss Wilkinson, do you have any redirect?

MS. WILKINSON: I do, your Honor. Thank you.

REDIRECT EXAMINATION

BY MS. WILKINSON:

O. Agent Burmeister, when you received Government's Exhibit

664, did you keep track of the chain of custody in your laboratory?

A. Yes.

Q. How do you do that?

A. There's a chain-of-custody form that is kept in my notes with that particular item.

Q. Are you familiar with something called a laboratory work sheet?

A. Yes.

Q. What is that?

A. The laboratory work sheet is a document that is prepared by the primary examiner which lists various information about the case as well as informations about specific samples that are submitted for examination.

Steven Burmeister - Redirect

Q. Does it include a description of the items you're receiving for testing?

A. A very brief description.

Q. And do you annotate that to show when you received certain items?

A. Yes.

Q. And did you annotate a laboratory work sheet to show when you received Q507 as well as other items?

A. Yes.

Q. And did you provide those as parts of your notes to the Government and to the defense?

A. Yes, I did.

MS. WILKINSON: Your Honor, we'd offer 2122.

MR. TIGAR: No objection, your Honor.

THE COURT: 2122 is received.

MS. WILKINSON: Thank you.

May I display this, your Honor?

THE COURT: Yes. It's a multiple-page document.

MS. WILKINSON: Yes. I'll start with page 1, and

I'll

say for the record what pages we're looking at.

THE COURT: All right.

BY MS. WILKINSON:

Q. Agent Burmeister, is this the first page of your work sheet for Q507?

A. Yes.

Steven Burmeister - Redirect

Q. Whose handwriting is that?

A. That's mine.

Q. What does that indicate?

A. This indicates that specimens Q482 through Q553 were received on 4-28-95, with my initials from Mr. Mills.

Q. That would include Q507?

A. Yes.

Q. And I'm going to turn to page 5 of this document. Do you

see Q507 there as the second entry?

A. Yes.

Q. And before we go to that, let me stop at the top. The first entry says Q482 through 553.

A. Yes, it would.

Q. Does that show on what date you received it?

A. Yes.

Q. What date?

A. 4-28, 1995.

Q. And on the next line, does it show where Q507 went after you had it?

A. Yes.

Q. Who does it show it went to?

A. That would have been Special Agent Buechele.

Q. And on what date did you send it to him?

A. It was sent to Agent Buechele on June 5, 1995.

Q. Now, let me show you 664.

Steven Burmeister - Redirect

Do you see your initials on the back of Government's Exhibit 664, Q507?

A. Yes.

Q. Do you see anyone else's initials on there?

A. Yes, I do.

Q. What other initials are on there?

A. It was Mr. -- Agent Buechele's initials.

Q. Now, let's look at the front here. Do you see this marking -- the marking on the red and the marking on the yellow?

A. Yes, I do.

Q. Is there indication of the Q number on the yellow?

A. Yes.

Q. What does it say?

A. It's listed as Q507.

Q. Are there initials below that?

A. Yes.

Q. What does it say?

A. It's RCB, which is Agent Buechele's initials.

Q. How about on the red portion? Is there another Q marking?

A. Yes.

Q. That looks like in gold or some kind of light pen?

A. Yes.

Q. What's the marking there?

A. The Q is Q 507.

Steven Burmeister - Redirect

Q. And are there initials under that?

A. Yes.

Q. What is that?

A. It is RCB, which is Agent Buechele's initials.

Q. Starting with the front that you just described, let's see if we can show the jury. Are these the initials you were

describing on the yellow portion?

A. Yes.

Q. And that says "Q507 RCB"?

A. Yes.

Q. And let me see if I can -- they're there in this lighter writing. Does it say the same thing?

A. Yes, it does.

Q. Q507 and RCB?

A. Yes.

Q. And on the back here -- first of all, let's see if I can turn it so you can read it. Am I going the wrong way? Are those your initials written sideways?

A. Yes, on the left side.

Q. And what are your initials?

A. SGB.

Q. And can you read these larger markings, here?

A. It's Q507.

Q. And the initials?

A. RCB.

Steven Burmeister - Redirect

Q. Now, when you were asked on cross-examination about the ammonium nitrate crystals that you found on Government's 664, I believe counsel referred to it as trace evidence. Would you consider the ammonium nitrate crystals you found on the back of 664 trace evidence?

A. No.

Q. Why not?

A. Trace evidence is typically those pieces or those chemicals that are invisible to the naked eye and even some with the aided eye. It's typically used on solvent-type extractions where things are invisible.

Q. And you said that when you looked at this -- could you actually see the crystals without the aid of a microscope?

A. I could take that object and look at the surface; and after the finding, yes, I could find it.

Q. All right. And when you used your microscope to find the crystals, does that still mean that it's not trace evidence? I'm not sure I understand why, even though you looked through a microscope, it's not trace evidence.

A. Well, once -- using the microscope, I can look closer to the surface. These are particles. And really anytime I can actually see a particle and physically remove it with a pair of forceps, I don't consider that trace. That's almost a bulk examination because I have material itself.

Q. In your business, in the explosive residue analysis

Steven Burmeister - Redirect

business, would those crystals be considered big evidence?

A. Yes.

Q. Now, when you identified those crystals as ammonium nitrate, did you identify them as ammonium ions and nitrate ions?

ions.

A. No.

Q. Is there a difference between making a finding of identifying ammonium nitrate crystals and just identifying ammonium ions and nitrate ions?

A. Yes, that's different.

Q. Explain to the jury how that's different.

A. When you're detecting the ions themselves, you're now detecting the trace amounts of these particular materials. The source of those ions are not attributed directly to ammonium nitrate, and they are found deposited on the surface from other forms. The ammonia could be connected to something else. The nitrate could be connected to something else. Ammonium nitrate is in its form, in its solid form.

Q. Is it more or less significant when you find ammonium nitrate crystals vs. ammonium ions and nitrate ions?

A. Much more significant.

Q. Why is that?

A. Because now we actually have the material itself of ammonium nitrate.

Q. You told us, I think on your chart, Government's Exhibit

Steven Burmeister - Redirect

1744, that you did some tests that showed ammonium nitrate -- is that correct -- up here on the top?

A. Yes.

Q. But you also looked at ions?

A. Yes.

Q. Does that mean you only found ions during these tests?

A. I would have been looking for a panel of different types of ions, and that was the purpose of that test, to see what ions were present, what other materials were present.

Q. And how do these findings, when you used the ion chromatography and the other tests of ions, support your findings up here -- using the polarized light microscope and the FTIR that you found ammonium nitrate?

A. Well, now that I'm taking the material, I'm applying it to water, the water will break it down into its components, and they would be cross-checked mechanisms for me to verify ammonium nitrate in itself. I should find ammonium ions. I should find nitrate ions.

Q. Now, during cross-examination, you were asked about a test that you conducted in another test, using a solid probe mass spectrometer; is that right?

A. Yes.

Q. And did you use the solid probe mass spectrometer in making any of these determinations as to ammonium nitrate?

A. No.

Steven Burmeister - Redirect

Q. And do you have any reason to believe that any of these tests that you relied on would confuse ammonium nitrate with urea nitrate?

A. No.

Q. You told us that there were some tests conducted on Government's Exhibit 664 to determine if there were high explosives; is that right?

A. Yes.

Q. And you sent a sample taken from this to Mr. Martz; is that true?

A. Yes. I took an extract from that material and provided it to him.

Q. Okay. And you told Mr. Tigar, I believe, that he did one test, a screening test, using the EGIS, or EGIS?

A. Under my direction, yes.

Q. Did you cause other tests to be conducted to determine if there were in fact high-explosives residue on Government's Exhibit 664?

A. Yes. Yes, I did.

Q. And is that your policy in the lab, to conduct more than one test to determine if there is in fact high explosives?

A. Yes.

Q. And what did that second test tell you?

A. That it was negative.

Q. And have you -- is that common practice in the laboratory

Steven Burmeister - Redirect

where one test might tell you one thing and one test --

MR. TIGAR: Objection: Leading, your Honor.

THE COURT: Sustained.

BY MS. WILKINSON:

Q. How do you explain the different results from one test to the other, as to high explosives on Government's Exhibit 664?

A. It's useful to conduct cross-check mechanisms to check the opposites of instrumentation to verify any findings that one may have and cross-check it with another one. If you don't have both in agreement, then you can't make any determination as to a finding.

Q. Now, as with regard to ammonium nitrate, how many different cross-checks did you do on Government's Exhibit 664?

A. Several different cross-checks were actually made above and beyond what normally would have been an identification.

Q. Now, you were asked on cross-examination whether you conducted test for hydrocarbons on Government's Exhibit 664, and you said you did not?

A. Yes.

Q. Why didn't you test for hydrocarbons?

A. Early on I made a determination that items that were removed from that scene itself would not be tested for hydrocarbons, and that was based on the vehicles that were in the parking lot. Many of those vehicles had fuel tanks that had ruptured. There were trucks that were in the proximity of

Steven Burmeister - Redirect

that particular scene. There was exhaust being displayed by

the vehicles themselves. And I felt based on that finding it would be of no value to determine whether -- if a finding of hydrocarbons was on a sample, what the significance of that finding would be.

Q. So if you had found hydrocarbons on 664, would you have been able to say anything about its significance?

A. No.

Q. And does that relate in some way to background levels that are at the scene?

A. Yes.

Q. Now, you were asked during cross-examination about why you didn't take soil samples from the parking lot and other background samples. Do you recall that?

A. Yes.

Q. Why didn't you -- or why were you unable to take background samples of the bombing crime scene?

A. Well, there was a urgency to get the task done at hand. There were various samples that -- in my particular case, I wanted to capture as many different samples as possible in that particular scene. And so taking samples that were viable samples that seemed to me to be a good surface, those ones were taken.

Q. To take ideal background or control samples, would you have had to have had samples from before the time of the explosion?

Steven Burmeister - Redirect

A. Absolutely.

Q. Was that possible?

A. No. I don't have that luxury.

Q. And if you had found nitrates in the soils surrounding the area where Government's Exhibit 664 was recovered, would that have changed your findings that you identified ammonium nitrate crystals on this exhibit?

A. No.

Q. Why not?

A. If you want to try to attach that the ions that came from the soil were somehow part of the ammonium nitrate that's in that particular sample, I -- it's my opinion that the nitrates that are there would not have produced the types of crystals that were formed and found on that particular sample itself.

Q. Now, during the -- your laboratory work on this case, do you recall approximately how many different items in the bombing crime scene you examined for explosives residue?

A. There were over 400 items that were examined by me for that particular test.

Q. Did you find ammonium nitrate on any other exhibit or piece of evidence from the bombing crime scene?

A. No.

Q. If the ammonium nitrate crystals had reformed under the hypothesis that Mr. Tigar gave you, would you have expected to see ammonium crystals -- ammonium nitrate crystals on other

Steven Burmeister - Redirect

STEVEN BURMEISTER - REDIRECT

items from the parking lot and other areas surrounding the bombing crime scene?

A. I would expect that, yes.

MS. WILKINSON: No further questions, your Honor.

THE COURT: Mr. Tigar.

REXCROSS-EXAMINATION

BY MR. TIGAR:

Q. Why would you expect that?

A. If it was formed from nitrates and ammonium ions that were floating around in the air or from the ground surface, they would have been deposited on other items; and through my microscopic examinations on other specimens, I would have detected it.

Q. Now, you answered a lot of questions about ammonium ions and nitrate ions at the scene; correct?

A. I answered questions about those ions, yes.

Q. Yes. Now, when you went to Mr. Nichols' house, you had some little glass bottles with screw tops; right?

A. Yes.

Q. And then you could pick up things and put them in little glass bottles and label them; right?

A. Yes.

Q. Didn't take very long, did it?

A. Essentially, no.

Q. Now, when you were in the parking lot, did you have little

Steven Burmeister - Recross
glass bottles with screw tops?

A. Yes.

Q. Could you have looked at the sample of the soil underneath the items you were picking up and put a few -- some of that soil into a little glass bottle with a screw top?

A. If I were there at the time that it was actually collected, I suppose I could have done that.

Q. Did you direct anybody to do it?

A. No.

Q. Now, if the dirt that was on the parking lot -- we've seen pictures of the parking lot -- If the dirt and the debris that was on the parking lot came from a place that had a little bit of ammonium nitrate on it, you have no way of knowing that, do you?

A. I have no idea.

Q. And because am -- ammonium nitrate is a very common -- commonly used in a number of applications, such as fertilizer; correct?

A. It's used as a fertilizer.

Q. Now, you also said on redirect examination that -- oh, you said that you had an urgency about collecting evidence; is that right?

A. Yes.

Q. How many days were you there?

A. When I say "urgency," I wanted to capture the scene as soon

Steven Burmeister - Recross

as possible. So I arrived on the 20th; and based on that, I wanted to capture as many samples as possible.

Q. Now, you said that the -- you regarded the ammonium nitrate you found on 664 as big evidence. You answered that question. You said it was big; right?

A. Yes, I did, I said that.

Q. Is it big?

A. For me, it's big.

Q. Okay. It's significant; right?

A. Not in terms of significance. I'm talking about in the size.

Q. Okay. Well, you also said it was significant; correct?

A. It would be significant finding, yes.

Q. Why is it a significant finding, to you?

A. In the times that I've been working, this is the second time that I've actually seen crystals on a particular material itself.

Q. Now, prior to April 21, 19 -- April 28, 1995, had you ever seen crystals?

A. I have seen it only in one other incident.

Q. Okay. And what incident was that?

A. It was an incident -- I forget the exact location. It was from a foreign country. And it was a sample of Tovex that had been deposited on a particular object and had not exploded to completion but was deposited on a material.

Steven Burmeister - Recross

Q. So you mean if somebody uses Tovex, that's that sausage stuff?

A. Yes.

Q. And you mean that Tovex can go off and leave residues that you can find?

A. Yes.

Q. Did you find any here?

A. Of Tovex?

Q. Yes.

A. I didn't find the other components that are found in Tovex.

Q. You didn't find the same thing you'd found in that other case; right?

A. That's correct.

Q. Okay. Now, you say that it was significant because you never found it before. Does -- is there some book we could go to and read how significant this is? Is there some scientific test we could do to see if this was significant or not?

A. I don't know what you're asking there.

Q. Is there a book we could go to in the library that says if I find ammonium nitrate crystals at a bombing scene, that has some significance?

A. I'm not sure if it's actually addressed that way in texts.

Q. Is there a paper that has been delivered by somebody at a scientific gathering, a peer-reviewed paper, that says that this finding of crystals is significant in context of bombing

Steven Burmeister - Recross
crime scene?

A. There have been papers that have been written. There was a document that was prepared by a individual in Canada, a Sandy Beverage, who talked about various techniques for residue analysis. I recall him addressing various findings. And right now, I'm not sure whether he actually addresses the finding of crystals. It's my recollection that he does, but I'm not positive.

Q. So as you sit there today, you can't remember whether there's any such document that addresses crystals; is that right?

A. There are documents -- I'm not sure about findings that directly address the significance of crystals that you would be finding.

Q. Well, is it your testimony, sir, that this finding is significant because it would help you figure out what the device was?

A. As part of the residue analysis, yes.

Q. Well, if that's the reason, then, isn't it a fact that you don't know what the device was made of?

MS. WILKINSON: Objection.

THE COURT: Sustained.

MR. TIGAR: Okay. Well, Agent, I don't have any more questions.

We will -- we'll ask him back, your Honor.

Steven Burmeister - Recross

THE COURT: Okay.

MS. WILKINSON: That's fine.

THE COURT: You may step down now, and --

MR. TIGAR: Excuse me, your Honor, one more. I'm sorry.

THE COURT: All right.

BY MR. TIGAR:

Q. Is there anything on that log, Government Exhibit 2122, that shows where the thing, Government's 664, was when the

crystals disappeared?

A. I'm not sure. Which log are you referring to?

Q. Exhibit 2122, the log that was shown to you most recently on redirect examination. My question just is: Is there anything there that shows where it was when the crystals disappeared?

A. The log itself does not go that far. It was sometime after the generation of this log that the item was actually examined. I believe it was sometime in November of '96 that it was first discovered by myself that the crystals were not on 507.

Q. But that log does go through the time that Agent Buechele had it and then gave it back to you; correct?

A. Well, the chain of custody that I'm referring to is a --

what I've seen earlier today, that's the chain of custody that I'm talking about.

Q. I'm talking about that that log shows that Agent Buechele

Steven Burmeister - Recross

got it in June and gave it back in July; right?

A. This is up to '95; I'm talking '96.

Q. Yes, I understand. Does that log show that Agent Buechele got it in June and gave it back in July?

A. Yes, June of '95, given back in July of '95.

MR. TIGAR: Thank you. No further questions.

MS. WILKINSON: Just one, your Honor.

REDIRECT EXAMINATION

BY MS. WILKINSON:

Q. Agent Burmeister, you don't know when those crystals disappeared or dissolved off Q507, do you?

A. No.

Q. You don't know if that happened during Agent Buechele's examination?

A. That's correct.

MS. WILKINSON: No further questions.

THE COURT: All right. You may step down now, and counsel will be in touch with you.

Next, please.

MR. MACKEY: Your Honor, we'll call Linda Jones.

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

(Linda Jones affirmed.)

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

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

THE WITNESS: Linda Edwina Jones, J-O-N-E-S.

THE COURTROOM DEPUTY: Thank you.

DIRECT EXAMINATION

BY MS. WILKINSON:

Q. Afternoon, Miss Jones. You've been sitting with us in the courtroom today, haven't you?

A. Yes, I have.

Q. And for the past several days?

A. Yes.

Q. Were you asked by the United States to do an independent analysis of the bombing crime scene in Oklahoma City?

A. Yes, I was.

Q. And are you here today to tell us about that?

A. Yes.

Q. Could you give us a little background and tell us where you're from?

A. I'm from the forensic explosives laboratory of the Defense Evaluation and Research Agency of the Ministry of Defense in England.

Q. And were you born in England?

A. Yes, I was.

Q. And how long have you been working -- can we call it DERA?

A. Yes, I think that's a good idea.

Q. Okay. And how long have you been working for DERA?

2. Q. Okay. And how long have you been working for DERA?

Linda Jones - Direct

A. It's been called different things over the last few years, but I've worked for the Ministry of Defense for 24 years and concentrated on forensic work for the last 12 years.

Q. Can you tell us generally what DERA does in England.

A. The forensic explosives lab of DERA conducts forensic explosives investigations; for incident, suspected of involving the criminal misuse of explosives, and this is mainly on behalf of the British police and other agencies.

Q. And is there a laboratory located at DERA?

A. Yes.

Q. And what kind of forensic work have you conducted in that laboratory?

A. I've conducted examinations of explosive devices that haven't gone off but have been made safe, post-explosive scenes, residue analysis, and finds and caches of recovered materials suspected of having an explosives connotation.

Q. Have you also traveled to bombing crime scenes?

A. Yes, I have.

Q. Now, when you did your work for the United States in this case, what was your title at DERA?

A. I was the principal forensic investigator.

Q. What is your current title?

A. I'm a DERA fellow.

Q. How long have you been a DERA fellow?

A. Approximately six hours.

Linda Jones - Direct

Q. Why is that?

A. I changed my title as of the 1st of December.

Q. And what is a DERA fellow?

A. It's the most senior professional title that DERA confers.

Q. Well, since you did your work in this case when you were a principal forensic investigator, can you tell us generally what a principal forensic investigator does?

A. I carried out some of the most important investigations in England involving some of the most serious explosives crime.

Q. And in that capacity, have you reviewed or become familiar with ammonium-nitrate-based explosives?

A. Yes, I have.

Q. Have you become familiar with ammonium-nitrate-based improvised explosive devices?

A. Yes.

Q. Can you tell the jury what a improvised explosive device is.

A. An improvised explosive device can take really two forms. Either the explosive itself can be homemade and the other parts of the bomb can be constructed from off-the-shelf materials, or the explosive device can include a manufactured explosive but the other bits that go in to make the explosive a viable bomb are homemade.

Q. During your tenure with DERA as a principal forensic examiner, what type of bombing crime scenes have you visited in

Linda Jones - Direct
England?

A. Bombing scenes that have ranged from the use of a few pounds of explosive, both manufactured and improvised, right up to thousands of pounds of improvised explosives.

Q. Have you ever seen a truck bomb before?

A. Yes.

Q. Have you ever seen one that was rendered safe?

A. Yes.

Q. Have you examined that?

A. Yes.

Q. And have you ever seen a truck -- crime scene where a truck bomb had actually exploded?

A. Yes, on a number of occasions.

Q. Now, before we get into your specific findings in this case, can you tell us a little bit about your educational background and start with what you did after high school.

A. After high school, I left school at age 16 and initially went to work for a pharmaceutical chemist. And then I stopped my education for a period at that time.

Q. And what did you do next?

A. Next I joined the Ministry of Defense in England in an explosives manufacturing plant.

Q. What did you do at that plant?

A. It was mainly the chemical analysis and testing of explosives manufactured by that explosives factory.

Linda Jones - Direct

Q. Were those military explosives?

A. Yes.

Q. And what was your purpose for examining those manufactured explosives?

A. It was quality-assurance testing. The factory would make the explosives, and we would check to make sure they'd made what they thought they'd made.

Q. What type of explosives did you test?

A. They were all high-performance explosives: RDX, TNT, HMX, HNS, and some intermediate products and ingredients.

Q. How long did you do that for?

A. From 1973 to 1978. So about five years.

Q. After that, did you move to DERA headquarters?

A. It wasn't called that at the time, but I moved to headquarters in London, yes.

Q. What was your assignment there?

A. I carried out studies and chemical analyses of the interaction of explosives with various polymers and plastics and paints and adhesives. That was the main part of my work.

Q. Now, when you say the interaction of plastics and

explosives, what do you mean?

A. What we were concerned about was to make sure that some of the plastics and other polymers that were being used, for example, to put explosives in, the containers, weren't going to react adversely with the explosives. So we wanted to make sure

Linda Jones - Direct

there weren't any extra dangerous by-products produced.

Q. While you were at the Ministry of Defense doing this work, did you continue your education?

A. Yes. When I joined the Ministry of Defense, they sponsored me to study for my degree, which was in chemistry.

Q. Did you complete that?

A. Yes, I did.

Q. And at some point after completing your degree, did you become a member of the Royal Society of Chemistry?

A. Yes, in 1983.

Q. What is that?

A. The Royal Society of Chemistry is a professional body whose headquarters are in England. And it furthers the science of chemistry and represents chemists.

Q. Does it qualify and accredit chemists in Great Britain?

A. Yes, it does.

Q. And does that mean when you joined the Society that you were qualified or accredited as a chemist?

A. Yes. When I first joined, I was admitted as a graduate. And then in 1983, I was made a chartered chemist and a full member.

Q. And have you gone through the ranks, so to speak?

A. Yes, I have.

Q. And what is your status now?

A. I am now a fellow of the Royal Society of Chemistry.

Linda Jones - Direct

Q. Is that the highest level?

A. Yes.

Q. Now, you just told us that while you were completing your education, you were working on plastics and explosives for the Ministry of Defense?

A. Yes.

Q. What did you do after that?

A. In 1985, I transferred to the forensic explosives laboratory, where I am now.

Q. Did you have a training period?

A. Yes.

Q. How long was your training period there?

A. Two to three years before they considered me appropriately -- sorry -- appropriately experienced to give testimony in court.

Q. And approximately how many explosives or explosive-related cases have you worked on in your career?

A. In the last 12 or 13 years, between 550 and 600.

Q. Do these include working -- looking at bulk explosives?

Q. DO THOSE INCLUDE WORKING LOOKING AT DARK EXPLOSIVES:

A. Yes.

Q. Improvised explosive devices?

A. Yes.

Q. A residue analysis?

A. Yes.

Q. Component parts of bombs?

Linda Jones - Direct

A. Yes.

Q. And explosives manufacturing?

A. Yes.

Q. Now, can you tell the jury approximately how many bombing crime scenes you've been to.

A. Probably about a dozen.

Q. And since you've worked on 550 to 600 cases, is it necessary to go to a crime scene to make findings?

A. No. What tends to happen is that in England, we get called to the crime scene where the bombing is in some -- or the crime scene is in some way unusual. Sadly, we have more than our fair share of car bombs, which we regard as fairly ordinary. So we get invited to some of the more unusual types of crime scene.

Q. Even though you don't go to some of these crime scenes, did you make findings?

A. Yes.

Q. And specifically have you studied ammonium-nitrate-based bombs?

A. Yes.

Q. And why is that?

A. Because the IRA uses improvised ammonium-nitrate-based explosives in their large truck bombs.

Q. Do they mix ammonium nitrate with fuel oil?

A. Not fuel oil. Not now, no.

Linda Jones - Direct

Q. What do they do?

A. They mix it with confectioner's sugar.

Q. Do they grind the ammonium nitrate when they do that?

A. Yes, they do.

Q. And once you grind the ammonium nitrate and mix it with sugar, is it an explosive material?

A. Yes.

Q. Is it considered a blasting agent, or is it considered a high explosive?

A. It could be. It's a high explosive.

Q. And to detonate that, what would you need?

A. Some form of booster, which can be ammonium-nitrate-based, and a blasting cap. The systems the IRA use, they not only improvise their main explosive charge, they improvise their booster, which is again ammonium-nitrate-based with detonating cord, and they then use a blasting cap.

Q. So with your work investigating IRA bombings, have you become familiar with the chemical properties of ammonium nitrate?

A. Yes.

Q. And other ammonium-nitrate-based explosives?

A. Yes.

Q. And have you done testing with regard to ammonium nitrate and its chemical properties as an explosive?

A. Yes.

Linda Jones - Direct

Q. Have you testified previously in cases both here and in England about ammonium-nitrate-based explosives?

A. Yes.

Q. Now, during your employment as a -- with DERA when you were doing forensic work, did you receive specific training?

A. Yes, I have.

Q. What type of training have you received?

A. When I came into the forensic lab, I already had extensive explosives experience and had attended courses in -- throughout my Ministry of Defense career, in the composition of explosives, their testing, their performance, their safe handling, how they would be used in a manufactured form, manufactured explosive devices; for example, those used by the military. And then when I came to the forensic lab, I concentrated on the forensic side of the work, on how to examine things in a forensic context.

Q. In your work, do you do instrumental analysis for chemical residues?

A. Yes.

Q. And are you organized a little bit -- is your lab and your work organized a bit differently from the FBI Chemistry and Toxicology Unit?

A. Yes.

Q. Do you also look at the damage to the crime scene itself?

A. Yes.

Linda Jones - Direct

Q. And have you had experience doing that, looking at truck parts, buildings, and other witness material?

A. Yes, I have.

Q. And have you testified concerning that damage previously?

A. Yes.

Q. Have you written any articles relating to explosives residue?

A. I'm not sure specifically about residue, but forensic explosives, yes.

Q. And about the investigations --

A. Yes.

Q. -- concerning those items?

Are you a member of any societies?

A. Yes. I am a member of the Institute of Explosives

Engineers.

Q. And in the past year, have you received any awards for your work in the forensic field?

A. Yes, I've been awarded the honor of Officer of The Order of the British Empire by her Majesty the Queen.

Q. When did you receive that?

A. I actually -- I was actually presented with it in March this year, but I was given it in her New Year's honors list at the beginning of this year.

Q. Now, did there come a time in this case when you were contacted by the Government regarding the investigation of the

Linda Jones - Direct
bombing crime scene?

A. Yes.

Q. Do you recall when that was?

A. Yes. It was March, 1996.

Q. What were you asked to do?

A. I was asked to provide an independent evaluation of some evidence.

Q. Since it was March of 1996, I take it you did not go to the crime scene --

A. No, I didn't.

Q. -- at that point?

A. Not at that time.

Q. What type of analysis were you supposed to conduct?

A. I reviewed videotapes, charts and plans, and some items recovered from the crime scene.

Q. Did you look at photographs?

A. Yes. Oh, I'm sorry, yes, and the photographs.

Q. And did you have access to any items that you requested in connection with the crime scene?

A. Yes, I did.

Q. Now, was there anything you weren't allowed to look at?

A. On my first visit, I didn't review any chemical evidence.

Q. And did you come to certain conclusions without reviewing the chemical evidence?

A. Yes, I did.

Linda Jones - Direct

Q. Did you then review the chemical evidence?

A. Yes. I produced a first report based on the videos, the photos, some of the items from the crime scene, and the charts and plans.

And then after I had submitted my first report, I was asked to look at some chemical evidence from the crime scene.

Q. Did you make additional findings based on that chemical evidence?

A. Yes, I did.

Q. And were you specifically precluded from looking at FBI Laboratory reports regarding the conclusions as to the type of bomb?

DOMB:

A. I saw no reports which detailed any conclusions of the type of bomb that had been used.

Q. All right. And have you ever seen such reports?

A. No.

Q. Tell us how you began your analysis in this case.

A. I began by coming to Denver and reviewing the photo -- the video and photographic evidence, some charts and plans of the crime scene, and looking at some of the pieces, particularly of the truck that were recovered from the crime scene.

Q. Did you do your own examination of those truck parts?

A. Yes, I did.

Q. Okay. And did you follow the same procedure -- that is, in reviewing documents and examining the debris -- when you've

Linda Jones - Direct
worked on cases back in England?

A. Generally, yes.

Q. Now, have you also become familiar with the Government's model of downtown Oklahoma City?

A. Yes.

Q. And would it assist you in showing the jury or explaining to the jury your findings as to the damage at the Oklahoma City bombing crime scene?

A. Yes, it will.

Q. Would it also assist you in describing the type of explosive that you believe was used at the Murrah Building?

A. Yes.

MS. WILKINSON: Your Honor, may the witness step down?

THE WITNESS: Yes.

BY MS. WILKINSON:

Q. Now, Miss Jones, if you can turn and face the jury so they can hear you. You told us you reviewed some plans of the Murrah Building; is that right?

A. Yes.

Q. And did you see the plans of what the Murrah Building looked like before the explosion?

A. Yes.

Q. Is this building, marked the Murrah Building, consistent with those plans?

A. Yes.

Linda Jones - Direct

Q. Take out this portion, this area. Did you also review photographs of the Murrah Building and the crater area?

A. Yes.

Q. And did you become familiar with the streets and the surrounding buildings in the Murrah -- from the Murrah Building?

A. Yes, I did.

Q. Now, can you tell the jury first what you noticed about the damage to the building.

A. The damage to the building, what struck me first was that

... the damage to the building, what extent the damage was that it appeared that a large bite had been taken out of the Murrah Building, and that had slid down predominantly into 5th Street, and that that site, the north side of the Murrah Building, there was a crater.

Q. And what did you notice about the crater?

A. The thing that impressed me most was the size. From the charts and the plans, it appeared that it was a big crater. It was of the order of 32 feet in diameter.

Q. Does the size of the crater assist you in any way in determining the size of the bomb that was used?

A. Very generally, yes.

Q. How is that?

A. It -- the size and shape of the crater will depend very much on the size and the shape of the bomb, but a crater of that size would be created by a big bomb.

Linda Jones - Direct

Q. And what about the damage to the building that you described?

A. Similarly, the building was extensively damaged. As I said, a large bite appeared to have been taken out of approximately two-thirds of -- I know it's the rear face, but the face of the building fronting onto 5th Street.

Q. Did you select some photographs to show the jury that would depict for them the damage that you relied on in making your conclusions?

A. Yes.

Q. If you could take your seat, please.

Okay. I'm going to show you Government's Exhibit 848,

which I don't believe is in evidence yet.

Do you see that?

A. Yes.

Q. Do you recognize this photo?

A. Yes, I do.

Q. Does this depict -- is this one of the photographs you reviewed in doing your work?

A. Yes.

Q. What does it depict -- just briefly, 'cause it's not in evidence yet.

A. Oh. It shows the crater.

MS. WILKINSON: Your Honor, we'd offer 848.

MR. TIGAR: No objection, your Honor.

Linda Jones - Direct

THE COURT: 848 received. You may proceed.

BY MS. WILKINSON:

Q. Now, Miss Jones, the jury can see what you see. So could you tell them what you noticed about the crater?

A. As I mentioned, the crater is big. This photograph has been taken very relatively soon after the explosion. And you can get an idea of the size of the crater --

Q. Miss Jones, if you'd like to use that pen there to mark for the jury --

A. Thank you.

Q. -- I think it's up top, right on the screen, and then they'll be able to tell what you're talking about.

A. Well, we've got the crater here. And if we look at the size of that, in comparison with the people standing around it, we can think of the people as providing some scale, then we can see that it's a big crater.

And then towards the right of the photograph, we can see where some of the rubble and the front of the Murrah Building has slid down towards the crater.

Q. Now if I could show you what's been marked as Government's Exhibit 854.

Will this photograph help you describe the damage that you saw to the building?

A. Yes, please.

Q. And does it show -- is this a side view of the Murrah

Linda Jones - Direct
Building?

A. Yes.

MS. WILKINSON: Your Honor, we'd offer Government's Exhibit 854.

MR. TIGAR: May I inquire briefly?

THE COURT: Yes.

VOIR DIRE EXAMINATION

BY MR. TIGAR:

Q. Good afternoon, Miss Jones.

A. Hello.

Q. That picture that you're looking at: Does that -- does it look like the crater has been filled in there? I can't see.

A. No, I don't know -- I don't know. I can't see -- I can't specifically identify the crater in this photograph.

Q. All right. And do you know when it was taken?

A. Not specifically, no.

MR. TIGAR: Your Honor, I don't think we have any objection. If I could know the purpose for which it's being offered.

MS. WILKINSON: The damage to the building. But you can see the date on there.

MR. TIGAR: 4-19. Thank you very much. Once we have the date, I have no objection. Thank you, your Honor.

THE COURT: It's received.

MS. WILKINSON: Just for the record, it's noted on the

Linda Jones - Voir Dire
photograph. Government's Exhibit 854, I don't think you can see on the screen -- yes, you can see it in the bottom right corner, April 19.

THE COURT: It's received.

RECESS EXAMINATION CONTINUED

DIRECT EXAMINATION CONTINUED

BY MS. WILKINSON:

Q. Now, Miss Jones, you said this was going to explain something about the damage of the building to the jury.

Excuse me. If we could have the photograph for the jury.

A. Here we can see the damaged face of the Murrah Building. And we can see that a bite -- well, the bite that I spoke of has been taken out of this area of the building. And the front of the building has slid down. The crater, I think is under generally about this area. But rubble and debris has fallen into it. So this would be 5th Street; and on the other side of the photograph, along here, we see part of the parking lot with some damaged vehicles.

Q. Now, I'm going to ask you a specific question about the building, about how that assisted you in your conclusions; but before I do that, would it be fair to say that you have to consider everything that you're going to describe for the jury before you came to any conclusions?

A. Absolutely.

Q. With that in mind, could you tell us if you could tell

Linda Jones - Direct

anything about the speed or the velocity of detonation of the explosive when you looked at the damage to the Murrah Building?

A. In general, the damage to the Murrah Building and the vehicles in the parking lot -- I concluded that the sort of explosive that was indicated was a high-performance explosive of midrange velocity and performance. It was generally a heaving- and a pushing-effect explosive, rather than a shattering explosive.

Q. All right. Now that you've put all those terms out there, why don't you tell us what a pushing and a heaving explosive is.

A. If we think of an explosive of a quarrying operation where what you want to do is bring down a rock face to produce fairly large materials for -- I don't know, as aggregate or whatever, then you will use a certain type of explosive, one that will heave and push, rather than shatter the material into little tiny pebbles.

Q. And is there a term that you use for the shattering effect?

A. Yes. All high-performance explosives will have some degree of shattering effect, and that shattering effect is termed "brisance."

Q. Now, then, what is the effect between that midrange velocity of detonation that you've talked about and the higher range?

A. All high-performance explosives can detonate; that is, set

Linda Jones - Direct

up a shock wave to pass through them. And that can range anything from around 6,000 feet per second to well over 20,000 feet per second. And in the higher range, it's not just

20,000 feet per second. And in the higher range, it's not just the velocity of detonation but very generally towards the higher end, the explosives will exhibit more shattering effects.

Q. And the damage to the Murrah Building you saw was consistent with which range?

A. The heaving, pushing midrange.

Q. Did you see similar or consistent damage to the cars in the parking lot?

A. Yes, I did.

Q. Now, did you assist in constructing a chart that would show the different velocities of detonation you could use to just demonstrate to the jury what you've just described?

A. Yes.

MS. WILKINSON: Your Honor, we'd offer Government's Exhibit 695 just for demonstrative purposes.

MR. TIGAR: No objection, your Honor.

THE COURT: Received for demonstrative purpose.

BY MS. WILKINSON:

Q. Miss Jones, if you could start on the left and tell us what -- beginning with the high category, what we're seeing here.

A. On the left of the chart, we've got the detonation

Linda Jones - Direct

velocities in feet per second, the next column gives examples of the sorts of explosives that would fall into that category, and the right-hand column gives information about the sort of effect you would be likely to observe when those explosives were detonated.

Q. Let's start with the examples you have for the high velocity explosives. What are they?

A. The high-velocity explosives, that's that detonate at over 20,000 feet per second, include some military explosives, such as your C-4 and Semtex. And they're used predominantly to shatter matter. They might be used in military operations in some sorts of shells, to breach tanks or metal structures.

Q. Below that you have examples for the medium range velocity; is that right?

A. Yes. Very generally they can be regarded as detonating between approximately 9- to 20,000 feet per second.

Q. What are examples of those types of explosives?

A. Some commercial blasting explosives, such as dynamite, ammonium nitrate fuel oils, and water gels.

Q. And those are the ones that you described to us have that pushing and heaving effect?

A. That's right, yes.

Q. Does that mean from this chart that if you had a midrange velocity explosive, there would be no shattering to metal?

A. No, there would be some shattering.

Linda Jones - Direct

Q. Why is that?

A. Because all high-performance explosives have some shattering potential. It's just with the medium range, the heaving and pushing will be the dominant feature.

Q. And do you have to look, if you're at a crime scene -- do you have to look at the entire crime scene to make that determination?

A. Yes.

Q. Now, down below, you have low explosives?

A. They're high-performance explosives, but in the lower of the three detonation velocity ranges. And we're looking now at the relatively slow shock waves that might go from about 6- to 9,000 feet per second.

Some commercial explosives fall into that category. For example, some dynamites and water gels that could be used in underground coal blasting where you want to give it -- the rock face more of a nudge than the blasting it away.

Q. Now, just to be clear, then, so I don't use the wrong terminology, these are all what you refer to as high-performance explosives?

A. Yes. They all set up a supersonic shock wave.

Q. And that's what detonation is?

A. That's what detonation is, yes.

Q. So these are categories within high-performance explosives?

A. Yes.

Linda Jones - Direct

Q. Now, did you select some photographs of cars in the parking lot to explain to the jury the damage that you saw there?

A. Yes, I did.

Q. Let me show you Government's Exhibit 847.

Do you recognize that photograph?

A. Yes, I do.

Q. Does that show the parking lot area in front of the Murrah Building?

A. Yes.

MS. WILKINSON: Your Honor, we'd offer 847.

MR. TIGAR: No objection, your Honor.

THE COURT: Received.

BY MS. WILKINSON:

Q. Tell the jury what you can see from this photograph, Miss Jones.

A. If we concentrate on the parking lot, although it's quite a distant photograph, we can see that a lot of the vehicles appear to have been displaced from where they were originally positioned. I don't think they'd have been parked quite this randomly. We can see some of them have been moved, and there appears to be a variety of damage to them.

Q. If we can, let's move on to Government's Exhibit 827, which is already in evidence.

Do you recognize this photograph?

A. Yes, I do.

Linda Jones - Direct

Q. What's depicted here?

A. This is the remains of a no-parking sign which was positioned across the street in front of the parking lot from the Murrah Building.

Q. And I'm going to show you that street sign. Government's Exhibit 826. Did you examine this before coming to court today?

A. Yes, I did. Thank you.

Q. And did that assist you in coming to your conclusions about the type of bomb used in the Murrah Building?

A. Yes.

Q. How so?

A. The bending of this piece of the sign was bent away from the Murrah Building. So a blast had come from in front of the Murrah Building and hit this no-parking sign.

But equally as important is the damage to the no-parking sign. It's been subjected to various shrapnel damage. Fragments of whatever have hit the sign from -- the painted surface and traveled through it. It's not shattered, it's bent and buckled and been penetrated by shrapnel.

Q. What would have propelled that shrapnel into the street sign?

A. The blast from the explosion.

Q. And does the blast from the explosion collect items or fragments that traveled with the blast wave?

Linda Jones - Direct

A. That's right. Fragments from the explosive device itself and from the surroundings will be projected at very high speeds in the blast wave.

Q. How does that occur?

A. When an explosive detonates, the shock wave initially passes through the explosive. At that stage, it will be traveling at miles a second. It then hits the outside and damages and breaches and to some extent shatters the container the explosive is in. And then fragments of any container or anything else that's in the path of the blast wave, which is like a giant tidal wave, will carry items forward at very high speeds which impact anything else in its pathway.

Q. Is there any way to predict what pieces will survive when an improvised explosive device detonates in a container?

A. Very generally, with a little more information. To some extent, yes, but not . . . not unequivocally because it's a relatively random event.

Q. What other types of information would you need to know?

A. To know what's going to survive, you really need to know -- or to be able to estimate what might survive, you really need to know how the bomb itself was made and what it contained.

Q. Do you need to know the size?

A. Yes. In general terms, yes.

Q. Now, did you also look at several photographs of the actual cars that were in the parking lot?

Linda Jones - Direct

A. Yes.

Q. Did that assist you in coming to your conclusions?

A. Yes, it did.

Q. Let me show you Government's Exhibit 850.

Do you recognize this photograph?

A. Yes, I do.

Q. And is this a photograph of the parking lot?

A. Yes.

MS. WILKINSON: Government would offer 850.

MR. TIGAR: No objection.

THE COURT: Received.

BY MS. WILKINSON:

Q. Tell the jury what you noticed about the cars in the parking lot from this photograph.

A. Thank you.

Here we've got a closer shot of the parking lot. And again, as I mentioned, some of the vehicles have been displaced. Some of them have been fire-damaged. I think perhaps some here. And certainly these in this general area.

Also, some of them have been ripped apart. Again, this is quite a distant shot to look at specific damage; but we can see that they're damaged and buckled, and some parts of them are missing.

Q. Let me show you now Government's Exhibit 852. Is this a closer shot that shows you some of the damage to the vehicles

Linda Jones - Direct

in the parking lot?

A. Yes, it is.

MS. WILKINSON: Your Honor, we offer 852.

MR. TIGAR: No objection.

THE COURT: Received.

BY MS. WILKINSON:

Q. What does this show us, Miss Jones?

A. This shows more particular damage. Here we can see this vehicle. Whoops. Some of the body panels are crumpled and dished inwards. I think its tire's missing. But the general area over here, we can see that vehicles have rolled and tumbled. There's been a crumpling and heaving and pushing effect on them. But most importantly, the damage appears to have been inflicted to them from the outside of them. The damage didn't occur from the inside to the outside.

Q. So what does that tell you about the improvised explosive or the bomb that was used in the front of the Murrah Building?

A. It tells me that the bomb consisted of a pushing- and heaving-type explosive and that the bomb wasn't in these vehicles.

Q. And what about the fire damage that you saw: Is that consistent, or inconsistent, with having one improvised device in front of the building, the Murrah Building?

A. That's totally consistent. In my experience, the fire damage tends to be rather random; that some vehicles will catch

Linda Jones - Direct

fire, almost as a spot fire, whereas other vehicles in the same general area of the blast wave won't catch fire.

Q. Let's look at one last photograph of the vehicles, if we could, Government's Exhibit 851.

Is this photograph significant to you?

A. Yes, it is.

Q. Does it show damage to the vehicles in the parking lot?

A. Yes.

MS. WILKINSON: Your Honor, we'd offer 851.

MR. TIGAR: No objection, your Honor.

THE COURT: Received.

BY MS. WILKINSON:

Q. Tell the jury what's significant in this photograph.

A. We can see some vehicles that have been flipped and tumbled and stacked upon each other. We can see one vehicle down here. These wheels here are from another vehicle that has tumbled. Its body work has been ripped off, and it's come to rest on top of the vehicle underneath.

But again, the body panels of the lower vehicle are crumpled and twisted and torn.

Q. And did that assist you in determining what type of explosive, or at least the range of the velocity of detonation of the explosive that was used in front of the Murrah Building?

A. Yes. In very general terms, yes.

Q. How is that?

Linda Jones - Direct

A. Again, it indicated a pushing- and heaving-type explosive.

Q. Now, in examining these photographs -- have you examined the Ford truck parts identified by Mr. Paddock?

A. Yes, I have.

Q. And have you examined the location of their recovery at the crime scene?

A. Yes.

Q. Was that of significance to you in determining what type of container was used to house this explosive device?

A. Very much so, yes.

Q. And were you able to determine what type of container was used?

A. Yes.

Q. And what was that?

A. I concluded that the bomb was contained in the load-carrying compartment of a Ryder truck.

Q. Were you able to determine in what direction the vehicle was parked before it was detonated?

A. Yes.

Q. And could you explain that to the jury by pointing out some of the pieces that were recovered?

A. Yes.

Q. Could you also show the jury some of the damage that you

saw to the actual vehicle parts?

A. Yes.

Linda Jones - Direct

MS. WILKINSON: Your Honor, may the witness step down?

THE COURT: Yes.

BY MS. WILKINSON:

Q. Miss Jones, we didn't wheel in all the pieces; but you're familiar with some -- with the locations of some of the truck parts; is that right?

A. Yes, I am.

Q. And do you recall where the front axle of the Ryder truck was recovered?

A. Yes. The front axle had traveled in an easterly direction and come to rest approximately 700 feet from the crater along N.W. 5th Street.

Q. Is that right before Broadway?

A. Yes.

Q. And are you familiar with where the rear axle of the vehicle was recovered?

A. Yes. The rear axle had traveled in a westerly direction along 5th Street and come to rest -- I think it was about 600 feet from the crater, outside the Regency Tower building.

Q. And did you review the location of any of the other major parts of the truck that were recovered?

A. Yes.

Q. All right. And can you point those out generally for the jury?

A. The -- four of the wheels were important to me. The

Linda Jones - Direct

remains of two wheels were recovered from inside the Murrah Building. One wheel had come to rest beneath a tree on North Robinson, and another wheel had come to rest along 5th Street between St. Joseph's Rectory and the Firestone building. That told me that the wheels -- the wheels being on each corner of the vehicle had gone in different directions.

Q. And was that consistent with your observations about the recovery location of the front axle and the rear axle?

A. Yes.

Q. What did you determine about the location of the vehicle prior to detonation?

A. I concluded that prior to detonation, the vehicle was positioned in the area where the crater now is. It was parked approximately midway or perhaps slightly easterly of the nine-story section of the Murrah Building, and its cab would have been facing eastwards; that is, towards North Robinson.

Q. And if 5th Street is one way this way, was the vehicle parked going in the same direction as traffic?

A. Yes.

Q. Now, did you also look at certain vehicle parts for damage?

A. Yes, I did.

Q. And have you brought some of those into the courtroom

Q. And have you brought some of those into the courtroom today?

A. Not personally. They've been brought here for me.

Q. Okay. Let me start by giving you a very small piece,

Linda Jones - Direct

Government's Exhibit 720. Did you examine that?

A. Thank you. Yes, I did.

Q. What did you determine?

A. I concluded this piece of metal had been very close to an explosion.

Q. How did you conclude that?

A. From the fact that I was aware that this had originally been part of a frame rail from a truck, and I knew that -- I knew that a frame rail is a substantial piece of metal. And for the fragment to get in this size, it had been subjected to a very strong force.

But also, there's a small -- it's almost covered by the label, but there's a small little pit or crater on this piece of metal which is indicative of a high-performance explosive having detonated near to it.

Q. Did you find other items from the crime scene that had that pitting and cratering?

A. Yes, I did.

Q. Let me show you Government's Exhibit 654. Do you recognize that?

A. Thank you. Yes, I do.

Q. Did you examine that?

A. Yes.

Q. What did you determine?

A. I concluded that this piece of metal had been close to

Linda Jones - Direct

the -- to an explosive event, particularly by the damage to it and a large area of pitting and cratering.

Q. And what is the -- can you describe for the jury in holding it up what you're talking about when you say "pitting and cratering"?

A. Yes. When I'm talking about the pitting and cratering, I'm talking -- I mean these little dents and indentations which are characteristic of a high-performance explosive event having occurred close to them, because when the blast wave comes out of the bomb, it will be carrying big and small pieces of debris and also unconsumed particles of explosives; and also there will be the hot gases washing over the surface which create these little almost moon craters.

Q. And did you compare this to a piece of the Ryder truck that was brought in by Mr. Paddock, the next Ryder truck off the line?

A. Yes, I did.

Q. All right. Let me get that for you.

Excuse me. I'm going to show you what's been marked for demonstrative purposes Government's Exhibit 655. Do you

for demonstrative purposes Government's Exhibit 655. Do you recognize this?

A. Yes, I do.

Q. Would this assist you in explaining to the jury some of your findings?

A. Yes.

Linda Jones - Direct

MS. WILKINSON: Your Honor, we'd offer 655 for demonstrative purposes.

MR. TIGAR: No objection.

THE COURT: Received.

BY MS. WILKINSON:

Q. Why don't you hold it up and you tell the jury what you found about the piece you have in your hand.

A. Yes, just get my bearings.

Q. There you go.

A. The damaged piece has lost its lever, but this piece of metal would have originally been mounted on the outside of the rear roll-up door of a Ryder truck. So the pitted and cratered surface, this side, would have been against the outside of the painted surface of the truck.

Q. What does that tell you about the location of the explosive device in the truck?

A. That the explosive device was in the box compartment of the truck.

Q. You told us that you examined several wheel rims that were found?

A. Yes.

Q. And did you examine Government's Exhibit 722?

A. Yes, I did.

Q. And what can you tell us about the damage to Government's Exhibit 722?

Linda Jones - Direct

A. It's buckled and twisted, and in some places it's torn. It's not shattered. It's crumpled and bent and buckled.

Q. What does that tell you about the explosive device used in front of the Murrah Building?

A. That it was of midrange, heaving and pushing performance and velocity.

Q. I don't know if the two of us can lift this, but this is Government's Exhibit 787.

Did you examine -- did you examine this for explosive damage?

A. Yes.

Q. And what did you determine?

A. I concluded that this again had been bent and twisted and torn, rather than shattered. This is one of the pieces of frame rail.

Q. Can you show the jury some of the areas that were bent?

A. Yes. This piece would have originally been a C section, so we can see it's been peeled open and just generally twisted and

distorted.

Q. Did that assist you in making your findings as to what type of explosive was used?

A. Yes.

Q. What did it tell you?

A. Again, it told me that it was a midrange velocity and performance explosive.

Linda Jones - Direct

Q. Were you also informed that a portion of the frame rail was found on top of a building approximately a block and a half to two blocks away from the Murrah Building?

A. Yes. I was.

Q. And what did that tell you about the size of the device or the power of the device?

A. Again, it was a big bomb for a piece of -- it was smaller than that this -- but for a piece of frame rail to have been projected from the seat of the explosion in N.W. 5th Street over these buildings to land on a roof on 6th Street.

Q. And here we have Government's Exhibit 713. Did you examine that?

A. Yes, I did.

Q. And do you recall where that was recovered at the crime scene?

A. Yes. That -- this fragment originated from part of the rear axle, part of the differential housing from the rear axle, so it would have been the back of the truck. And we said that the -- we established that the rear axle had come to rest outside the Regency Tower. That piece of metal had gone further than that in the same general direction, I think approximately 800 feet.

Q. And did that tell you something about the size or the power of the bomb?

A. Yes. It was a big bomb.

Linda Jones - Direct

Q. You can take your seat.

Now, you described for us on the rear door latch, the pitting and craters?

A. Yes.

Q. Is that right? Did that tell you anything about the type of explosive that was used?

A. Again, I concluded it was a midrange velocity because the latch hadn't been shattered.

Q. Are you able to determine from pitting and cratering with any more specificity -- excuse me -- specificity, the exact velocity of detonation of the explosive?

A. No.

Q. That just gives you a range?

A. That's right, yes.

Q. Now, after you conducted this examination, did you also review the chemical findings by Mr. Burmeister of Q507?

A. Yes, I did.

Q. Did you examine Q507, yourself?

A. Yes.

Q. And do you have an opinion about Mr. Burmeister's findings of ammonium nitrate on Q507?

A. Yes.

Q. What are they?

A. I concluded that the crystals that Mr. Burmeister removed from Q507 were ammonium nitrate.

Linda Jones - Direct

Q. Did that assist you in determining what type of explosive could have been used in front of the Murrah Building?

A. In conjunction with the damage to Q507.

MR. TIGAR: Objection to could have been, your Honor.

BY MS. WILKINSON:

Q. Well, that's consistent with?

THE COURT: All right.

THE WITNESS: I'm sorry, could we start that bit again.

BY MS. WILKINSON:

Q. Sure. Based on your conclusions about Mr. Burmeister's work on Q507 and all the damage, can you determine what explosive would be consistent with the chemical findings and the damage?

A. Yes.

Q. What did you find?

A. I concluded that all the findings were consistent with a bomb containing or including an ammonium-nitrate-based explosive.

Q. Now, with that in mind, could you tell the jury the exact explosive that was used at the Murrah Building on April 19?

A. No.

Q. Why not?

A. Because the bomb had detonated efficiently and only ammonium nitrate crystals were recovered. The ammonium nitrate

Linda Jones - Direct

wouldn't have been there on its own. As part of the explosive -- the explosive wouldn't only have been ammonium nitrate.

Q. Is the finding of ammonium nitrate consistent with the use of ammonium nitrate and a fuel?

A. It could be, yes.

Q. Is it consistent with the use of an ammonium-nitrate-based explosive like dynamite?

A. It could be, although the ammonium nitrate dynamites I'm familiar with also include nitroglycerine explosive; and --

Q. Go ahead.

A. And if I found ammonium nitrate crystals, if I'd got as much as -- enough to see, I would also expect to find some nitroglycerine.

Q. It's your understanding there wasn't nitroglycerine found

Q. It's your understanding there wasn't nitroglycerine found on Q507?

A. That's right. To the best of my knowledge, no organic explosives were found on Q507.

Q. Based on your examination, can you tell the jury whether this ammonium-nitrate-based explosive was used in the main charge or in the booster?

A. The finding of the crystals would suggest it was in the main charge. I don't know if it was also in the booster.

Q. And are you aware that no other high -- or no high-explosive residues were found at the crime scene?

Linda Jones - Direct

A. Yes.

Q. And is that consistent or inconsistent with a large, improvised explosive device being used in front of the Murrah Building?

A. Consistent.

Q. Why is that?

A. Some of the best materials for residue analysis will come from components that were very close to the bomb, the center of the explosion. And with a large -- particularly large bomb, those pieces are likely to be shattered and not recovered.

Q. Have you come to any conclusions about the size of the bomb used in front of the Murrah Building on April 19?

A. Yes. I concluded that it was a large bomb, and I estimated it would be of the order of 3,000 to 6,000 pounds of explosive.

Q. And if something like Primadet shock tube had been used to construct the explosive device in front of the Murrah Building, would you expect the orange shock tube to survive the blast?

A. Certainly not.

Q. Why not?

A. Because the shock tube would be at the very heart of the explosive device, and I would expect that it would be consumed in the explosion.

Q. What if blasting caps were used to construct the device? Would you expect fragments of the blasting cap to survive the blast?

Linda Jones - Direct

A. No.

Q. Why not?

A. Again because the blasting cap is going to be in the center or very seat of the explosion; and like any shock tube, it would be a very small component relative to the main explosive charge, and I would expect it to be consumed beyond recognition.

Q. You've told us that you believe that this improvised explosive device operated efficiently; is that right?

A. Yes.

Q. What do you mean by that?

A. I mean that it went off properly; that it didn't partially explode; that it detonated successfully.

Q. Does that mean that no residues or no fragments would be left behind?

A. No. Fragments and residues are always left behind. The problem is locating and recovering them.

Q. As part of your analysis, were you asked to review plastic fragments that were recovered from the crime scene?

A. Yes, I did.

Q. And did you review -- I'm going to hand up to you 786, 785, and 786B, which also have Q designators of 112 and 116.

A. Yes, I've seen these before.

Q. And did you come to any conclusions about those plastic fragments?

Linda Jones - Direct

A. Yes. I concluded some of them had been close to an explosive event.

Q. And how did you determine that those -- some of those fragments had been in close proximity to an explosive event?

A. By their appearance. That some of them are blackened, although I don't think they're particularly burned, but they're shredded and damaged and distorted. It's almost as if they've been chewed.

Q. Now, you told us you're familiar with the interaction of plastics and explosives; is that right?

A. Yes.

Q. Why is it, Miss Jones, that if that plastic was in close proximity to the explosion, it didn't just melt or burn or disintegrate?

A. These fragments are quite thick pieces of plastic. And I don't know how close they were to the explosion or the explosive, but I concluded they're fairly light pieces, and they could have been projected from the area of the bombing almost ahead of the blast wave.

Q. If they were -- if they were contained -- or from containers of ammonium nitrate and a fuel, could they have survived a large explosion of the type you've described for us?

A. It's possible, yes. An explosion of any sort -- an improvised explosion of any sort is a random event, so I wouldn't be particularly surprised.

Linda Jones - Direct

Q. But you can't tell us how close these fragments were to the blast; is that right?

A. Not specifically, no.

Q. Can you tell whether they were inside the building prior to the explosion?

A. No, although the ones that were found outside -- I know some of them were found outside the building. And based on that, I conclude that they wouldn't have been thrown -- I think some of them were some distance from the building. And because the blast pushed into the Murrah Building, I wouldn't expect the plastic to be thrown out for such a distance.

Q. Okay. So if some of that plastic was found here on the roof of the Journal Record Building and the crater is here, what do you conclude about the fragments that were here on the Journal Record Building?

A. I would conclude that the plastic was either in or close to the truck when it exploded.

Q. And what fragments that were found on the outside of the Murrah Building over here on what's marked as "Murrah west side"?

A. Similarly the plastic appears to have gone in a variety of directions, which again we said that the blast comes out radially from its seat in the truck. So, again, it would suggest that the plastic was close to or in the Ryder truck.

Q. Let's go back to that, if we could. Did you determine

Linda Jones - Direct

whether the crater was the location of the explosive device?

A. Yes, I concluded the Ryder truck was parked over where the crater now is.

Q. All right. And when it detonated, did you see a pattern of damage in the downtown Oklahoma City area?

A. Yes.

Q. What was that pattern?

A. The pattern was radially from the seat of the explosion, from the crater. The damage emanated in all directions.

Q. Did you make any conclusions about how many explosive devices were used to cause the damage to the Murrah Building and surrounding area?

A. From what I saw, I concluded there was one explosive device.

Q. Did you conclude that it was manufactured or improvised?

A. Improvised.

Q. Did you conclude how it was transported and contained?

A. It was contained in the load-carrying box compartment of a Ryder truck.

Q. Did you determine the range of the velocity of the detonation of the explosive?

A. I concluded it was a midrange velocity and performance -- high-performance detonating explosive.

Q. And you already told us that it was -- could be -- it was consistent with an ammonium-nitrate-based explosive?

Linda Jones - Direct

A. Yes, it was.

Q. You also told us the size; is that right?

A. Yes, between 3- and 6,000 pounds.

Q. Did you make any conclusions about the type of initiation used to detonate this device?

A. Very generally. I concluded that there would have been -- likely to have been some form of booster and some form of blasting cap. What I wasn't able to determine was what was used to set the explosion off. For example, bombs -- to set off a bomb, to protect the harbor, you need some sort of delay

on a bomb, to protect the bomber, you need some sort of delay between -- you need to put some distance between you starting the explosive chain of events, as the bomber, and the bomb exploding so you've got time to get away. Now, you can do that with something like an electrical circuit with a timer in it, or it can be a very straightforward sort of burning fuse.

But from what I saw, no evidence of any timing mechanism were recovered.

Q. Can you tell the jury how difficult it would be for someone to build a bomb of this size and type?

A. For someone with a basic knowledge of explosives and the materials available to them, it would be simple.

Q. And if you had the materials such as ammonium nitrate, nitromethane, det cord, Primadet, and blasting caps, could you?

MR. TIGAR: Object to the nitromethane, your Honor. There is no evidence from this witness about the possibility of

Linda Jones - Direct
such a thing.

THE COURT: Well, this is a hypothetical question.

MS. WILKINSON: Yes.

MR. TIGAR: Okay. All right.

BY MS. WILKINSON:

Q. Could you manufacture or build such a device?

A. Yes.

Q. Can you tell the jury how many people it would take to construct a device that you've described.

A. One person could do it on their own. More than one person could do it quicker.

MS. WILKINSON: We have no further questions, your Honor.

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

MR. TIGAR: All right.

THE COURT: You may step down now.

Members of the jury, we're going to take our usual 20-minute rest stop during which, again, please continue to follow the cautions given always when we stop in recess of avoiding discussion of the case or anything about it and avoiding anything outside of the evidence.

You're excused now, 20 minutes.

(Jury out at 3:20 p.m.)

THE COURT: We'll recess.

(Recess at 3:20 p.m.)

(Reconvened at 3:39 p.m.)

THE COURT: Please be seated.

(Jury in at 3:40 p.m.)

THE COURT: If you'll resume the stand, please, Ms. Jones.

THE WITNESS: Thank you, your Honor.

THE COURT: Mr. Tigar.

CROSS-EXAMINATION

BY MR. TIGAR:

Q. Good afternoon, Ms. Jones.

A. Good afternoon.

Q. You -- you are an officer of the British Empire. Is that

correct?

A. Yes.

Q. And you joined such luminaries as my favorite author, Gerald Durrell, in that and many other people who have accomplished a great deal. Is that right?

A. Yes.

Q. Now, you had the opportunity over the time you were working on this case to review the evidence that had been assembled at the Murrah Building crime scene; is that correct?

A. Yes.

Q. And in some -- you had questions that you would ask of the agents and they would answer them; correct?

A. Yes.

Linda Jones - Cross

Q. Now, in your -- in your work, this is not the first time in which you have had to review work conducted by forensic experts and agents from another country, is it?

A. That's right.

Q. And when you review work that's been done by agents from another country, you look at it from the standpoint of what your own standards are; is that correct?

A. Yes.

Q. For example, in the case of the Queen vs. Zekra, you were limited in what examinations you could do of samples that had been previously obtained by another police service in another country because you didn't know how they were handled; is that correct? Do you recall that?

A. Not -- I remember the case involving Mrs. Zekra, but I'm not sure which piece of the evidence you're referring to.

Q. Well, in that case the Israelis had found components or signs of PTA. Do you recall that?

A. No, there had been an indication.

Q. And you said that you didn't know how the samples were taken, how they were packaged, how they were sampled, or how they were protected against cross-contamination, so you didn't examine any soil samples from the crater in that case. Do you recall that?

A. I didn't examine any soil samples from the crater in that case but not because of what you said to start with.

Linda Jones - Cross

Q. Well, I'm asking you whether -- that case was tried in the Central Criminal Court; is that right?

A. In London, yes, that is right.

Q. And that was in Courtroom No. 1 in the Old Bailey; is that right?

A. I can't remember whether it was Courtroom No. 1 or 2, but it was certainly at the Central Criminal Court in the Old Bailey.

Q. And my question is do you recall testifying there "I don't know how the samples were taken, how they were packaged, how

they were sampled, or how they were protected against cross-contamination, so I didn't examine any soil samples from the crater"?

A. I remember not knowing how the Israeli people had taken the samples, but I don't remember saying about the soil samples as a direct lead-on from the -- the first part of what you said.

Q. Well, let me show you this transcript and ask if that refreshes -- excuse me.

I'm taking a trip, your Honor.

At the bottom, ma'am.

A. Thank you.

Q. -- if you recall saying that in front of his Lordship and the members of the jury on that occasion.

A. That's right. What you read is what I said, but I don't know without reading the rest of the transcript -- I don't have

Linda Jones - Cross

the context of the soil samples.

Q. I understand. I'm not going to ask you about that. That's another case.

My question is in that case in which Mrs. Zakra was charged, did you have some concern about how evidence had been handled by the police service of another country?

A. I didn't have any information at all about what -- how -- the samples the Israeli personnel obtained. I knew nothing about how the samples were recovered, packaged or analyzed, other than they were screened only using an EGIS machine.

Q. And is it correct that you are as a forensic scientist concerned about how samples are obtained in the field and then handled on their way to the laboratory where they can be analyzed?

A. Absolutely.

Q. And that is a legitimate subject of inquiry; is that correct?

A. Most certainly, yes.

Q. And it's also a legitimate subject of inquiry to ask what kinds of documentation is used by the police officials out in the field in how they collect the evidence. Correct?

A. Yes.

Q. In the United Kingdom, it is the habit of police officials at bombing crime scenes to use videotape; correct?

A. At some scenes they do but not at all scenes.

Linda Jones - Cross

Q. I understand. Well, in -- what's the most recent important bombing case in which you have given evidence? Would that be the Queen vs. Gannon and others?

A. I was in court the week before last in an IRA trial.

Q. Do you remember -- I'm sorry.

A. I think the Gannon case was perhaps back in May.

Q. In the spring of this year; correct?

A. Of this year, yes.

Q. Now, do you recall in that case that there was a videotape that showed a police officer using an unauthorized evidence-collection technique in connection with one of the defendants, Peugeot -- with a Peugeot automobile attributed to one of the defendants?

MS. WILKINSON: Objection, your Honor.

THE COURT: Yes. What's the relevance of this?

MR. TIGAR: To establish the witness' knowledge of proper evidence-collection techniques.

THE COURT: Well, I think you can ask that without getting into other cases.

BY MR. TIGAR:

Q. Have you had experience with evaluating whether or not evidence-collection techniques that are used by the police create a risk of contamination?

A. I think almost certainly, yes. I'm not sure I can remember a specific, but I feel I must have done.

Linda Jones - Cross

Q. And in fact, the analysis that the -- the procedures that are used to collect evidence have been of great concern in the United Kingdom. Correct?

A. They are of great concern, yes.

Q. Because you have -- as a matter of fact, you have written an article in which you state that "it is of concern that we have safe convictions and safe acquittals"; correct?

A. Yes.

Q. Is that right?

A. Yes, it is.

Q. And a part of making sure that we have safe convictions and safe acquittals is that we do not overstate the importance or relevance of forensic testimony. Would you agree with that?

A. Yes, I would.

Q. And in your article, you gave an example of how it might be possible to misinterpret forensic evidence. Do you remember that?

A. Could you remind me which article you're referring to.

Q. This is an article -- did you write an article in which you

set out a case in which several people had had access to the same storage area?

A. Is this the hypothetical area in the book chapter on explosion?

Q. The truck driver.

A. I have written -- co-authored a book chapter which we hope

Linda Jones - Cross

will be published at sometime on a book on forensic science; but the chapter I co-authored is on explosions. And I formulated a hypothetical case as part of that book chapter. I'm not sure if that's what you're referring to.

Q. Well, did this book chapter involve a passenger and a truck driver?

111111.

A. I think I would need to refresh my memory on it; but I'm sure it does. I'm not absolutely sure the scenario I created, but it was an imaginary one.

Q. All right. Well, we'll find the article and then we'll come back to it.

A. Thank you. I'd appreciate that.

Q. Now, when you've -- when is the first time that you became interested in what's been identified here as Government's Exhibit 664 or Q507?

A. I saw Q507 during my first visit to Denver, which I think was about September time, 1996. But then I was only concerned -- or I was only aware of its physical damage. I wasn't aware during that visit of any chemical components that had been analyzed from it.

Q. And did there come a time when you looked at the evidence

recovery log that showed when and where it had been recovered?

A. I've seen the FBI chain of custody log from the laboratory. I don't know -- I can't remember exactly what other logs I've seen. I have seen some because they're in my notes.

Linda Jones - Cross

Q. I'm going to show you a page of what's been introduced in evidence as Defense Exhibit E89. Do you recall having seen that before?

A. I've certainly seen it this week or last week when I was sitting in court. I think I have seen it before, but I couldn't swear absolutely to that.

Q. Were you in court when this item was received in evidence?

A. Yes, I was.

Q. And you recall the discussion at that time that the number 06 was missing?

A. I do.

Q. And the 06 is what would indicate Government's Exhibit 664 or Q507; correct?

A. So I have learned over the last week, yes.

Q. I'm going to show you now what I have marked as Defendant's Exhibit E4 --

A. Thank you.

Q. -- and ask you if you can recognize that.

MR. TIGAR: It's a page of her notes, your Honor.

MS. WILKINSON: Thank you.

Your Honor, he just flashed a piece of paper at me.

All I want to do is take a look at it.

MR. TIGAR: They've had a list of these things, your Honor, but here.

THE COURT: Well, she's entitled to what the witness

Linda Jones - Cross

is being shown.

MR. TIGAR: Of course.

MS. WILKINSON: No objection, your Honor.

MR. TIGAR: Then I offer it.

MS. WILKINSON: Not to it going into evidence, to you showing it.

MR. TIGAR: All right.

THE WITNESS: Thank you.

BY MR. TIGAR:

Q. Your turn.

A. Thank you.

Q. Do you recognize that as material from your notes?

A. Yes, I do.

MR. TIGAR: We offer it, your Honor.

MS. WILKINSON: I would object. I thought he was just using it to refresh her recollection.

THE COURT: Well, for what purpose are you offering it?

BY MR. TIGAR:

Q. Did you use this item to help you determine where Q507, Government's 664, had been recovered?

A. No.

Q. For what purpose did you use it?

A. It showed me the position of some of the vehicles in the parking lot. It was a piece of paper that was provided to me

Linda Jones - Cross
together with other pieces of paper.

Q. Do you see that -- the "06" there?

A. Yes.

Q. Do you know who wrote that?

A. No.

Q. Was that on there when you received it?

A. Without checking my copy, I cannot say.

Q. Do you have your copy with you?

A. Not here in the witness box. I have it here in Denver with me.

Q. Is it in the court?

A. Yes.

MR. TIGAR: Your Honor, may she look at it for comparison purposes?

THE COURT: Is it here in the room?

THE WITNESS: Yes, your Honor. It's in my case down in the corner somewhere.

THE COURT: Well, you may step down and recover it.

THE WITNESS: Thank you, your Honor.

BY MR. TIGAR:

Q. Page 188.

A. 188. Thank you.

Sorry. I can't read my own writing.

Yes. I'm sorry. It's the photocopy. I do have it, and "06" is present on my copy.

Linda Jones - Cross

Q. Is what I'm showing you that has been marked as Defendant's Exhibit E4 a true and accurate copy of what was furnished to you by the FBI?

A. As I said, it hasn't copied -- yours hasn't -- hasn't copied terribly well. Some pieces haven't come out on it; but yes, it looks -- yeah.

Q. And does this notation at the top indicate that that's out of your files; is that correct?

A. That's my handwriting, yes.

MR. TIGAR: We offer E4, your Honor.

MS. WILKINSON: Your Honor, as long as we put another copy in for Ms. Jones showing all the markings. If I understand, her testimony is not all the markings came out. But as long as we can do that after court, I have no objection.

MR. TIGAR: Yes. This is marked "best copy available."

THE COURT: All right. Then another copy can be made with your permission.

MR. TIGAR: Of course.

THE COURT: We'll receive E4.

BY MR. TIGAR:

Q. I'm now going to place what has been received as Defendant's Exhibit E4 on the overhead. I'm going to zero in. You see the 06 here?

A. Yes.

Linda Jones - Cross

Q. Now, was that on there when you received this document from the Federal Bureau of Investigation?

A. Yes.

Q. And would you agree with me that the "06" is not present on Defendant's Exhibit E89, the document that the FBI agents were here and testified about the other day?

A. What you're showing me on the screen now does not include "06."

Q. And you heard the testimony of the agents concerning that; correct?

A. Yes.

Q. Now, in terms of the procedures that are followed in the United Kingdom, it is desirable, is it not, to record the location of an item of evidence that is recovered at the time that it is recovered and on the evidence recovery log that is then being prepared?

A. Ideally, yes, at the time, or very soon afterwards.

Q. And you first received E4 when?

A. I'm sorry. Could you remind me what E4 is.

Q. I'm sorry. It's that page from your notes.

A. With the "06" on it?

Q. Yes, with the "06."

A. That would have been after the first report that I did, so -- I can't remember the exact date, but it would be after September, 1996.

Linda Jones - Cross

Q. All right. Because you did two reports; correct?

A. I did, yes.

Q. And one did not take account of Q507 and the second one did; correct?

A. The first one didn't take account of the chemical analysis of Q507; that's right.

Q. And the second one did?

A. It did, yes.

Q. So you don't know, do you, who put "06" on there or when they put it on you -- on there. Correct?

A. That's correct. I don't know.

Q. Now, is it also desirable in terms of the procedures followed in the United Kingdom to photograph items of evidence at a scene before they are moved?

A. In a -- in ideal circumstances, that's certainly preferable but not essential.

Q. And you so heard the testimony that as to some items they were photographed before they were moved and the agent testified as to some items they were not?

A. Yes, and I think that's generally the same at home. Circumstances dictate.

Q. But at home -- you mean in the United Kingdom?

A. Yes, in England.

Q. It is certainly the case that officers are supposed to document in some way exactly where something was found, whether

Linda Jones - Cross

they do it by a photograph or marking on a grid or by a videotape or some way; correct?

A. There will be some record made. Not always immediately when the item is located but as soon as practical afterwards and while their memories are still fresh.

Q. And you heard the testimony of the agents about who remembered who took the photograph and all the rest of that; correct?

A. Yes.

Q. Now, with respect to collection of evidence --

A. Yes.

Q. -- you're quite familiar, are you, with how you test for these organic explosives; is that right?

A. Yes.

Q. And in the United Kingdom, if you intend to test for organic explosives, would you use ordinary polyethylene bags to collect evidence at a bombing scene?

A. Again, the polyethylene bags aren't ideal, but they're often used.

Q. And why aren't they ideal?

A. Some high-performance explosives, particularly the liquid ones such as nitroglycerin, are volatile and will seep through polyethylene bags.

Q. And nitroglycerin is one ingredient of ammonium-nitrate-based dynamites; correct?

Linda Jones - Cross

A. Some dynamites, yes.

Q. So if one were concerned to try to identify the presence of ammonium-nitrate-based dynamites, one would not use polyethylene bags; correct?

A. That wouldn't be ideal, but again circumstances dictate. A polyethylene bag is better than no bag.

Q. Understood. But in the United Kingdom, what kind of bags do you recommend?

A. For explosive-residue analysis, wherever practical, we recommend a different type of plastic bag, which is a nylon bag.

Q. A nylon bag?

A. Yes.

Q. Now, would you also agree that chain of custody of the evidence is very important?

A. Yes.

Q. And it is important to identify who recovered the item?

A. Yes.

Q. To whom they gave it?

A. Yes.

Q. And who transported it to the Evidence Control Center?

A. Yes.

Q. And you heard the evidence with respect to that in this case; correct?

A. Yes.

Linda Jones - Cross

Q. Is that right?

A. Yes, I did.

Q. Now, in this scene, you've told us about a number of

findings that you were able to make based on analyses of different things that were found at the scene; correct?

A. Yes.

Q. For instance, you told us about parts of the Ryder truck. Do you recall that?

A. Yes.

Q. Now, the piece -- this is Government's 654. That is a piece of the handle on the cargo box?

A. Yeah. It's -- the flat piece with the damage -- that's -- would have been the part that would have been affixed to the back of the truck, almost as support for the lever that would operate --

Q. Is it your understanding that this is located -- do we have the other sample?

MS. WILKINSON: It's right here. 655.

BY MR. TIGAR:

Q. 655. So 654 -- this flat metal piece with the pitting and cratering would have gone on the outside. Correct?

A. It would, yes.

Q. Okay. And it's your testimony that the device --

MR. TIGAR: Excuse me, sir.

BY MR. TIGAR:

Linda Jones - Cross

Q. -- exploded with sufficient force to create pitting and cratering through the fiberglass-reinforced plywood and onto this metal surface. Is that right?

A. Yes, it is.

Q. Now, this is located at the rear of the cargo box; correct?

A. Yes.

Q. And what is your conclusion as to where the device was located in the cargo box?

A. I don't know precisely, but I think it would have been likely to have been towards the cab end of the box.

Q. Now, you told us that the rear axle, which the jurors have seen but we did not --

A. Yes.

Q. -- heft around here, was found here in front of the Regency Tower. Correct?

A. That is right.

Q. You can't see it, but where I'm pointing?

A. Yes.

Q. And that the front axle was found about where?

A. I think -- keep going.

Q. Keep going?

A. Around there, I think.

Q. Around there?

A. I think so generally.

Q. Now, that's consistent with something having blown the rear

Linda Jones - Cross

axle backwards and the front axle forwards if the truck is pointing in an easterly direction; correct?

A. Yes.

Q. And does that suggest to that you the explosive charge was placed forward of the rear axle so as to exert that backward pushing force?

A. Yes.

Q. So it is your testimony that the pitting and cratering that we see here was made -- was about how far from the explosive device that was in the Ryder truck?

A. I don't know how -- I don't know the volume the explosive would have occupied, but that would have been beyond -- that latch would have been beyond the rear axle. I'm sorry. Is that what you asked?

Q. Yes. By looking at a diagram of the Ryder truck and how it's built, we could determine that distance; correct?

A. Yes, we could.

Q. Okay. Now, are you acquainted with a man named Paul Rydlund?

A. No. I know the gentleman's name, but I've never met him.

Q. Do you recall his name in connection with the field of operation

Q. Do you regard him as authoritative in the field of ammonium nitrate/fuel oil explosives?

A. From what I've heard, I certainly do.

Q. Have you read his testimony in this case?

A. Not in this trial.

Linda Jones - Cross

Q. You read it in another trial?

A. Yes.

Q. All right. Now, have you -- do you have an opinion as to whether the device that blew up the Murrah Building exploded efficiently or not?

A. Relatively efficiently, yes, I think it did.

Q. And do you have an opinion as to whether an efficiently detonating ammonium-nitrate-based device contained in plastic barrels would upon explosion consume the barrels?

A. It could do, but equally some fragments could remain.

Q. And that is your opinion; correct?

A. It is my opinion, yes, based on some experience of the behavior of plastics in explosions.

Q. Now, you said that you had been to or examined between 550 and 600 crime scenes; correct?

A. Not crime scenes. Forensic explosives cases.

Q. And how many of those involved ammonium nitrate?

A. Ammonium-nitrate-based explosives, perhaps 20 -- I was going to say about 20 to 30. There would be 20 to 30 post-explosions or recoveries of bombs, but there would have been many more related to residue analysis.

Q. And when you say "residue analysis," what do you mean?

A. Looking for -- if I could explain a little bit.

Q. Of course.

A. When -- for example, if there is a large explosion of a

Linda Jones - Cross

truck bomb in England, then the -- the crime-scene case would be -- would count as one, one case. But also associated with that, if people are arrested, there might be residue analysis carried out from various addresses or vehicles or so on, and they will count as cases in their own right. So I would say that probably 20 to 30 of the explosions or recoveries of materials but many more --

Q. Many more cases.

A. Yes.

Q. So one explosion event can lead to more than one case. Is that right?

A. Yes.

Q. Okay. Now, when you were first retained here, you were concerned about what the weather conditions were; correct?

A. Yes.

Q. And what were you told?

A. I was told that -- I asked a series of questions in relation to Q507 recovery and analysis.

Q. Yes.

2. 100.

A. I was told that it rained on April 19 and then there was no more rain until after April 21. I think that's -- yes, until after April 21.

Q. And were you told that the crystals were embedded into the plywood?

A. Yes, I was.

Linda Jones - Cross

Q. Were you told that there was a glaze of crystals in the plywood?

A. I saw that in Mr. Burmeister's notes; that he described it as a glaze.

Q. When did you first see the notes?

A. Between September and December, 1996.

Q. And did you regard what you had seen as trace evidence; that is, the Q507?

A. No.

Q. Excuse me. Do you remember testifying in a previous trial that "I've reviewed Steven Burmeister's finding with respect to Q507 and some other of the trace evidence"?

A. Yes.

Q. And did you mean by that to distinguish the trace evidence from Q507, or were you regarding Q507 as a part of the trace evidence?

A. It wasn't well-worded, but I would regard Q507 not as trace evidence, but it was a low level, rather than -- it wasn't pounds of material. I would regard it as -- I think "bulk" is too strong a word, but anything visible, I wouldn't regard as trace. But I reviewed, I think, the results from about 350 samples.

Q. Yes. Now, you say you did review. You reviewed about 350 samples. Is that right?

A. Or the results from about 350.

Linda Jones - Cross

Q. Now, have -- you have never found -- in all the ammonium-nitrate-based explosive scenes in which you have ever investigated, you've never found crystals. Is that right?

A. Only one instance, but I'm afraid that bomb didn't detonate efficiently, so I got pounds of it, but not -- I haven't found crystals in the Q507 way.

Q. In fact, you've previously testified, "I haven't found crystals." Correct?

A. Not in the Q507 way; that's correct.

Q. For a device that detonated?

A. Exactly.

Q. And this device clearly detonated?

A. This device detonated.

Q. Is there any scientific literature that reflects that anybody else has ever found crystals?

A. Not so far as I'm aware.

Q. This is one of these instances in which "anything is

possible"?

A. Within the context of the crime scene, yes.

Q. In fact, you've testified previously: "Anything is possible"; right?

A. I might well have done.

Q. And so do you know of anybody who has presented a paper, any scientific literature that says "I found crystals"?

A. Not in this sort of context, no. I can't say -- not so far

Linda Jones - Cross

as I'm aware.

Q. One of the elements of science is repeatability; correct?

A. In chemical analyses, yes.

Q. That is, where -- when we put diphen -- what's that stuff called? That substance -- diphenylamine -- that makes things turn blue?

A. I call it diphenylamine, but that's not how it's pronounced here.

Q. All right. Well, whatever that stuff is, every time you put it on an oxidizer, the stuff turns -- it turns blue?

A. On a range of oxidizers, yes.

Q. And that's called -- that's repeatability; right? It's going to happen every time that it contacts an oxidizer -- that's what's going to happen; correct?

A. If you do exactly the same thing with exactly the same materials and same amounts, yes.

Q. That's right. And that is the hallmark of the scientific method -- correct -- is that you can get the same results again if you do the same experiment? That's how you verify things, isn't it?

A. Not in all scientific work, no. But with laboratory testing as you describe with chemical analyses, you should be able to devise experiments to illustrate the repeatability.

Q. But we don't have anything in the literature about crystals for exploded devices, do we?

Linda Jones - Cross

A. An explosion is a random event. If we do exactly the same explosion a number of times, we will get different results.

Q. Now, you also looked at pieces of plastic, did you not?

A. Yes.

Q. Now, can you tell me -- let us assume hypothetically that the device -- we're talking about a device in the 4,000-pound range.

A. It would encompass 4,000 pounds, yes.

Q. I understand that's your estimate, but I'm going to ask you a hypothetical question.

A. Yes.

Q. I'm going to ask you to imagine that the device is in plastic barrels.

A. Yes.

Q. That each barrel has ammonium nitrate and fuel oil in it.

A. Yes.

Q. Now, I'm going to ask you when you -- if you use a barrel -- if the bomber uses a barrel --

A. Yes.

Q. -- with ammonium nitrate in it and pours the fuel oil in, the fuel oil will make contact with all the prills; correct?

A. It depends how much you put in, but it will be absorbed on the prills it comes into contact with as it's seeping through the barrel.

Q. In the 6 percent range. If you do it in the 6 percent

Linda Jones - Cross

range and use fuel oil, it would all come in contact with the prills. Correct?

A. I can't say every single prill; but in general, yes, that's the idea.

Q. Now, ammonium nitrate and fuel oil with a 6 percent mixture of fuel oil is not necessarily cap-sensitive, is it?

A. Not necessarily, no.

Q. And by not "necessarily cap-sensitive," that means if I put a blasting cap in the middle of that barrel and bang it off, maybe it will go and maybe it won't?

A. That's right. It wouldn't be reliable.

Q. So to make this reliable, our bomber would have to put something else in there as a booster. Correct?

A. That would be sensible, yes.

Q. So let's assume that a booster was used, some commercial ammonium nitrate product.

A. Yes.

Q. And then that commercial product would be cap-sensitive; correct?

A. That would be -- you would select a cap-sensitive booster.

Q. And for -- now, often when testifying in the United Kingdom, you try to put yourself in the position of the person that made the device; correct?

A. Sometimes I do, yes.

Q. Well, you did it, for instance, in the Gannon case; right?

Linda Jones - Cross

A. I might have done.

Q. And I only mention that because I think we saw each other there.

A. Did we?

Q. Excuse me. I'm sorry.

Is it unfair to you -- is it unfair to you to ask you to imagine yourself constructing this device?

A. No.

Q. All right. I'm sorry.

A. No, I'm sorry, too.

Q. Now, the booster is then cap-sensitive; correct?

A. Yes.

Q. Now, if our bomber used Primadet --

A. Yes.

A. Yes.

Q. You're familiar with what Primadet is; right?

A. I'm familiar with the -- the shock-tube principle, yes.

Q. And you know that Primadet is a brand of shock tube?

A. Uh-huh. Yes.

Q. And in this case -- please go ahead and have a drink of water.

A. I'm sorry. I'm trying to compose myself.

Q. In this case, you did examine pictures of Primadet. Is that right?

A. No.

Q. Oh, did you examine -- did you find out about any Primadet

Linda Jones - Cross

that was recovered anywhere in this case?

A. Not until I sat in court last week.

Q. And have you -- are you familiar with the concept of Primadet being or the shock-tube things having a very small quantity of explosive on the inside of a plastic tube?

A. Yes, I am.

Q. And are you familiar with the manufacturer's contention that the shock tube survives the passage of the -- the fire through the tube?

A. No.

Q. You've not read any product literature to that effect?

A. I don't remember that, no.

Q. Now, the plastic in which shock tube is made is what kind?

A polyethylene, or --

A. I don't know.

Q. Don't know. Now -- all right. Suppose our hypothetical bomb, the Primadet -- or if a shock tube was used, that would be placed in general on the outside of the barrels?

A. It could be, or it could be -- it could be outside, or leading into the barrels.

Q. Now, if -- The cap, of course, would have to be down inside the barrel; correct?

A. Yes.

Q. And then the other part might or might not be led out to be connected. Correct?

Linda Jones - Cross

A. Yes.

Q. In the case we're putting here, this hypothetical case, you'd have to interconnect the barrels; correct?

A. You wouldn't have to, but that would enhance the reliability.

Q. All right. And again, we see that this was an efficient device; correct?

A. Yes.

Q. Now, after -- and you did not -- there was no evidence in this case of a time delay; correct?

A. Not from the --

Q. Or clock?

A. That's right. Not from the items that I examined or became aware of. I didn't see any evidence of a timer.

Q. Now, does that lead you -- so does that suggest to you that this was ignited by some sort of time-delay fuse?

A. It would suggest that, but it wouldn't rule out the use of a timer.

Q. Did you review video taken from the Regency Tower video camera shortly before 9:02 in the morning on the 19th?

A. I don't know what time it was. I saw a short sequence of video footage from the Regency Tower. I wasn't aware -- I don't know what time in the morning it was.

Q. Did you see a video of a Ryder truck coming into view, pausing and then moving on?

Linda Jones - Cross

A. I recall seeing a video of a truck passing the Regency Tower filmed apparently from inside the Regency Tower.

Q. Do you recall whether or not the truck paused?

A. I don't remember.

Q. So that didn't play -- whether it did or not, that did not play any part in your analysis; is that correct?

A. No. I think I've only seen that relatively recently, either just before the first -- I don't know. Certainly after I wrote my reports.

Q. Now, if no timing device was used --

A. Yes.

Q. All right -- then the most likely method of ignition is some sort of safety fuse that burns at a prescribed rate; correct?

A. That would be easiest -- not the safest, but the easiest method, yes.

Q. And once that fuse is lit, the bomber had better get out of the way; correct?

A. The bomber certainly should make their escape quickly.

Q. If the bomber wants to survive?

A. Exactly, yes.

Q. Now, in our hypothetical case, is it your testimony that the plastic barrels, if the device were efficiently constructed -- that pieces of them might survive?

A. They could do, yes.

Linda Jones - Cross

Q. Now, again, is there any literature on that subject?

A. I don't know.

Q. Now, once this thing goes off, it exerts an enormous outward force in all directions; correct?

A. Yes.

Q. And for all practical purposes, that force is equal 360 degrees around; that is, in all directions. Correct?

A. It tries to be.

Q. Now, that could be influenced by the positioning of, in our hypothetical, some barrels. Correct? They could be put in a

particular shape?

A. It's influenced by a number of factors, including the size and the shape of the bomb, how it's packaged, how it's contained. There is a dozen or a couple of dozen factors that will influence that, yes.

Q. 30 centimeters or approximately 1 foot from the center of initiation in any given barrel in our hypothetical case --

A. Yes.

Q. -- what is the temperature that one can expect to see a few minutes -- a few milliseconds after explosion -- after initiation?

A. I don't know. Again, it would depend on the explosive.

Q. I've asked you to assume ammonium nitrate/fuel oil boosted with an ammonium-nitrate-based dynamite and ignited with a cap integral to a shock tube.

Linda Jones - Cross

A. If you're asking me a specific temperature, then my answer is I don't know.

Q. Can you give me a range of temperatures?

A. It will be likely to be thousands of degrees Celsius.

Q. And thousands of degrees Celsius is certainly enough to create the toffee-apple effect on polymers?

A. It can be, yes.

Q. And what is the toffee-apple effect?

A. It's a melting of some of the pieces of plastic so that you get little globules of plastic formed --

Q. And --

A. -- with some types of plastic.

Q. I understand. And whether you get the little globules depends on what kind of plastic, what the melt point is, and so on?

A. Some of the factors, yes.

Q. Now, if the pieces of plastic that were -- that contained our hypothetical device survived, would you also expect other plastic items that had also been used in constructing the device to survive?

A. It would depend what they were and where they were, so they might or might not survive.

Q. If the plastic was outside the barrel containers, would it be more, or less likely to survive than the actual containers themselves?

Linda Jones - Cross

A. Again, it would depend on the type and configuration of the plastic.

Q. That is to say, its melt point and its other characteristics. Is that correct?

A. Its thickness -- for example, if there was a plastic bag outside the barrel.

Q. Now -- I'm sorry. Go ahead.

A. I was going to say if there was a plastic bag, I wouldn't expect the plastic bag to survive.

expect the plastic bag to survive.

Q. Because it's much thinner than the barrel material and made of a different substance; correct?

A. It's much more flimsy. It would get shredded and blown -- be likely into pieces that would be unrecognizable.

Q. Now, how many pieces of plastic were you shown?

A. I can't remember as a number. I saw a number of bags of plastics fragments.

Q. Now, you were asked particularly to look at just a few; correct?

A. A few fragments, or a few bagfuls? I'm sorry. I wasn't asked --

Q. How many Q numbers were you asked to look at in terms of plastics?

A. I can't remember how many I was asked to look at, but I would guess I looked at perhaps 10 or so bags of fragments.

Q. And with respect to any one of those fragments, any one

Linda Jones - Cross

that you looked at, were you able to tell how close they had been to an explosive device?

A. Only with some of them to say they were close. Others weren't explosive --

Q. Go ahead. I'm sorry.

A. Other fragments I looked at weren't explosively damaged, they were just broken.

Q. And when you say "close," how -- are you able to say within a certain number of meters how close?

A. No.

Q. And -- well, are you able to give us a minimum closeness?

A. No.

Q. So it could be 20 meters?

A. No. I think that's too far away.

Q. All right.

A. I think the plastics fragments I described as being close were in or near the Ryder truck. And I'm just trying to get a feel for what I mean by "near." I think they would have been -- if we imagine -- and I'm not saying this was the case.

If we imagine that the plastic wasn't in the truck, I would have put it in terms of a distance but not necessarily in this position -- in a distance between the truck and the building -- the Murrah Building.

Q. So that what you saw on the plastic is consistent with something being outside the truck but between the truck and

Linda Jones - Cross

something else; correct?

A. I think if --

Q. The plastic you found was recovered from a -- away from the Murrah Building -- the plastic you looked at; correct?

A. I'm talking about where it was originally, yes.

Q. Now, is what you saw consistent with the plastic having

been in this parking lot just across the street from the event?
A. I'm looking -- I'm trying to gauge the distance between the crater and the building and the crater and into the parking lot, so I would think sort of a radius around the truck but not extending into the building.
Q. All right. What -- how large a radius are we talking?
A. I can't put a figure on it.
Q. Were you asked to look at any plastic fragments that had been recovered inside the Murrah Building?
A. I can't remember if some of them came from inside the Murrah Building.
Q. Were you asked to look at a piece of blue PVC plastic in particular that had been recovered -- and told had been recovered from one of the victims?
A. Not that I recall. I saw a number of colored rather than the -- the white or translucent plastic. I saw a number of colored fragments, but I don't remember a fragment that I was told had been recovered from a victim.
Q. Now, a little while ago, I was asking you about an article.

Linda Jones - Cross

And I don't want to offer this, but I just want to look at it. Is that the chapter you're referring to?

A. Yes, it is.

Q. And you co-authored that with Mr. Marshall?

A. With Dr. Marshall.

Q. Dr. Marshall.

Now, in that, do you warn us against the over -- making too many conclusions from forensic evidence?

A. In this imaginary case that I -- that I put together, the moral of the tale, if you will, is that you've got to wait till you get to the end of your analysis before you come to your considered conclusion.

Q. Right. And that was a hypothetical in which five people had rented a lockup garage and each of them had a key; correct?

A. If you say so. There were a number of people.

Q. Page 23.

A. Thank you.

Yes.

Q. All right?

A. Yes, there were five people.

Q. What's a lockup garage? A storage shed?

A. It could be, yes.

Q. All right.

A. But a lockup garage is usually one you put a car in, but a storage shed would be fine.

Linda Jones - Cross

Q. And there was forensic evidence consistent with the guilt of two individuals but one was not guilty and the other was; correct?

A. Well, that was what my imaginary court decided. But there

was evidence that could suggest an involvement and an illegal involvement by one or more people.

Q. And so what you're telling us is that it's important to go beyond -- it's important not to overstate the value of forensic evidence; correct?

A. It's important to know the limitations of what you're finding.

Q. Now, specifically with respect to your findings here, are you able to tell us what the main charge was?

A. Not specifically, no.

Q. All right. Is it your view that it contained ammonium nitrate?

A. Yes.

Q. Are you able to tell us whether it was a commercial ammonium nitrate, or a homemade or improvised one?

A. I don't know that.

Q. Are you able to tell us whether it contained fuel oil, or not?

A. I don't know that.

Q. Are you able to tell us whether it contained nitromethane, or not?

Linda Jones - Cross

A. I don't know. Sorry. I don't know that.

Q. And how many products out there in the explosives field do contain ammonium nitrate?

A. I can't put a specific number on it, but ammonium nitrate is used in a range of manufactured explosives formulations.

Q. Now, is it your opinion that a booster was employed?

A. I don't know that, but my experience tells me that was most likely.

Q. Well, the reason -- that is, if ammonium nitrate and fuel oil were used, that's not cap-sensitive -- correct -- necessarily?

A. Not as a loose fill in, for example, a barrel. There are ways that it could be -- there are ways that the ammonium nitrate/fuel oil could be improvised into a booster.

Q. By adding some other things; is that right?

A. Or the way it's packaged.

Q. Now, are you able to tell us whether or not a product called Tovex was used?

A. I can't know that.

Q. Are you able to tell us whether or not a product called Kinepack was used?

A. I can't know that.

Q. Are you able to tell us whether any binary explosive was used?

A. I cannot know that.

Linda Jones - Cross

Q. Are you able to tell us whether an electric or nonelectric blasting cap was used?

- ..

A. No.

Q. And you're not able to tell us for sure whether or not any timing device was used; correct?

A. I think some sort of timing device was used, but I don't know that it was an electrical timer.

Q. That's what I'm saying; that is to say, the -- if the bomber survived --

A. Yes.

Q. -- there would have to be some sort of timing device?

A. There would have to be some sort of time delay between the bomber leaving the truck and the bomb exploding.

Q. And you're not able to tell us whether that time delay was the result of some time-sensitive or timed safety fuse or from some other type device; correct?

A. That's correct. I cannot know that.

Q. And you also -- however, since no actual clock-type device was found --

A. Yes.

Q. -- it's your conclusion it's more likely it was not one of those mechanical clock-type devices; is that right?

A. It could easily have been a non-clock device, because again no evidence of an electrical circuit so far as I'm aware were recovered.

Linda Jones - Cross

Q. Now, you showed us some pictures of some automobiles that were in the parking lot. Correct?

A. Yes.

Q. And you said that what you saw was consistent with them having caught on fire. I'm going to put up on the screen Government's Exhibit 851. And that is -- those are some automobiles -- let me zoom out here.

A. That's better. Thank you.

Q. There you are. Those are burned; correct?

A. Yes.

Q. And that's consistent with the gas tanks having exploded; correct?

A. Not necessarily.

Q. Now --

A. But it could -- it could have been caused by the gas tanks rupturing, yes.

Q. Well, you saw -- if we look at Government's 854, we can see some burnt-out areas in here -- correct -- where my finger is pointing?

A. Yes.

Q. And then some burnt-out -- can you see any burnt-out automobiles in this area here?

A. Not so much from this photograph, but I know some of those vehicles were burnt from other photographs.

Q. And looking at Government's Exhibit 852, we can see these

Linda Jones - Cross

automobiles. Some are flipped because the wheels are on top

automobiles. Some are flipped because the wheels are on top and burned?

A. Yes.

Q. Then there is a wheel just --

A. Yes, I've got them.

Q. See, that's a wheel.

A. Yes.

Q. And that either was flipped, or it could be an underneath-the-car-type spare tire; correct?

A. Yes, it could.

Q. Now, do you notice here that the tires are completely burned off these wheels?

A. Yes.

Q. Now, what is that consistent with in terms of the event that we're seeing here? That is, do you have -- based on your experience of looking at these scenes, I'd like you to interpret -- and I'll zoom out or give you the photograph -- Can you interpret for the jury what we're seeing the results of here? Are we seeing the results of the first blast, or of subsequent fires, or what? What are we looking at?

A. I think it's a combination of both.

Q. Tell us about that.

A. I think a lot of the damage to the body work of the vehicles has been caused by the blast, the fact that they've tumbled and flipped and the crumpling and damage to them.

Linda Jones - Cross

The -- they have also been fire-damaged. That could have resulted as a secondary effect from the blast hitting them; that the blast wave which -- all the time it's moving away from the seat of the explosion, the blast wave will be heating up. So it could be that the fuel tanks have ruptured or set off an electrical fault in the vehicles or created a spot fire in the upholstery.

Q. Now, you say first it could be from the blast wave. As pressure moves out from the center --

A. Yes.

Q. -- as the blast moves out from the center of this -- and we see the center here, the yellow crater that's right here in front of the Murrah Building --

A. Yes.

Q. -- is it getting -- is there a fireball-type effect that's getting hotter as it moves out?

A. There will be a fireball effect, yes, but the fireball is moving very, very quickly. So some items won't actually catch fire as the fireball passes over them. For example, like if you run your finger through a flame, a candle flame very quickly, it doesn't burn. If you linger in the flame, it hurts.

Q. Yes.

A. So the blast wave would be similar to that.

Q. So some of this could be the result of that, but you say

Linda Jones - Cross

that it would have passed very quickly; so is it your conclusion that some of this damage has to be the result of some of these things catching fire for some reason?

A. Oh, yes, I think certainly.

Q. Now, when an automobile catches fire -- have you had experience with automobiles catching fire and the gasoline in the tank igniting?

A. Yes.

Q. And based on your experience, is that consistent with this, with what you're seeing here?

A. It could be, yes. Yes. It isn't --

Q. For instance, the charring?

A. I'm sorry. I was going to say it isn't inconsistent with it.

Q. Okay. And the charring that we see here in the end of this vehicle: Is that -- and you see the gas-tank lid is blown off there?

A. I'm sorry. Could you point again for me.

Q. Right there where my finger is. I have to zoom out again. I keep doing this wrong.

A. Yes.

Q. Do you see that's blown off, the gas-tank lid? Do you see that?

A. It appears to be. It's not there, so I assume it's been blown off, yes.

Linda Jones - Cross

Q. So that's consistent with the car having blown up -- correct -- or the gasoline tank having ignited, exploded?

A. If we assume that there was no cap on it to start with, then when the residual gas in the tank expanded -- then it would have popped out, or the pressure would have been released through that hole.

Q. Now, when a gasoline tank of an automobile explodes, does that create a fireball?

A. It can do.

Q. And how hot does that get?

A. I don't know, but hot. I mean --

Q. Hot enough to burn plastic; right?

A. Oh, certainly, yes.

Q. Hot enough to burn the tires off the vehicles. Correct?

A. Yes. What is interesting is that we've not only lost the rubber from the tires but also the -- the metal reinforcing that's inside the tire.

Q. Oh. That is to say, assuming these things are steel-belted radial tires --

A. Yes. I'm sorry. I couldn't remember the phrase.

Q. -- we're not seeing the steel fabric that's inside there; right?

A. I can't see it in these photographs. It might have got churned up within the wreckage.

Q. Now, when the fire people come to put these things out,

Linda Jones - Cross

they use all sorts of things; correct? Have you been at scenes where the firefighters are putting on all sorts of things to try to put fires out?

A. I know they use a range of things, but that phase is usually over by the time I get there.

Q. Now, in your evaluation of the forensic evidence that was found in the parking lot, did you attach any significance to the fires that had taken place in the parking lot?

A. No, except that it was consistent with a bomb exploding. The fire damage was relatively random throughout the parking lot.

Q. Now, in looking at a crime scene that you would be evaluating --

A. Yes.

Q. -- you're always -- you have to pay attention to things that normally occur in the environment. Correct?

A. Yes.

Q. For instance, you never test for sawdust, or you seldom test for sawdust, do you?

A. Not in a post-explosion scene.

Q. Right.

A. But when we analyze some explosives, we do.

Q. I'm talking about a post-explosion scene like this. You don't analyze sawdust; right?

A. I would say not. If we think of a crime scene of this

Linda Jones - Cross

scale, we wouldn't analyze for sawdust.

Q. Right. And you've so testified in the past. Do you recall?

A. If you say so. I wouldn't disagree with that.

Q. All right. And you also don't analyze for wood meal; correct?

A. Not in a scene such as this.

Q. Now, you know that ammonium nitrate has many commercial uses; correct?

A. Yes.

Q. As a fertilizer?

A. I know it's used extensively as a fertilizer.

Q. Now, if you were wanting to examine a crime scene and you wanted to find out if there was ammonium nitrate present there --

A. Yes.

Q. -- you would first take account of the fact that there is no books or literature about ammonium nitrate crystals of this kind ever having been found; correct?

A. I would tend to base it on my and our laboratory's experience, rather than any literature.

Q. Yeah.

A. But I would -- I would consider what experience and knowledge was available.

Q. And in your experience, you've never found crystals.

Q. And in your experience, you've never found crystals;

Linda Jones - Cross

correct?

A. Not in a bomb such as this, no.

Q. Now, because this is something that you've never seen before, would you take extra precautions to make sure that it hadn't happened randomly, accidentally, or as the result of environmental factors?

A. I would take account of the environmental factors.

Q. And when you took account of the environmental factors, would you recognize that ammonium nitrate is hygroscopic?

A. I know that, yes.

Q. And would you take account of the fact that in this particular case the ammonium nitrate crystals that were once on this thing have disappeared?

A. I'm aware of that, yes.

Q. And do you have a theory about how they got off of there?

A. I don't know how much was there to start with; however, from the photomicrographs that I've seen, there doesn't appear to have been very much.

Also, I don't know how much was used in the testing; and my guess is that anything remaining could have fallen off in the bag during handling or transporting of the item.

Q. Now, do you know if anybody went and looked in the bag to see if it had fallen off?

A. I think I do, and I don't think any was found, so it didn't happen that way.

Linda Jones - Cross

Q. So it -- I guess it didn't happen that way.

A. I talked myself -- I've talked myself out of that one.

Q. All right. Well, do you have any other theories?

A. I think -- no, I don't, other than they probably -- any residue would have been most likely to have fallen off at some time.

Q. And in your opinion, you heard me ask Mr. Burmeister about the 100 percent humidity situation?

A. Yes.

Q. Did you agree that that also is a possibility; that it just evanesced into the air?

A. That would be down my list, but then I've only got one suggestion.

Q. And no prior experience with this particular phenomenon; correct?

A. That's right. Well, no, I think that's a little unfair.

Q. I don't mean to be unfair to you, please.

A. No, I think I mean -- I have experience from my chemical -- or my education and practice of chemistry what will happen to different crystals in different circumstances, but I haven't done any specific tests on what ammonium nitrate does under certain circumstances.

Q. Now, you also testified that this was a bomb in the -- what

size range?

A. I think I said 3,000 to 6,000 pounds.

Linda Jones - Cross

Q. And that would place it in the midrange; correct?

A. Of a midrange.

Q. High explosive?

A. High-performance explosive. Midrange in terms of its detonation velocity and performance.

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

THE COURT: Yes.

BY MR. TIGAR:

Q. Now, was it your impression that no ammonium nitrate other than that that was found on Q507 was present in the laboratory at the time that Q507 was analyzed?

A. That's what I was told.

Q. And just to be clear, Mr. Burmeister said that you had to have a sample to test it against; correct?

A. Yes. I think what I interpret by that is that when I was speaking to Mr. Burmeister when I visited him at his lab and saw where the testing took place was that there was none -- there was no ammonium nitrate in -- being examined or in the vicinity of where he was doing his recovery and testing. Of course, you need a reference sample to -- to identify your unknown sample.

MR. TIGAR: I have no further questions, your Honor.

THE WITNESS: Thank you.

THE COURT: All right. Any redirect?

REDIRECT EXAMINATION

Linda Jones - Redirect

BY MS. WILKINSON:

Q. Ms. Jones, you were present when the agents who recovered Q507 or Government's Exhibit 664 testified; is that right?

A. Yes.

Q. And you heard their direct examination?

A. Yes.

Q. You heard their cross-examination?

A. Yes, I did.

Q. And does their testimony change your findings or your belief about the ammonium nitrate crystals on Q507 in any way?

A. Not in the slightest.

Q. Are you concerned in any way about the handling of Q507?

A. No.

Q. And do you believe that ammonium nitrate crystals could have penetrated the plastic bags that Q507 was stored in?

A. No.

Q. Now, on cross-examination, you were asked a hypothetical about a lot of different components that could be in an explosive device.

A. Yes.

Q. And you told us that you cannot tell us in your opinion

what the device used at the Murrah Building was actually composed of; is that right?

A. That's right. I can't.

Q. And is that true for any post-blast crime scenes that

Linda Jones - Redirect

you've been to where the device is actually detonated relatively efficiently, as you've described it?

A. I think that's the case. Sometimes the recovery of components and residue are better than others, but there are many post-explosion scenes where we can go no further than we can in this case.

Q. If you come to a crime scene after the device has been detonated, is there any way to determine all the components of the device, if it exploded relatively efficiently?

A. That's right. In an explosion of this scale, no.

Q. Why is that?

A. Because some of the components of the bomb are going to be either consumed in the explosion, or shattered and dispersed into such small pieces that they will be unrecognizable.

Q. You were also asked during cross-examination about your study or your examination of chemical residues in the laboratory, and you contrasted that with the examination of residues from a crime scene, did you not?

A. Yes.

Q. And can you tell us why there would be some difference in what you examine at a crime scene and what you examine under laboratory conditions?

A. I'm sorry?

Q. Maybe I've not made the question clear.

A. I'm sorry. I'm not quite with you.

Linda Jones - Redirect

Q. You were asked about ammonium nitrate crystals and whether you've ever seen any literature concerning those; is that right?

A. Yes.

Q. And I believe you were asked about testing in a laboratory.

A. Setting up a -- yes. I think -- yes, I'm with you. The repeatability.

Q. Yes, repeatability.

A. Yes.

Q. And you said that you can do that under laboratory conditions; is that right?

A. That's right, yes.

Q. Can you distinguish for us why you can't do that for a bombing crime scene?

A. Because we cannot know exactly what the bomb was like before it exploded. When we're doing it at the lab, we can define every parameter. There are too many things we cannot know with a crime scene.

Q. Does it make any difference to you that there is no

literature showing the recovery of ammonium nitrate crystals at a post-blast scene that you're aware of?

A. No, not at all.

Q. Why doesn't it?

A. Because every crime scene will be different; and if you set off three bombs, identical bombs in identical locations, you're

Linda Jones - Redirect

likely to find different results from each one.

Q. Now, you told us that you can't say what was actually in this improvised explosive device used at the Murrah Building; is that right?

A. Not specifically, no.

Q. But if someone had access to the ammonium nitrate Mr. Tigar described for you, approximately 4,000 pounds --

A. Yes.

Q. -- and had access to nitromethane --

A. Yes.

Q. -- and Primadet --

A. Yes.

Q. -- and Tovex --

A. Yes.

Q. -- and blasting caps --

A. Yes.

Q. -- and a Ryder truck --

A. Yes.

Q. -- and barrels --

A. Yes.

Q. -- could someone make an improvised explosive device that did the damage at the Murrah Building?

A. Yes.

MS. WILKINSON: No further questions.

THE COURT: Any recross?

Linda Jones - Redirect

MR. TIGAR: Yes.

REXCROSS-EXAMINATION

BY MR. TIGAR:

Q. You're telling us that with three different bomb crime scenes --

A. No, three different laboratory experiments.

Q. Oh. Three bombs in identical locations, you'd get different results from each one. Is that right?

A. They wouldn't -- you wouldn't get identical results, not with the large bombs, no.

Q. You'd get very different results; right?

A. I'm not sure they'd be very different, but they wouldn't be identical. For example, if you exploded three identical bombs in identical locations, you couldn't say, Ah, for example, with a truck, I will find this piece of truck this distance from the seat of the explosion in this condition. You would get a generally similar effect but not identical.

Q. You were asked on redirect examination about the ability of

Q. You were asked on real-life examination about the ability of a person that had access to a number of things to build a bomb; correct?

A. Yes.

Q. In the hypothetical that you listed in your article --

A. Yes.

Q. -- you had someone who had access to bombing components; correct? Page 23.

Linda Jones - Recross

A. Oh, thank you.

Q. Two people had access?

A. One knew they had access, yes.

Q. Right.

A. And another person.

Q. Yes. And two people had access; correct?

A. I think in theory the five people did, because they all had keys.

Q. That's right. Five people had keys to the same storage shed?

A. Yes.

Q. And you singled out two?

A. It looks like it, yes. I haven't read this for some time, but I will go with you. If you say there were two -- there were two suspects, then yes.

Q. And one was innocent and one was guilty; right?

A. One had no knowledge; that's right.

Q. Right. And the other did; correct?

A. Yes.

Q. And that wasn't a question of forensic evidence, was it? That was a question of other items of proof?

A. I would have to read this to refresh my memory.

Q. But you do remember the result; correct?

A. I remember I organized the scenario so that it was a surprise to the reader, or I tried to make it a surprise to the

Linda Jones - Recross

reader who the actual culprit was.

Q. And one was a culprit and the other not?

A. Yes.

Q. Right?

MR. TIGAR: No further questions.

MS. WILKINSON: This witness is dismissed, your Honor.

THE COURT: Agreed?

MS. WILKINSON: Or excused.

MR. TIGAR: Yes, your Honor, with our thanks.

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

MR. MACKEY: Your Honor, the United States intends to call one final witness before resting; but before doing so, I have some additional Government exhibits I would like to move into admission.

THE COURT: All right.

MR. MACKEY: Your Honor, we would move to admit Government's Exhibit 227 and ask the Court to publish Factual Stipulation No. 6 as it relates to that exhibit.

THE COURT: All right. It's been agreed that "Government's Exhibit No. 227 is a guest registration card in the name of Timothy McVeigh from the Motel 76 in Albuquerque, New Mexico, for October 30, 1994."

Is that agreed?

MR. WOODS: Yes, your Honor. That's our stipulation.

THE COURT: All right. So 227 is being received?

MR. MACKEY: Your Honor, may I display it?

THE COURT: All right.

MR. MACKEY: Your Honor, it's further the agreement of the parties that the handwriting that appears and now being shown to the jury on the face of the customer portion of this exhibit, 227, was written by Timothy McVeigh.

MR. WOODS: That is the stipulation, your Honor.

THE COURT: That's confirmed. All right.

MR. MACKEY: Your Honor, we also move at this time for the admission of Government's Exhibit 580, which I would describe as the phone records from Sprint in Junction City, showing incoming phone calls to the Elliott's Body Shop on Friday, April 14, 1995. We'd move to admit that exhibit pursuant to our stipulation.

THE COURT: There is no objection to the exhibit?

MR. WOODS: No. The parties have stipulated as to the foundation of the phone records, your Honor.

THE COURT: All right. So 580 is received.

MR. MACKEY: Your Honor, we would also move to admit Government's Exhibits 952A and 952B, which are the first- and second-floor annotated plans -- that is annotated as to the location of victims on each of those two floors. Move to admit those at this time.

MR. TIGAR: Subject to our discussion, your Honor.

THE COURT: Yes. So they're received.

MR. MACKEY: Your Honor, as it relates to that particular exhibit, the final witness will identify the location of the victims on the sixth floor, after which time we'll ask the Court's permission to publish that exhibit in its entirety.

THE COURT: All right.

MR. MACKEY: Your Honor, we'd also move to admit Government's Exhibits '713 and '735 and ask the Court to publish the related Stipulation No. 24.

THE COURT: It's 1713.

MR. MACKEY: It is, your Honor. 1713 and 1735.

THE COURT: All right. And the stipulation is that the parties have agreed that "on September 18, 1994, Marife Nichols traveled from Kansas to the Philippines.

"On March 17, 1995, Marife Nichols returned from the Philippines to Kansas.

"On November 22, 1994, the defendant, Terry Lynn Nichols, traveled from Las Vegas, Nevada, to the Philippines.

"On January 16, 1995, the defendant, Terry Lynn

Nichols, returned to Las Vegas, Nevada, from the Philippines."

Government's Exhibit No. 1713 is an accurate summary of all travels between the United States and the Philippines for Marife Nichols, and Government's Exhibit No. 1735 is an accurate summary of all travels between the United States and the Philippines for Terry Nichols.

MR. MACKEY: Yes, your Honor.

THE COURT: So these summary exhibits are received and stipulated.

MR. WOODS: Yes, your Honor. Stipulated.

MR. MACKEY: In addition, your Honor, we'd move to admit Government's Exhibit 1889 subject to the previously published stipulation. Move to admit the exhibit itself at this time.

THE COURT: Okay. No objection to that?

MR. WOODS: No objection, your Honor.

THE COURT: 1889 is received.

MR. MACKEY: Your Honor, I'd like to display just a portion of that exhibit.

THE COURT: You may.

MR. MACKEY: I'm showing at this time to the jury, your Honor, a portion of Exhibit 1889 bearing the handwritten name of "Terry Nicols," spelled N-I-C-O-L-S, and a phone number, (913) 539-9702. We've previously agreed that that handwriting was of Jennifer McVeigh's.

THE COURT: All right.

MR. MACKEY: Your Honor, we also move to admit Government's Exhibit 2060. 2060, registration card from Mr. McVeigh at the Knight's Inn.

MR. WOODS: No objection on foundation on the motel record.

THE COURT: Right. Previously been a stipulation with respect to that from Kent, Ohio.

MR. MACKEY: Yes, your Honor. We'd also move to admit Government's Exhibit 2078 pursuant to Stipulation No. 19.

THE COURT: That's agreed to?

MR. WOODS: Yes, your Honor.

THE COURT: So 2060 and 2078 are both received.

MR. MACKEY: For the record, 2078 is a copy of a newspaper article appearing on Thursday, April 20, 1995, in the Daily Union newspaper from Junction City, Kansas.

THE COURT: Yes. And there is a factual stipulation on that?

MR. MACKEY: Yes, your Honor, No. 19.

THE COURT: "On April 20, 1995, the defendant, Terry Lynn Nichols, purchased the April 20th issues of the following daily newspapers: The Salina Journal, The Junction City Daily Union and The Wichita Eagle." Agreed?

MR. WOODS: Yes, your Honor. That's the stipulation.

MR. MACKEY: We'd also move to admit pursuant to stipulation Government Exhibit 2090B, being a portion of a transcript of a CNN broadcast on Friday, April 21, at approximately 10:06 a.m. Central Standard Time -- that would be Kansas time.

THE COURT: Foundation is admitted or stipulated, so 2090B is received

20000 IS RECEIVED.

MR. MACKEY: Your Honor, could I take the Court's time

to read into the record that transcript at this time?

THE COURT: Go ahead.

MR. MACKEY: This is a transcript from a CNN broadcast, 10:06 a.m. Central Standard Time.

First entry is reporter: "Mr. Kennedy, we're told that there was a surveillance camera on one of the nearby buildings that caught a glimpse of a Ryder truck or some truck believed to have been involved in this just before the bomb blast went off. Can you tell us anything about that?"

The response is from Weldon Kennedy, FBI spokesperson: "The question is was there a surveillance camera that may have captured something on film?"

Next response from the reporter: "Possibly a truck with explosives outside the federal building."

Next response from Mr. Kennedy: "A possible truck with explosives. I can confirm that we have a film which has been sent for analysis. I cannot confirm what's on that film because at this point, the film was apparently somewhat damaged and we are trying to improve the image on that film for analysis and it has not yet been completed."

Next response from the reporter: "But where did the film come from? From a surveillance camera in one of the nearby buildings?"

Last response from Mr. Kennedy: "I don't know the answer to that. It was a nearby building is all I know at this point."

Your Honor, finally we'd move to publish Factual Stipulations No. 13 and No. 20.

THE COURT: All right. No. 13 is that it is agreed that "Government Exhibit 1748 is a piece of carved jade that Lana Padilla retrieved from her son, Barry Ostenkoski, and turned over to the FBI through her lawyer in December, 1995."

And 20: It's been agreed that "the State of South Dakota has never issued a driver's license to 'Bob Kling' or 'Robert Kling.'

"The addresses 428 Maple Street or Avenue, or 428 Malp" -- M-A-L-P -- "Street or Avenue, do not exist either in Redfield, South Dakota, or Omaha, Nebraska."

That's been agreed?

MR. WOODS: Yes, your Honor; and Lana Padilla so testified as to that stipulation on 13.

THE COURT: All right.

MR. MACKEY: Your Honor, the United States will be prepared to rest after calling Mr. Matt Cooper tomorrow.

THE COURT: Well, we'll hear from that witness tomorrow.

And, members of the jury, we went a little bit beyond the normal time here so that we could get these stipulations in.

When Mr. Mackey refers to the Government's expectation that it will rest after the next witness, of course, that does not mean that the trial is going to end there. It simply means that that will be the last witness called by the Government at this point in the case. But, you know, while a defendant in a

criminal trial has no burden or duty of calling any witnesses or introducing any evidence, there will be witnesses called by the defense in this case; so, of course, don't jump the gun here on us and anticipate, well, there is going to be a close of the evidence tomorrow; what does this all mean? You wait. There will be a number of witnesses called yet in the case, so we're not there yet.

And that means continue to keep open minds and be careful of what you read, see, and hear and any form of communication or publication that could relate to any of the things discussed in the testimony in this case or involved in the evidence; and also, do not discuss the case with anyone else, including other jurors.

We'll resume as usual at 8:45 in the morning.

You're excused until then.

(Jury out at 5:06 p.m.)

THE COURT: How do you intend to publish those exhibits that have all of the names on them?

MR. MACKEY: Your Honor, with the Court's permission, what we'd ask is that each floor be displayed momentarily to the jury without narration or testimony.

THE COURT: All right. That was what I wanted to find out.

MR. MACKEY: Yes, your Honor.

THE COURT: Okay. Mr. Tigar, did you have something?

MR. TIGAR: No, your Honor. I thought your Honor wanted to ask my view about that, but our position is made clear with respect to that.

THE COURT: Yes. I think the record is clear that you have made your position known with respect to that, and we'll in spite of that proceed as indicated by Mr. Mackey.

MR. TIGAR: I understand the Court's ruling. Thank you, your Honor.

THE COURT: About how long is that next witness?

MR. RYAN: Probably 15 minutes, your Honor. 15, 20 minutes.

THE COURT: Well, I guess we'll have to recess twice in the morning, then.

MS. WILKINSON: Your Honor, could we approach the bench on one issue that -- one witness that Mr. Tigar wants to hold? We might be able to resolve it tonight, if we could.

THE COURT: All right. You may approach.

(At the bench:)

(Bench Conference 100B1 is not herein transcribed by court order. It is transcribed as a separate sealed transcript.)

(In open court:)

THE COURT: All right. We'll recess. 8:45.

(Recess at 5:14 p.m.)

* * * * *

INDEX

Item

Page

WITNESSES

Steven Burmeister

Cross-examination Continued by Mr. Tigar 11588
Redirect Examination by Ms. Wilkinson
Recross-examination by Mr. Tigar
Redirect Examination by Ms. Wilkinson

Linda Jones

Direct Examination by Ms. Wilkinson
Voir Dire Examination by Mr. Tigar
Direct Examination Continued by Ms. Wilkinson 11643
Cross-examination by Mr. Tigar
Redirect Examination by Ms. Wilkinson
Recross-examination by Mr. Tigar

PLAINTIFF'S EXHIBITS

| Exhibit | Offered | Received | Refused | Reserved | Withdrawn |
|---------|---------|----------|---------|----------|-----------|
| 227 | 11726 | 11727 | | | |
| 580 | 11727 | 11727 | | | |
| 655 | 11659 | 11659 | | | |
| 695 | 11645 | 11645 | | | |

PLAINTIFF'S EXHIBITS (continued)

| Exhibit | Offered | Received | Refused | Reserved | Withdrawn |
|-----------|---------|----------|---------|----------|-----------|
| 847 | 11648 | 11648 | | | |
| 848 | 11640 | 11641 | | | |
| 850 | 11651 | 11651 | | | |
| 851 | 11653 | 11653 | | | |
| 852 | 11652 | 11652 | | | |
| 854 | 11642 | 11642 | | | |
| 952A-952B | 11727 | 11727 | | | |
| 1713 | 11728 | 11729 | | | |
| 1735 | 11728 | 11729 | | | |
| 1889 | 11729 | 11729 | | | |
| 2060 | 11729 | 11730 | | | |
| 2078 | 11730 | 11730 | | | |
| 2090B | 11730 | 11730 | | | |
| 2122 | 11607 | 11607 | | | |

DEFENDANT'S EXHIBITS

| Exhibit | Offered | Received | Refused | Reserved | Withdrawn |
|---------|---------|----------|---------|----------|-----------|
| D1740 | 11592 | 11592 | | | |
| E4 | | | | | |
| E4 | | | | | |
| E4 | 11682 | 11682 | | | |

* * * * *

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 1st day of December, 1997.

Paul Zuckerman

Kara Spitler

"Transcripts may not be reproduced, re-printed or re-transmitted"

transmitted

without permission from PubNETics or KWTV."