

UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF MASSACHUSETTS

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| UNITED STATES OF AMERICA, |) | |
| |) | |
| Plaintiff, |) | |
| |) | |
| v. |) | Criminal Action |
| |) | No. 13-10200-GAO |
| |) | |
| DZHOKHAR A. TSARNAEV, also |) | |
| known as Jahar Tsarni, |) | |
| |) | |
| Defendant. |) | |
| |) | |

BEFORE THE HONORABLE GEORGE A. O'TOOLE, JR.
UNITED STATES DISTRICT JUDGE

EXCERPT OF JURY TRIAL - DAY FORTY

Testimony of Edward S. Knapp

John J. Moakley United States Courthouse
Courtroom No. 9
One Courthouse Way
Boston, Massachusetts 02210
Thursday, March 26, 2015

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Cheryl Dahlstrom, RMR, CRR
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I N D E X

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WITNESSES FOR THE GOVERNMENT:

EDWARD S. KNAPP

| | | | |
|--------------------|---|----|--|
| By Mr. Chakravarty | 4 | | |
| By Mr. Watkins | | 97 | |

E X H I B I T S

| <u>GOVERNMENT'S EXHIBIT</u> | <u>DESCRIPTION</u> | <u>FOR ID</u> | <u>RECEIVED</u> |
|-----------------------------|--------------------|---------------|-----------------|
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| | | | |
|-------|--------------------------------|--|----|
| 1573 | Photograph of IED explosion | | 27 |
| 1582 | Photograph | | 47 |
| 957A | Photograph of Exhibit No. 957 | | 52 |
| 1122A | Photograph of Exhibit No. 1122 | | 52 |
| 949A | Photograph of Exhibit No. 949 | | 55 |

DEFENDANT'S EXHIBIT

| | | | |
|------|---------------------------------|--|-----|
| 3093 | Fragmented remains of cardboard | | 103 |
|------|---------------------------------|--|-----|

1 (EXCERPT AS FOLLOWS:

2 MR. CHAKRAVARTY: The government calls Edward Knapp.

3 THE CLERK: Sir, want to step up here, please. Step
4 up to the box. Remain standing. Raise your right hand.

5 EDWARD S. KNAPP, Sworn

6 THE CLERK: Have a seat. State your name. Spell your
7 last name for the record. Keep your voice up and speak into
8 the mic so everyone can hear you.

9 THE WITNESS: Edward S. Knapp, K-n-a-p-p.

10 DIRECT EXAMINATION BY MR. CHAKRAVARTY:

11 Q. Morning, Agent Knapp. Are you a supervisory special agent
12 with the FBI?

13 A. Yes, I am.

14 Q. How long have you been with the FBI?

15 A. Over 19 years.

16 Q. Before the FBI, what did you do?

17 A. I was in the United States Navy.

18 Q. How long were you in the United States Navy?

19 A. A little over eight years.

20 Q. What unit were you in in the United States Navy?

21 A. I was Naval Special Warfare, and that was -- basically
22 that's Navy SEAL.

23 Q. Before that, what did you do?

24 A. I went to college and graduated from the United States
25 Naval Academy.

1 Q. As long as you've been an agent, have you had a variety of
2 different duties?

3 A. Yes, I have.

4 Q. And can you just give the jury an overview of your career?

5 A. I was afforded regular basic FBI agent training. Then I
6 went down to the Miami Field Division. I investigated violent
7 crime, kidnapping, extortions. At the same time, I got to go
8 to bomb technician school through the FBI in Huntsville,
9 Alabama, where all state and local bomb technicians are
10 trained. And I was afforded that opportunity. And I went back
11 to Miami. Then I went and applied for a position up in the FBI
12 laboratory where I currently reside since the late 2003.

13 Q. So let's -- at one point you were a -- I don't want to say
14 "regular" special agent because it doesn't make sense. But you
15 were --

16 A. Special agent.

17 Q. You were a special agent. Then you specialized in -- as
18 being a bomb tech, a special agent bomb tech?

19 A. Yeah, that's correct.

20 Q. So can you describe the process to become a special agent
21 bomb tech?

22 A. Well, it was a course, a six-week course, basically how to
23 become a bomb tech, things of -- as far as explosives, handling
24 explosives, circuitry, what are bombs made up of, training
25 basic to render safe RSP bombs, how to deal with that.

1 Q. RSP, does that stand --

2 A. Render Safe Procedure, to neutralize an IED or a bomb.

3 Q. Are there a variety of field divisions that have special
4 agent bomb techs?

5 A. Yes. All 56 field divisions have a bomb technician.

6 Q. What are the duties of a special agent bomb technician?

7 A. They basically coordinate. They liaise state and local,
8 assist them at times for special events or if there's
9 call-outs.

10 Q. What kind of activities do you do if there's a call-out?

11 A. I might respond with that particular bomb unit to a call.
12 Things are reported back through them to our FBI headquarters
13 notifying that there's an incident going on.

14 Q. And those incidents amount from, like, suspicious packages
15 all the way to an explosion, is that right?

16 A. Correct.

17 Q. And when you respond, do you do a variety of evidence
18 collection techniques?

19 A. I imagine they do. I mean, at this point that's up to --
20 in that field division, what's going on there at that time.

21 Q. Just describing your -- when you were an SABT, did you go
22 out and respond to scenes? And describe some of the things
23 that you did.

24 A. If, yeah, there was a scene or go -- suspicious package or
25 there's some material that looks like maybe explosives or hand

1 grenade or might be explosive material, to assess if it's a
2 hoax or not.

3 Q. And then did you also do render safe procedures?

4 A. Practiced a lot. But, I mean, I ended up leaving there
5 after a year or two to come up to the FBI laboratory.

6 Q. You mentioned earlier that you attended the Huntsville
7 bomb tech training course. Can you explain what that is?

8 A. That's a six-week process. You're familiar with
9 electrical and nonelectric fusing systems to detonate
10 explosives. You handle explosives. You look at render-safe
11 tools, tools that are used to disrupt IEDs, X-ray
12 interpretation, things like that. And you have training and
13 then scenarios. And you get qualified after that if you pass
14 tests and meet the standards.

15 Q. And who is administering these tests and standards?

16 A. That's the Hazards Device School, and it's run by the FBI.
17 And there's -- there was military bomb techs or retired
18 military bomb techs, you know, retired or public safety bomb
19 techs that are assigned as instructors down there in that
20 school.

21 Q. And they evaluate you before they qualify you?

22 A. Yeah. There's practical application scenarios, getting in
23 the bomb suit, taking a disrupter, and neutralizing an IED.

24 Q. As a result of that, do you get certified as a hazardous
25 device technician?

1 A. No.

2 Q. Okay. How does that happen?

3 A. That's a bomb technician.

4 Q. Bomb technician, excuse me. Is there a certification for
5 that?

6 A. For?

7 Q. For a bomb technician.

8 A. That is the -- down in Huntsville, Alabama.

9 Q. Is there ongoing training or a way to assess whether your
10 skills are up to date?

11 A. There's periodic IED training with state and locals. That
12 all depends, like I said, on the division where you're at and
13 the bomb techs with their state and local counterparts.

14 Q. Have you continued to do that since this training?

15 A. No. I'm in the FBI laboratory, in the Explosives Unit.

16 Q. I'm just trying to get a sense of, after your training,
17 how long you were in the field doing this work and then before
18 you came to the FBI lab.

19 A. It was about a year and a half.

20 Q. And during that time, did you investigate explosives
21 incidents?

22 A. It's been awhile, but there's one or two, you know, and
23 then doing special events with the state and locals over down
24 in Florida where I was assigned. But, you know, it's been
25 awhile but one or two times at some call-outs at night, but

1 other than that --

2 Q. So the bulk of your experience has been at the FBI
3 laboratory?

4 A. I had to be trained and certified, yes.

5 Q. So please explain that.

6 A. There's a process. I'm a hazardous device examiner in the
7 FBI, and we fall under the TEDAC section under the FBI
8 laboratory. And we have --

9 Q. Let me pause there. What is TEDAC?

10 A. The acronym is Terrorist Explosive Device Analytical
11 Center. But in the course of -- in the Explosives Unit,
12 there's training that basically I had to complete. It takes
13 several years. There's actually working cases, doing oral
14 examinations, explosives, the admin oral boards for as far as
15 the FBI laboratory protocols and procedures and how evidence is
16 handled and sent through our laboratory besides working cases
17 with a qualified examiner and then also outside training that
18 was afforded along with -- actually, they would test --
19 basically test us. Basically we would -- you know, a case -- a
20 mock case would come in. We would have to go from start to
21 finish. Then we'd have to basically write reports and then
22 testify in a mock room setting. You had to complete so many
23 cycles of that type of training. And then once you completed
24 all that training, if you completed it, then you would be
25 certified as a hazardous device examiner.

1 Q. So can you explain to the jury the difference between a
2 bomb tech and a hazardous device examiner?

3 A. Well, we had additional training outside, going to
4 commercial explosive manufacturers, military manufacturers. We
5 have liaison with those type industry reps. We had basically a
6 little more extensive training as to be an examiner, you know.
7 Bomb tech, you know, they render safe some type of device and,
8 you know, it's sent to us. And we're trying to put the pieces
9 back together and try to figure out the functionality of this.
10 Was it actually a device or was it not or what they call a hoax
11 device.

12 Q. So you examine evidence that's submitted from the field?

13 A. Yes.

14 Q. I jumped the gun earlier to say -- when I asked whether
15 you had been certified to do that. Have you been?

16 A. Yes.

17 Q. When -- for how long have you been a certified hazardous
18 device examiner?

19 A. Since approximately 2007.

20 Q. In the course of the last eight years, have you had
21 occasions to conduct not just the mock hazardous device exams
22 but actual real cases of hazardous device exams?

23 A. Yes, I have.

24 Q. About how many do you think you've participated in?

25 A. Dozens.

1 Q. And have you had training in this last eight years as well
2 after you have been certified?

3 A. Yes.

4 Q. Can you describe -- you described some of it.

5 A. I mean, each year you have to go through a proficiency
6 testing to make sure you're still qualified, and you have to
7 pass those testing.

8 Q. And is that administered by others in your field who are
9 also hazardous device --

10 A. It's a requirement in the FBI laboratory under the -- as a
11 forensic laboratory under ASCLD.

12 Q. And the process of conducting a forensic exam, is that a
13 collaborative process that you have -- you do with a team and
14 various disciplines?

15 A. Well, as far as when the case comes to me, it's checked
16 in. It comes to us. There's a process of checking it in. I
17 mean, I have a technician that is assigned to me. And this is
18 checked in. We then go to send the evidence out to other
19 forensic disciplines within the lab, DNA, latent fingerprints,
20 question documents, trace evidence, firearm toolmarks. So this
21 evidence is then being sent to the other disciplines for them
22 to work on their discipline to find DNA or latent prints. And
23 it would be transferred with the proper protocols through the
24 different disciplines, and it would come back to us. But at
25 the end, at the end point, I'm looking and analyzing the

1 material that had come in to me on a case and whatever field
2 division in the FBI.

3 Q. Then you render your assessments about that evidence?

4 A. Well, whether it is an IED or a bomb, a homemade bomb, or
5 it's not. It could be a hoax bomb. Yes.

6 Q. And in many of the cases that you've examined, have items
7 been submitted to you that hadn't exploded?

8 A. Sometimes, yes.

9 Q. And in other cases, there are so-called post-blast
10 investigations; you get the remnants of materials?

11 A. Yes, that's correct.

12 Q. In addition to Improvised Explosive Devices, have you had
13 training in other types of explosive devices?

14 A. I mean, when you talk about an Improvised Explosive
15 Device, it can be commercially available, military available
16 materials or commonly, readily available you can find and buy.
17 And it's just form fashion as the term is "improvised."
18 Sometimes we get an actual -- could be some military munitions,
19 and we have to deal with that, you know. But normally they
20 come in and they're improvised somehow, not designed as they
21 were meant to be functioned.

22 Q. Can you elaborate on that? Improvised Explosive Device, I
23 think we understand what those words mean by themselves. But
24 can you explain --

25 A. In an Improvised Explosive Device, you have to have two

1 things. You have to have a main charge, some type of
2 explosives, and some type of fusing system. It could be an
3 electrical fusing system or nonelectrical fusing system. Those
4 are the two main components. And then sometimes how -- what
5 explosive you use, whether it's a high explosive, like a
6 military grade, or a low explosive, like a powder, you might
7 need a container to use in a low-explosive device.

8 Q. Is that because the gases that build up is what causes the
9 explosion in a low-explosive explosion?

10 A. Yeah. You have to have some type of confinement. And
11 basically the chemical reaction in it relieves it mechanically,
12 and there's an explosion in that container.

13 Q. Okay. So as a hazardous device examiner, how do you go
14 about conducting a post-blast evidence forensic examination?

15 A. Well, when the material comes in, you know, it's just a
16 bunch of, you know, bits and pieces, and we're trying to
17 segregate out stuff that's -- you know, it's not part of the
18 bomb or what I'm looking for, an IED, and then trying to start
19 to recognize pieces of maybe parts of the bomb, whether the
20 fusing system, depending on what type it is, if there's a
21 container. There might be a concealment container. Then
22 you're basically trying to identify, I have a power source, or,
23 yes, here's a switch, all kinds of, you know, ways someone
24 could fashion a bomb so --

25 And then we're trying to determine the functionality of

1 the bomb. And then sometimes there's also -- something might
2 have happened in one scene, and then there's a search at
3 another scene, and they might collect some evidence. And then
4 they might ask -- this is the field division or the people
5 request an exam that maybe we compare items from a search scene
6 and from the bombing scene.

7 Q. And so when you assemble the evidence and you're trying to
8 figure out what parts are what, how do you go about it? Do you
9 take measurements? Do you take pictures? What are you looking
10 at?

11 A. We're looking at roughly trying to separate, like I said
12 before, you know, electrical fusing system needs certain
13 components in it, and we're trying to look for those. An
14 electrical fusing system, you can have some sort of power
15 source. It could be varied type of battery. You have to have
16 a conductor, some wire. You would have to have some type of
17 switch or switches in combination. And also, at the end, we
18 call a load or the -- where the detonator or refer to, like, a
19 blasting cap, or it could be an improvised detonator or
20 initiator.

21 So you're looking through all the material, and you're
22 trying to find if there is a viable fusing system in there and
23 also then separating out, if there was a container used, the
24 pieces that are coming together, all these little pieces.

25 There might have been sometimes fragmentation that was added,

1 you know, into a device or there's a container or it was
2 transported in a box or, you know, some other means. Then
3 there might be little bits and pieces left at the scene there.
4 But you're going -- concentrating on that to figure out. And
5 also, you know, things are being sent to our explosive chemist
6 for testing to try to see what type of explosive material was
7 used.

8 Q. Okay. You just mentioned several things there. Are each
9 of those different systems, different components of an IED, a
10 fusing system, a container, and an explosive main charge?

11 A. Yeah, that's correct.

12 Q. Is an energy source also necessary for that?

13 A. A power source.

14 Q. A power source. For an electrical system, it would be a
15 power source?

16 A. Some type of power source.

17 Q. For something like a pipe bomb, what would the energy be
18 from?

19 A. It just depends on how it's made. It could be a simple,
20 like, a firecracker fuse or those green -- that hobby fuse,
21 what we call, just lighting that with a match, or it could be
22 an improvised initiator and you're using a battery with some
23 type of switch to complete the circuit, and you could function
24 it that way.

25 Q. Okay. With regards to each of these components, the

1 energy source, the fusing system, a main charge or a container,
2 can you give some examples of each of those that you've seen
3 before or you've read about?

4 A. Well, I mean, for an energy power source, nine-volt
5 batteries, six-volt lantern batteries, car batteries, things
6 like that. I mean, I've seen regular commercial blasting caps,
7 commercial nonelectric blasting caps that were improvised to
8 make them electric blasting caps, blasting caps that were
9 improvised and made, initiators that were -- could be from an
10 SD rocket ignitor used as an initiator.

11 Q. How about the various different vessels or containers that
12 you've seen?

13 A. Pipes, pressure cookers, I've seen those; pipes; in a box;
14 PCV pipe.

15 Q. Can you describe for the jury how these various components
16 interact together to create an IED?

17 A. If we're talking in this -- in general or --

18 Q. In general, and then we'll move to this case.

19 A. In general, I mean, if you have that low explosive, you're
20 going to have to have a container. And then it depends. It's
21 as simple as putting a hobby fuse in it and lighting the hobby
22 fuse or, like I said before, you had some improvised initiator,
23 and you have to have a power source attached to it and then
24 some type of switch that will close that circuit and send a
25 current to that improvised initiator to ignite the low

1 explosive.

2 Q. And then, because of the containment of the low explosive,
3 it will explode?

4 A. If that's what the -- yeah, main charge was, yes.

5 Q. Now, for purposes of this case, were you assigned to lead
6 the forensic examination of the explosives?

7 A. Yes, for the Explosives Unit, yes.

8 Q. So can you explain what you did early on in the
9 investigation?

10 A. It started that next day. Evidence started flowing into
11 the laboratory. And as far as it was coming in, it was being
12 checked in, our process of checking it in, photographing it,
13 documentation, setting up an exam plan for all the other
14 disciplines. And it just -- it kept coming in every about 12
15 hours. There was a shipment at night, shipment in the morning.
16 And technicians were receiving the evidence in. We were
17 looking -- looking at it. Sometimes it was sent -- some of the
18 material was sent over maybe to DNA, if there was an issue,
19 they wanted to get DNA or latents. But all these examiners,
20 material was going to them. And then it was coming back to us
21 to -- to our unit but specifically me to analyze and start
22 looking through this.

23 I mean, there was over 1,300 submissions. There might
24 have been 1,300 submissions, but it wasn't one single item.
25 We're talking hundreds. So there was probably thousands of

1 little bits and pieces of trying to go look through this stuff,
2 all this material. And you started separating and then started
3 recognizing, you know, what I talked before about, if there was
4 a piece of a battery, a piece of some type of switch. Then you
5 started getting through the material that was just, you know,
6 collected up at that scene.

7 What I was specifically looking for, you know, what type
8 of -- if there was a container, if there was some type of
9 fusing system. And what I started to find, that there was a
10 container or, like, a backpack. Then there was pieces of
11 metal, larger pieces of metal that was the container, with the
12 bomb -- you know, it was contained, like, because then found
13 there was a low explosive in it. Then we started seeing bits
14 of wire and pieces of electronic or RC model -- hobby model
15 components within and amongst the debris. And that all started
16 coming in and started separating out, looking for what you need
17 for that electrical fusing system and started putting back the
18 pieces. And then we went on to look at it and test the
19 functionality, if this would work.

20 Q. Okay. So once you get the pieces, you analyze them. You
21 figure out how they interact with each other?

22 A. We started to figure out what those pieces -- those
23 components were from. You know, in our unit, we also will do
24 testing if we need. Sometimes things come in and we'll test it
25 on the explosives range, but we'll try to re-create the actual

1 device. We knew the type of receivers, the electronic -- there
2 was electronic speed controllers in there from model cars. The
3 type of model RC car, we were purchasing some. We started
4 seeing, like, bits of the container, the Fagor container, the
5 pressure cooker.

6 We started going out there and looking and purchasing for
7 exemplars because then we'd even take that, and we'd break
8 apart, say, the RC component because, in the explosive event,
9 it's not going to look the same. Some of it, there was bits of
10 capacitors and bits of a circuit. We actually had an exemplar.
11 We were taking a look because we'd find tiny pieces of wire,
12 tiny pieces of the connectors from the chaotic event, from that
13 explosion. So we also did that for purchasing.

14 And then eventually it came down we put the functionality,
15 the fusing system together, and did some testing. Then, of
16 course, on -- out there in the public domain, the internet and
17 the manuals for those particular type of RC transmitter, the
18 transmitters for the radio cars, also the receiver types for
19 their -- looking at those and seeing their compatibility and so
20 forth and doing some testing with that.

21 Q. After you determined what the evidence submitted was, then
22 you went out and you tried to buy each of these things as
23 exemplars, intact things?

24 A. Correct.

25 Q. Then you'd use those to figure out exactly how they

1 interacted?

2 A. That's correct.

3 Q. Is that customary in your field, to try to purchase
4 exemplars and then create mock-ups?

5 A. Yes, it is. Even if there was a vehicle that was in an
6 explosion, to go take -- go to the manufacturer, look at the
7 vehicle, what type of wiring, what type of systems, if it was a
8 device that was blown up in a car. But, yes.

9 Q. Just before we move on to specifically how you
10 reconstructed those, did you arrive at a conclusion as to what
11 exploded on Boylston Street on April 15, 2013?

12 A. Yeah. There were two devices in pressure cookers, two
13 bombs that were carried in there in backpacks, and they were
14 pressure cookers. They had electrical fusing system that was
15 an RC model hobby car components in it, and there was a low
16 explosive in it. And they were placed on -- down in those
17 areas where they went off.

18 Q. And a few days later, there were some explosions in
19 Watertown, on April 19th. Did you arrive at conclusions as to
20 what exploded there?

21 A. Yeah. There was another pressure cooker, a smaller Fagor
22 pressure cooker. It was -- they recovered, we talked before,
23 two pipe bombs. There was an elbow and a pipe coupler. But
24 they had internal end plugs, and they had what I talked before,
25 just simple hobby fuse. And also there was some fragmentation

1 recovered that came in that were bits of pipe and end caps that
2 had exploded.

3 Q. And in addition to the exploded materials, were there also
4 intact submissions that you saw?

5 A. That's correct. And there was also approximately three
6 pounds of a low explosive in a container with hobby fuse coming
7 out of it and also with this green hobby fuse inside the
8 container, too.

9 Q. Was that also an IED?

10 A. Yes, that is.

11 Q. You may have mentioned that there were a couple of pipe
12 bombs that had been rendered safe. Did you examine those as
13 well?

14 A. Yes. And they had some fragmentation on the inside of
15 them.

16 Q. Now, are all these Improvised Explosive Devices or
17 destructive devices?

18 A. Yes. They're a bomb.

19 Q. And so when bombs go off, do you do your own reenactments
20 of those devices?

21 A. At times. It depends for the explosive effect. But there
22 was no need for that. I mean, there was widely available that
23 two devices functioned.

24 Q. So let's move on to some of the evidence collection and
25 some of the evidence that you looked at.

1 MR. CHAKRAVARTY: If we could call up Exhibit 620.

2 This is the 2-D. This is in evidence, your Honor.

3 Q. Agent Knapp, have you seen this interactive exhibit
4 before?

5 A. Yes.

6 Q. So as far as -- sorry about that. As far as your
7 analysis, what does this -- this is -- I've focused on Scene A.
8 What was significant to your analysis in terms of what evidence
9 that you were looking at?

10 A. Well, I mean, this gives a pretty good description of
11 where the blast seat was and then where the pattern of some of
12 the materials radiated out from 360 degrees.

13 Q. You said the word blast "seat." Is that where the blast
14 originated essentially?

15 A. Wherever that device was placed. You can see where it --
16 it radiates out. This is a good representation.

17 Q. There's different colors. Do each of these depict
18 different types of the systems that you had mentioned earlier,
19 like --

20 A. Yeah, correct, you know, where some of the backpack, some
21 of the container, the actual pressure cooker, and then there
22 was also in the -- in this scene, there was copper -- there was
23 BBs for added fragmentation in there and also where the fusing
24 system -- you know, pieces happened to land at.

25 Q. Okay. You mentioned "fragmentation."

1 A. Correct.

2 Q. Can you explain what fragmentation is?

3 A. In terms of -- fragmentation could be primary or secondary
4 fragmentation. Primary fragmentation would be, like, in an
5 military ordinance, the casing. When it explodes, that's
6 primary fragmentation. You might have secondary, which
7 basically, depending on the violence and the pressures built
8 and as far as that pressure wave going, it picks up pieces in
9 the surrounding environment and hurls them out -- hurls them
10 out in all directions. And secondary fragmentation can pick up
11 just from the scene or sometimes what they call shrapnel or
12 added fragmentation, where someone places something on a bomb
13 to try to cause more damage. Usually, you see that, what they
14 call anti-personnel type devices, where you're trying to cause
15 as much damage or inflict, maim, kill, or injure personnel.

16 Q. Now, in terms of how an Improvised Explosive Device works,
17 if there's no fragmentation, how does that -- how does a bomb
18 actually injure people?

19 A. Well, there's always -- I mean, there's a bare charge,
20 but, normally, there's the overpressure and the extreme
21 pressures going out imparted on the surrounding area, you know,
22 picks up fragmentation from the surrounding. But it's usually,
23 you know, overpressure from -- if there's no fragmentation,
24 it's really the overpressure that's coming to hit an individual
25 and can cause significant damage and death.

1 Q. Is that like the shockwave that comes out of the
2 explosion?

3 A. Yes.

4 Q. Is there also heat sometimes generated?

5 A. Well, there's the thermal effect. If you're close enough
6 to the -- what particular material there is, you know, the
7 fragmentation, but is a big one, and then basically the
8 pressure, the overpressure, from -- imparted onto the
9 surrounding is a big one.

10 Q. All right. So back to the Scene A device, when you
11 started examining the evidence collected at Scene A, where did
12 you first start in order to try to reassemble what the
13 architecture of that device looked like?

14 A. I mean, there was just evidence coming in. It was not
15 like it all came in from Scene A. There was stuff coming from
16 the Medical Examiner's Office, Scene A, Scene B. And we
17 basically then started piecing it together and seeing -- I'd
18 see the power -- like I talked before, the fusing system of
19 this one particular on Scene A was a particular one. And then
20 on Scene B, the fusing system, the power source was
21 particularly another -- another type.

22 Q. I see. For each scene there was a different -- your
23 examination started with a different component based on what
24 was either unique or the evidence that you found?

25 A. It just came into the lab; and as it came into the lab, a

1 process of examining it. It would come back to us. And
2 basically I knew these particular items were from Scene A.
3 These particular items were from Scene B. And then you started
4 analyzing those particular items, looking through the paint
5 cans with all the material in it, looking through the bags that
6 came in with numerous things and material inside those. Then
7 you started -- what I talked about is start looking for the
8 particular components in the fusing system, the container, and
9 the bag.

10 Q. So let's go to Scene A and explain what you found that was
11 significant about the device at Scene A.

12 A. On this scene we found the power source. We found the
13 receiver, the electronic speed controller, also a little part
14 of the improvised initiator in there, the container. There was
15 fragmentation and then the bag that was -- that it carried --
16 that it was carried in.

17 Q. Now, before I go to the components, I just wanted to show
18 you a photograph. With regard to the explosion -- you had just
19 described how an explosion works regardless of the
20 fragmentation. You described the shock and you described the
21 fire.

22 MR. CHAKRAVARTY: I'm putting up on the ELMO for the
23 witness, your Honor, what I'm going to mark now as Exhibit
24 1573.

25 Q. You see the cloud of smoke and the flames off to the

1 right?

2 A. Yes.

3 Q. Is that an accurate description of what an explosion of an
4 IED would look like?

5 MR. WATKINS: Your Honor, I'm going to object at this
6 point for a couple of reasons. This exhibit was only provided
7 last night. We actually thought it was coming in through a
8 different witness. I don't know whether there's been a
9 foundation for this laid with this witness.

10 THE COURT: All right. Both objections are overruled.
11 He may answer the question.

12 A. I mean, this is class -- like, in a detonation or
13 explosion, depending what type of explosive it is. You see the
14 thermal effect usually close to the seat of the explosion, and
15 then pressures are radiating out and also fragmentation. I
16 mean, we -- besides being an examiner, we instruct and teach
17 post-blast investigation. And we show students the different
18 effects of explosives and what happens when they go off,
19 different type of explosives. So this is just common. That's
20 an explosion with the thermal effect, which is usually close to
21 the -- in the seat of the explosion.

22 MR. CHAKRAVARTY: I know it's being published, your
23 Honor. I don't know if I actually moved it in yet, but I do
24 move it in.

25 THE COURT: What's the number?

1 MR. CHAKRAVARTY: 1573.

2 (Government's Exhibit No. 1573 received into evidence.)

3 MR. CHAKRAVARTY: Go back to the computer, please.

4 THE COURT: Actually, we're just about at 11:00. Why
5 don't we take this opportunity to take the morning recess.

6 MR. CHAKRAVARTY: Thank you.

7 THE CLERK: All rise for the Court and jury. The
8 Court will take the morning recess.

9 (Recess taken at 10:57 a.m.)

10 THE CLERK: All rise for the Court and the jury.

11 (The Court and jury enter the courtroom at 11:26 a.m.)

12 THE CLERK: Be seated.

13 THE COURT: Proceed.

14 MR. CHAKRAVARTY: Thank you, your Honor.

15 BY MR. CHAKRAVARTY:

16 Q. Agent Knapp, when we broke we were just getting ready to
17 look at some of the evidence that was collected at Scene A.

18 Did you find some evidence related to the fusing system of
19 the device that exploded at Scene A?

20 A. Yes.

21 MR. CHAKRAVARTY: Calling up on 620.

22 Q. Is this one of those items?

23 A. Yeah, it's the remains of the electronic speed controller.

24 Q. What is an electronic speed controller?

25 A. In the model car, it basically sends the power to the

1 motor, whether it makes it go faster or slower or reverse or
2 forward, in the model car.

3 Q. And so what function does that perform in an improvised
4 explosive device?

5 A. It's just basically a switch in the fusing system. And
6 you can see one of the outputs. That hooks up -- the small
7 leads there hook up to the receiver, and that larger red, you
8 know, that hooks up to the power source battery, and then
9 there's -- there should be -- well, it's so damaged. But in
10 the exemplar there's two leads that go to the output of the
11 motor, and that's where I found that the improvised detonator
12 was hooked up to those two outputs that would normally go into
13 the motor of the R/C car.

14 Q. I'm sorry. Just "R/C car," do you mean a
15 remote-controlled --

16 A. Remote-controlled, the hobby car.

17 Q. And the screen in front of you, Agent Knapp -- actually,
18 if you touch it, it will leave a mark. So if you want to
19 circle something or show the jury what you're talking about,
20 you can just touch that area or draw a circle around it.

21 So, now, you described that in the piece of evidence that
22 you found, some of the components had been burned off or
23 otherwise destroyed, but in the exemplar, you're able to make
24 out further definition of what this particular item is?

25 A. Yes. This is damaged. And in the exemplar, pristine

1 condition, you can see where the different connections to the
2 battery, to the receiver, and then to where the -- you would
3 hook it up to the motor of the hobby car.

4 Q. And is this part of the circuit board to that electronic
5 speed controller?

6 A. Yes.

7 Q. Is this the lab photo?

8 A. That's correct.

9 Q. And what is this last photo?

10 A. That's the photo of the two leads that come off that
11 electronic speed controller.

12 Q. You mentioned that they come off and they go to the
13 detonator?

14 A. Well, in normal configuration that goes to the motor, but
15 the two outputs that go to the motor would be connected with
16 the improvised initiator.

17 Q. What's an initiator?

18 A. Something to set off the main charge, like I talked
19 before, blasting cap, an improvised blasting cap, or some type
20 of improvised initiator that would set that main charge off.

21 Q. And what was the initiator in the two devices on Boylston
22 Street?

23 A. Well, on one, Scene A, there was just a small
24 fragmentation of a Christmas tree -- basically the green
25 Christmas tree lightbulbs that are strung out in like 50- or

1 200-strand for decoration purposes. And the other scene
2 nothing was found, but that's not to be expected.

3 Because the violent nature, the reaction, sometimes you
4 just don't find it remaining or left.

5 Q. Do you recognize what this is?

6 A. Yeah, those are just -- like I said, it had a lot of that,
7 the fragmentation there, the bits and pieces. And there's part
8 of a -- that circular thing was part of one of the batteries,
9 this area -- you know, part of that there was the, you know,
10 part of the Christmas tree bulb.

11 Q. The Christmas tree lightbulb?

12 A. Yes.

13 Q. And does a Christmas tree lightbulb have enough power to
14 set off a low-explosive charge?

15 A. Yes.

16 Q. Did you find other items related to the energy or the
17 power for that fusing system?

18 A. Yes. The power source, they were Sub-C-size batteries,
19 but some of that was still connected to part of the leads of
20 the battery and other parts of the cells were disbursed amongst
21 the scene.

22 Q. And I'm showing what's marked as Q208. What's that?

23 A. Yeah, I think that was the -- that's the casing of an
24 Exceed R/C battery. That was 7.2 volts, and that, I think, was
25 1800-milliamp rated.

1 Q. And so what was the -- explain how the battery interacted
2 with that --

3 A. Well, the battery is the -- you know, it basically powers,
4 you know, the motor of an R/C car. But the battery, that was
5 the power source to provide current to the improvised initiator
6 and also provided power to the electronic speed controller and
7 also the R -- the receiver, the small receiver, that was found
8 also at the scene.

9 Q. Let's go to that. I'm showing you what's marked Q178, a
10 photo of Q178. What is that?

11 A. That was the remains of the Flysky receiver.

12 Q. When you say "Flysky," is that the name brand of the
13 receiver?

14 A. 245 was the model, yeah, the brand of the receiver.

15 Q. So can you explain what a Flysky receiver is?

16 A. A Flysky receiver basically receives a signal from the
17 transmitter. In a normal R/C, the model hobby car, you'll have
18 a transmitter or controller, what you steer or drive the car
19 forward or reverse. The receiver is in the model car. You
20 have the electronic speed controller in there that deals with
21 the motor once you hook those leads up. And then you plug
22 the -- plug the receiver into the electronic speed controller.
23 And obviously that battery, that Sub-C pack, is in there
24 providing power for the car in normal operation.

25 What has to happen is that receiver has to be connected to

1 that transmitter. And then in the manufacturer -- in the
2 literature it's available, and then even in that particular
3 manual that transmitter has a code, an identifier, a number.
4 And basically, you have to bind that receiver to that
5 transmitter so they can talk to each other.

6 And once that's done, that function's performed, then the
7 receiver's bound to that transmitter, then you can use that
8 controller and turn the steering wheel or press the trigger to
9 that controller and the car will perform, you know, whatever
10 desired function you have in normal operation.

11 And this particular -- this particular type of this
12 manufacturer, Flysky, they use, in their literature,
13 frequency-hopping. And basically, that's just one type of
14 system that's used for this particular transmitter/receiver.
15 And then other manufacturers use a different type of
16 technology -- or called "digital sequencing."

17 There's two different ways to run your R/C cars, but this
18 particular one, you have to make sure that you have the
19 compatible type of receiver/transmitter to perform driving an
20 R/C car or boat.

21 Q. Okay. So was that receiver connected to the electronic
22 speed controller which was connected to the initiator, the
23 Christmas tree bulb?

24 A. It was. But I mean, all that was all damaged. But that
25 had to be connected up in that -- we talked a fusing system to

1 operate the improvised initiator in this particular scene.

2 Q. Continuing on, did you find a toggle switch?

3 A. Yeah. Like I said before, testing the functionality and
4 seeing how these things were constructed, we noticed without
5 just putting the receiver, the electronic speed controller in
6 there with the battery and then hooking it up to an improvised
7 initiator, in this particular -- in this particular electronic
8 speed controller, when you hit the little slide switch and
9 power it up where it initializes and the receiver then receives
10 power, it's sent output signal to the two leads that were
11 connected to our improvised initiator, which we used as a
12 Christmas tree bulb, and it basically lit the bulb momentarily,
13 so...

14 And we also -- during the scene, through all that
15 material, we found the remnants of a heavily damaged -- what
16 was a toggle switch. We couldn't identify it, but it was an
17 illuminated toggle switch. And that was within the parts that
18 we looked at. And for this particular device at Scene A, had a
19 toggle switch also which sometimes they're referred to as a
20 safe-and-arming switch, because if you turn that little slide
21 switch on the electronic speed controller on, and it's sent
22 that output to that Christmas tree bulb to light it up, it
23 would have detonated the bomb.

24 So to interrupt that circuit, a toggle switch, just like a
25 light on your on-and-off switch, it broke the circuit -- it

1 just needed to be done for a few seconds, and then the toggle
2 switch just needed to be flipped to the armed position. And
3 then once you went and gave it the appropriate signal from the
4 transmitter, it would function the Christmas tree lightbulb.

5 Q. So are you saying for that receiver to bind with the
6 transmitter without actually igniting the Christmas tree light,
7 you need to have this toggle switch on?

8 A. No, the binding of the receiver and transmitter is already
9 complete. It's basically -- the transmitter you can set aside.
10 You're not worried about -- we're not worried about the
11 transmitter. It's the fusing system. You needed a toggle
12 switch within -- between -- to break the continuity between the
13 electronic speed controller, the receiver battery, just had to
14 have a break in that continuity. Because if you didn't, if you
15 didn't have that toggle switch in when the receiver, electronic
16 speed controller and battery are all put together, and we
17 tested it with a Christmas tree lightbulb on the outputs of
18 that electronic speed controller, when you slid and powered up
19 that electronic speed controller, it had enough output to send
20 current down to that Christmas tree lightbulb momentarily for a
21 second or two, but it would light up, so...

22 And we found in the evidence, like I said, that damaged
23 toggle switch. And that toggle switch was used to break that
24 once you turned on the electronic speed controller, and then
25 they flipped it on to the -- or someone would flip it on to the

1 armed position then, and now it's armed and it's just waiting
2 for a signal from the transmitter.

3 Q. So the toggle switch was necessary for the arming
4 procedure?

5 A. Yes. In that particular scene.

6 Q. So for that scene, the pressure cooker pot, somebody would
7 have had to turn on the device before deploying it?

8 A. In both of them. But in this particular instance, just
9 the way that electronic speed controller sent a signal or
10 output to that -- where that Christmas tree -- improvised
11 Christmas tree bulb would have been, it would have set it off.

12 Q. And this toggle switch -- was there a similar toggle
13 switch found in Scene B?

14 A. No.

15 Q. Now, in addition to this fusing mechanism, did you find an
16 alternative fusing mechanism for the device at Scene A?

17 A. Yes, we did. We found a very small piece of what we
18 talked before, hobby fuse, that green hobby fuse that's used in
19 fireworks. There was two pieces taped up with electrical tape.
20 And they were at both scenes also.

21 Q. I'm putting up on the screen Q192. Is that the hobby fuse
22 that was recovered from the site of Scene A?

23 A. Yes.

24 Q. So can you explain why there would be hobby fuse in a
25 device that already had an electric fusing system?

1 A. Well, there was two forms of initiation. We talked
2 before, there's electrical and non-electrical. The primary
3 means of initiation would be electrical by remote-control car,
4 but if somehow that failed, then all you would have to do is,
5 you know, light the hobby fuse and walk away, and that would be
6 sufficient to set off the low explosive.

7 So, you know, when I saw that there, just that
8 small -- that small piece, it appeared that it was cut off --
9 once that violent reaction, that explosion, it was cut off, and
10 that was the small fragment that remained amongst the many
11 pieces of debris at each scene.

12 Q. So when someone lights hobby fuse, describe what the
13 deflagration looks like.

14 A. It's just you light it with a match or a lighter, and it
15 starts burning and it's giving off smoke. It might smell like
16 a sulphur smell, but it's burning down. And there would be
17 smoke around.

18 Q. And does it take a little bit of time depending on how
19 long it is?

20 A. Right. Normally it's two seconds per inch, but it varies.
21 But it's just commonly available, manufactured hobby fuse.

22 Q. In fact, for both of the scenes on Boylston Street, did
23 you find evidence of hobby fuse?

24 A. Yes.

25 Q. In addition, did you find components of a container?

1 A. Yes, the Fagor container.

2 Q. That's Q10. What's that?

3 A. That's the lid of the pressure cooker.

4 Q. And did -- the deformities to this pressure cooker, what's
5 that evidence of?

6 A. An explosive event. And you could see it was crisscrossed
7 with tape. The container had tape on it. And it was
8 crisscrossed around the container also.

9 Q. You're referring to the kind of clear marks here?

10 A. That's correct.

11 Q. And this particular lid was found some distance away?

12 A. Yes, it was found some distance away.

13 Q. So according to the interactive exhibit where I'm hovering
14 over here, does that sound right? I know you weren't on the
15 scene --

16 A. I wasn't at the scene but...

17 Q. Were there also components of the backpack that was used
18 to conceal these devices?

19 A. Yes. It's identified as a Ful backpack.

20 Q. Going to Q109, just quickly scroll through these, are
21 these the lab photos of that backpack?

22 A. That's correct.

23 Q. And I'm sorry. This identified the brand as Ful?

24 A. And then on the inside, in the liner of the material
25 there, it had the Ful brand in there.

1 Q. All right. Now let's move on to Scene B. And as with
2 Scene A, did you find radio-controlled remote-control
3 components?

4 A. Yes, we did.

5 Q. Calling up Q41, what are these?

6 A. That's a portion of another -- an electronic speed
7 controller, but that was -- there was two portions to that, and
8 that was a Duratrax Sprint electronic speed controller.

9 Q. And the Duratrax speed controller, that's different from
10 the Accede that you found at Scene A?

11 A. Yes; just a different type of electronic speed controller.

12 Q. What does the speed controller do in a typical
13 remote-control car?

14 A. I said it went and basically provided power to the motor,
15 if you wanted to go faster or slower, reverse or forward. And
16 it would provide the input, and the current would go and engage
17 the motor. And it would go forward, backwards or slower or
18 faster.

19 Q. Thank you. And so Q52, is this another portion of the
20 electronic speed controller?

21 A. Yeah, that's a piece off that -- 52 and 51 is the board,
22 the electronic speed controller board.

23 Q. Did you also find evidence of a receiver at --

24 A. Yes.

25 Q. A remote-control receiver?

1 A. Yes, we did.

2 Q. Q122: Do you recognize that?

3 A. Yes; that's a Spektrum receiver.

4 Q. The company Spektrum?

5 A. Yes.

6 Q. "Spektrum" with a K?

7 A. Yes.

8 Q. It looks like there's -- the name is printed actually
9 here. Is that right?

10 A. That's correct.

11 Q. Now, how does the Spektrum receiver differ from a Flysky
12 receiver?

13 A. As we talked before, it's just how they communicate and
14 what technology that manufacturer had. And that was direct
15 sequencing. It's just a different way that it talks to the
16 receiver/transmitter. But the same process of binding -- you
17 know, they have their receiver and transmitter. The
18 transmitter has a unique ID, and basically it is bound. Once
19 you bind that to the transmitter, they will talk, like
20 communicate.

21 Q. Did you also find a power source at Scene B?

22 A. Yes, we did. A damaged Tenenergy Sub-C pack.

23 Q. Is that --

24 A. That's the brand name, the Tenenergy battery.

25 Q. Another battery pack?

1 A. Right.

2 Q. Did you also find evidence of the hobby fuse?

3 A. Yes, we did.

4 Q. And then finally, did you find portions of the backpack
5 itself?

6 A. The Fox backpack, yes.

7 Q. This was different from the Ful backpack?

8 A. Correct.

9 Q. And finally, the -- did you find pieces of the container
10 as well?

11 A. Yes. The container again -- once again, it was a Fagor
12 pressure cooker. And there was also, you know, we talked
13 before, fragmentation, some small nails and BBs in this scene,
14 and compared to just the BBs in Scene A.

15 Q. Now, we've just looked at a sampling of some of the pieces
16 of evidence, but did you examine each piece of evidence and
17 come up with the configuration of how you surmised that these
18 devices were constructed?

19 A. Well, yes, the configuration that these particular R/C
20 components had to be put into and how they would have
21 functioned the device.

22 Q. And did you create mockups?

23 A. Yes, we did.

24 Q. And you described how you went out and bought components.
25 How did you configure the mockup devices?

1 A. Based on the -- what was found at the scenes, the
2 particular type of transmitters/receivers, we purchased
3 the -- there was a -- we actually purchased several monster
4 rally trucks where the electronic speed controller, the power
5 source, everything was provided. It was a full, intact one,
6 which was the same components found at the scenes.

7 And then we -- then I went and constructed the fusing
8 system, like I talked about, placing the receiver, binding it
9 with a transmitter, and then hooking up a -- in this
10 particular, just hooking up a Christmas tree bulb to it.

11 Q. And for the device at Scene B, you described earlier that
12 there was no toggle switch found?

13 A. Right. We -- I said before we tested those -- that
14 Spektrum receiver with the Duratrax. And when I talked before
15 about having to initialize and we have to turn on the
16 electronic speed controller in Scene A, power -- some output
17 went to those two leads that had the Christmas tree bulb.

18 When we tested it for the Duratrax electronic speed
19 controller hooked up, there was no output. It didn't light up
20 the Christmas tree bulb, and there was no evidence of a toggle
21 switch remaining at the scene. But it did not function it,
22 once you powered it, initialized it up, so the light did not
23 come on.

24 Q. So unlike the device at Scene A, the device at Scene B
25 with that Spektrum receiver and the Duratrax electronic speed

1 controller, when you armed it, it didn't set off the Christmas
2 tree lightbulb?

3 A. That's correct. The fusing system there, yes.

4 Q. But like the Scene A, did that device have to be armed
5 before it was deployed?

6 A. You had to turn on that slide switch so it would power up,
7 and then it's waiting for the signal from the transmitter.

8 Q. Let's talk a little bit before we move on about -- you
9 described the components within the fusing system of the
10 pressure cooker. What else would have been -- what else did
11 you find evidence of within the pressure cookers?

12 A. Well, within the pressure cooker, the way they were
13 constructed, there was, I said -- in Scene A there were the
14 copper -- the BBs, and there was pink material, a red
15 rosin-type paper backing. But some of the BBs, we found that
16 they had some adhesive -- sealant-type material -- they were
17 like embedded into the sealant-type material.

18 And also in Scene B, likewise, the same type of material
19 was found. They had the BBs. Or there was BBs and then there
20 was some small nails in it. And also there was -- we started
21 seeing when all this evidence came in, there were pieces of
22 cardboard -- circular pieces of, like, fragmented cardboard
23 with duct tape taped around the edges of it. And we started
24 noticing each scene had cardboard, and then there were some
25 tape associated with those.

1 Q. And then you also described, I think, some tape on the
2 exterior of one of the --

3 A. Well, and each device, basically it was crisscrossed with
4 tape around the pod.

5 Q. So before deploying that device, someone would have had to
6 arm the device and then resealed it before deploying it?

7 A. They would have had to go in and make sure the slide
8 switch on that electronic speed controller was on so it would
9 power up that fusing system, what we talked about, the
10 components of it.

11 Q. And then resealed the container, the vessel?

12 A. Yes.

13 Q. And is that because the low explosive --

14 MR. WATKINS: Objection to the leading nature, your
15 Honor.

16 BY MR. CHAKRAVARTY:

17 Q. Why does a low explosive need to have a sealed container?

18 A. Well, it builds up pressure. But we've done tests
19 where -- I mean, low explosives, it just has to have enough
20 confinement and then it can, you know, explode, you know, and
21 the container can fragment. But we've done tests where you
22 don't have, like, say on a pipe, two end caps. One might be
23 off and it's still -- that's enough confinement to detonate
24 that pipe, so...

25 And even if you have enough material by itself, the weight

1 of that material can cause enough confinement to start a
2 violent reaction and explode.

3 Q. When you say "material," you mean explosive material?

4 A. Yeah, by itself the way that -- if you have enough.

5 Q. And is there a correlation between how sealed -- how
6 confined something is with how violently it will explode?

7 A. Of course if you have, you know, a heavier case, you know,
8 a thicker pipe -- you know, it just has to have enough
9 confinement in it. But, you know, if it's a thicker pipe,
10 sealed better, time to build up more pressure, but it relieves
11 itself, but just enough confinement. And in this case there's
12 enough confinement to explode these two containers.

13 Q. In exploding a container, breaching the confinement, does
14 that in itself create fragmentation?

15 A. That's -- the container itself is fragmentation along with
16 the added fragmentation.

17 Q. And when it -- when an explosion breaches a containment
18 vessel, how does the physics work in terms of breaking the
19 containment?

20 A. It just depends, you know, low explosives, how violently
21 they react. You might have bigger pieces or smaller pieces
22 depending on the explosives that were used.

23 Q. Okay. So in addition to the gas being released, is that
24 also when the thermal effect occurs?

25 A. Well, initially we talked before, the closer the thermal

1 effect is closer to, you know, the explosive or the seed, and
2 then the fragmentation and the pressure is radiating out.

3 Q. Does it radiate out in any specific direction?

4 A. It's just 360. Just pressures are built up, and 360
5 degrees out, just imparting that onto the surrounding
6 environment or whatever else is in its way.

7 Q. Let me show you a couple of photographs.

8 (Pause.)

9 Q. Agent Knapp, I just wanted to show you a few photographs
10 to see if these are consistent with what the effect is of an
11 explosion on a containment vessel.

12 MR. CHAKRAVARTY: Can we go to 2D, please?

13 THE COURT: Is this something in evidence?

14 MR. CHAKRAVARTY: I'm first going to go to the 2D
15 which is in evidence, your Honor. Sorry.

16 BY MR. CHAKRAVARTY:

17 Q. Agent Knapp, what does this show?

18 A. That is the fragmented remains of a pressure cooker.

19 Q. And the distortions of the ends and the discoloration, is
20 that all effects of the explosion?

21 A. Could you repeat that?

22 Q. The distortions at the ends -- the edges of the metal, is
23 that all the result of an explosion versus something else that
24 may have been done to it?

25 A. It was ripped apart in the explosion. It came apart, the

1 container.

2 Q. And do you notice that there appear to be some
3 indentations here, almost as if stamped out of the metal?

4 A. Right.

5 MR. CHAKRAVARTY: Now, if I can have one moment. I
6 wanted to see if -- rather than using the ELMO, see if we could
7 project it out electronically.

8 Just for the witness, your Honor. It's not in
9 evidence.

10 Q. Agent Knapp, showing you an exhibit marked 1582, do you
11 see the grates at the bottom of this photo?

12 A. Yes.

13 Q. Are those indentations on Q126 --

14 MR. WATKINS: Objection, your Honor. This is the
15 subject of expertise, and this is not an expert in that.

16 THE COURT: All right. Overruled. I'll allow the
17 answer.

18 BY MR. CHAKRAVARTY:

19 Q. Are the indentations that we just saw on Q126 consistent
20 with the pattern on the grate depicted in this 1582?

21 A. When this device went off, it was placed close to the
22 ground and then the force was imparted on it and it just left
23 impressions in the metal on the container that was fragmented
24 from that grating.

25 MR. CHAKRAVARTY: So I'd move in Exhibit 1582, your

1 Honor.

2 MR. WATKINS: Objection.

3 THE COURT: Overruled. I'll admit it.

4 (Government Exhibit No. 1582 received into evidence.)

5 BY MR. CHAKRAVARTY:

6 Q. Again, was the grating that you're talking about this type
7 of grating?

8 A. Yes.

9 MR. CHAKRAVARTY: Mr. Bruemmer, if we can go back to
10 the 2D and call up...

11 Q. And this is what I had identified earlier as that kind of
12 stamp?

13 A. Correct.

14 Q. Now, going to -- moving on to the Watertown crime scene,
15 did you use a similar methodology to examine the evidence at
16 Watertown as you did for the Boylston Street explosions?

17 A. Yes.

18 Q. And did you identify -- let's first talk about the
19 pressure cooker device there. Did you identify the vessel that
20 was used?

21 A. It was a smaller Fagor pressure cooker.

22 Q. So for the Watertown scene, Agent Knapp, I think I'm just
23 going to show you the physical items because I don't have the
24 exhibit numbers -- excuse me -- the photo numbers handy.

25 So there was a Fagor pressure cooker device that was

1 smaller, I think you said earlier?

2 A. Just a little smaller in size, yes.

3 Q. And the fact that it was smaller, what significance did
4 that have to you as an explosives analyst?

5 A. Nothing.

6 Q. And does it matter how large a vessel it is for purposes
7 of determining an explosion analysis?

8 A. No.

9 Q. Why is that?

10 A. Obviously the -- I mean, obviously if it's bigger, you can
11 put more explosives in it. But, I mean, it's just a
12 containment vessel and it just happened to be that size.

13 Q. And so how much -- the fact that it's a smaller vessel
14 means that it can hold less items. Is that fair to say?

15 A. Material.

16 Q. Material?

17 A. Possibly.

18 Q. So were you able to estimate how much explosive material
19 was in these devices?

20 A. In the Scene A and Scene B?

21 Q. Start with wherever you want.

22 A. You know, for the -- I mean, they were -- the same size
23 pressure cookers in Scene A and Scene B, and they were like
24 six-liter-size pressure cookers, and roughly -- it could be
25 anywhere from eight pounds to 16 pounds in those pressure

1 cookers. And obviously, the other one was a four-liter,
2 four-quart size. And obviously, that would be a smaller, you
3 know, eight pounds in there, so forth, approximating.

4 Q. And you're approximating. That's estimating if it was
5 half full of explosive material?

6 A. Half full to full.

7 Q. So that's the range that you described?

8 MR. WATKINS: Objection to the leading, your Honor.

9 THE COURT: Overruled to that question.

10 BY MR. CHAKRAVARTY:

11 Q. Now, for the Watertown scene, in addition to the Fagor
12 pressure cooker, which we've seen photos of the lid and the
13 vessel, what other components of significance were there?

14 A. In the pressure cooker itself, obviously when that went
15 off, they did find wire, a 9-volt battery and a toggle switch
16 at the scene. And then they also had collected two intact pipe
17 bombs. One was an elbow and one was a straight coupler. And
18 they had internal end plugs. And then they also collected
19 fragmentation, or bits and pieces, of pipe at that scene. And
20 they also collected a container with material in it with green
21 hobby fuse coming out of the lid.

22 Q. So you said a few moments earlier that it doesn't really
23 matter how sealed something is or -- in terms of whether it
24 will explode. Would the device that was made out of plastic
25 that had powder in it and hobby fuse, would that have exploded

1 like an IED?

2 A. There's confinement there, and that just happens to be
3 plastic. But there's confinement, and that right there was a
4 device also because it had all the components, the
5 non-electrical fusing system, the main charge and the
6 container.

7 MR. CHAKRAVARTY: Can we call up Image 951, please?
8 I'm sorry. 957.

9 Q. This is a Q photo of 582. Do you recognize that?

10 A. That's a toggle switch that was found at Watertown.

11 Q. And what significance did that have to the device?

12 A. Well, there was -- it was connected. They had a
13 9-snap-volt battery connector. There was a 9-volt battery
14 found. That toggle switch with a length of wire, that right
15 there -- obviously there was no initiator on the end of the
16 wires, but that was found at some distance away from the
17 pressure cooker. And as far as in my course of investigation,
18 being overseas, you have a toggle switch, and basically it's
19 just an on-and-off switch, you have a power source, and you'd
20 have some type of initiator at the end of that. And all you do
21 was to close the circuit, just flip the toggle switch. And if
22 that was in an explosive, it would detonate and explode.

23 Q. So this was another way to trigger an explosive device?

24 A. Well, in --

25 MR. WATKINS: I'm going to object, your Honor. That

1 wasn't his testimony.

2 THE COURT: Yeah, sustained to that.

3 BY MR. CHAKRAVARTY:

4 Q. So let's just clarify a few things. You mentioned that in
5 the course of the investigation you have come to learn this.
6 Do you mean in the course of your training and experience as an
7 investigator?

8 A. In dealing with material coming in, or overseas, bombing
9 investigations, seeing the type of fusing systems out there.
10 And this is a particularly used -- what we normally have is --
11 a dead-man's switch or a suicide bomber would have this type of
12 configuration.

13 MR. WATKINS: I'm going to object, your Honor.

14 THE COURT: No, overruled. That may stand.

15 BY MR. CHAKRAVARTY:

16 Q. And in addition to this system, was there
17 another -- evidence of another fusing system found on Laurel
18 Street?

19 A. Well, there was the hobby fuse. It's non-electric.
20 Basically, the burning of the green hobby fuse. They had it in
21 the pipes; they had it in the container, the plastic container.

22 MR. CHAKRAVARTY: One moment, your Honor. I believe
23 Exhibit 957 is in evidence, but I'm not sure whether it's the
24 image or the physical piece of evidence. I'm just confirming
25 that.

1 (Pause.)

2 MR. CHAKRAVARTY: So, your Honor, I believe 957 is the
3 physical piece of evidence. If I could offer this exhibit as
4 957A, which is a photo of that.

5 MR. WATKINS: No objection.

6 THE COURT: Okay.

7 (Government Exhibit No. 957A received into evidence.)

8 BY MR. CHAKRAVARTY:

9 Q. This is that switch that you just described that was found
10 in Watertown?

11 A. Yes, it was.

12 MR. CHAKRAVARTY: I'd call up Exhibit 1122.

13 THE COURT: Is this in or not?

14 MR. CHAKRAVARTY: Again, it is in, your Honor. I
15 just, again, don't know if it's physical or --

16 (Pause.)

17 MR. CHAKRAVARTY: Your Honor, similarly, if not, I'd
18 make clear that this is 1122A, which is a photograph of --

19 THE COURT: All right.

20 MR. CHAKRAVARTY: Q71.

21 (Government Exhibit No. 1122A received into evidence.)

22 BY MR. CHAKRAVARTY:

23 Q. And so this is the lid that you were mentioning earlier?

24 A. Of the container? Yes.

25 Q. So there's hobby fuse on here that we can see. Is that

1 fair to say?

2 A. Yes. It was coming out of the lid of the container.

3 Q. So in addition to this hobby fuse, was there other hobby
4 fuse found in Laurel -- at the Watertown scene?

5 A. There was a bit of hobby fuse inside the container, so
6 with the powder that was in there.

7 Q. And so the pressure cooker device that was exploded, was
8 there any hobby fuse associated with that, or how did you
9 determine that?

10 A. You couldn't determine -- I mean, usually, hobby fuse
11 burns. That explosion happened, and the hobby fuse usually is
12 no longer there.

13 MR. CHAKRAVARTY: May we go to Exhibit 848.

14 I'm not sure whether this is in evidence.

15 Q. Do you see this area over here?

16 A. Yes.

17 Q. Is that significant to you?

18 A. It looks like a darker spot in the ground.

19 Q. What happens when an IED explodes on asphalt?

20 A. It can leave a cratering pattern or it could leave some
21 residue near there.

22 MR. CHAKRAVARTY: If we could go to Exhibit 852.

23 This is in evidence, your Honor.

24 Q. Is this that collection of hobby fuse that you were
25 talking about?

1 A. Yes.

2 MR. CHAKRAVARTY: Go to Exhibit 853.

3 Q. This is another angle.

4 MR. CHAKRAVARTY: Could we go to Exhibit 833, please.
5 834.

6 I don't think that's in evidence, your Honor.

7 THE CLERK: 834 is in.

8 MR. CHAKRAVARTY: 834 is in, yes.

9 THE COURT: Is or isn't?

10 MR. CHAKRAVARTY: 834 is. My apologies, your Honor.

11 BY MR. CHAKRAVARTY:

12 Q. Is this one of those rendered-safe pipe bombs that were
13 found in Watertown?

14 A. Correct.

15 Q. Could you describe the configuration of this?

16 A. That was an elbow pipe, two-inch diameter with internal
17 end plugs, it had some Teflon tapes on the threads, and then on
18 the inside it had, once again, BBs inside, encased inside, and
19 there was a green hobby fuse coming out of a hole that was in
20 the elbows.

21 MR. CHAKRAVARTY: Could we do 842, which is also in
22 evidence.

23 A. That shows you a picture of the inside, but the same
24 thing. That's just a straight coupler with the internal end
25 plugs and hobby fuse coming out of it.

1 Q. And like the other mockup devices that you made, did you
2 make mockup devices of each of these devices: the pipe bombs,
3 the plastic container containing hobby fuse and explosive
4 material, as well as the pressure cooker that was found in
5 Watertown?

6 A. Yes.

7 Q. In addition to the explosives, the exploded IEDs -- the
8 remnants of the exploded IEDs as well as the rendered-safe, did
9 you also find a transmitter in Watertown?

10 A. Yes, there was a transmitter that was submitted with this
11 evidence.

12 MR. CHAKRAVARTY: And if we could call up Exhibit 949,
13 which I would move into evidence 949A as a photo of this.

14 MR. WATKINS: No objection.

15 THE COURT: Okay.

16 (Government Exhibit No. 949A received into evidence.)

17 BY MR. CHAKRAVARTY:

18 Q. And what is that?

19 A. That's the modified Flysky transmitter, or basically the
20 R/C hobby controller.

21 Q. So you said it's a modified Flysky. Is "Flysky" the name
22 brand?

23 A. Yes, of the transmitter, the controller.

24 Q. And so it's the same name brand as the receiver that was
25 found at Scene A?

1 A. That's correct.

2 Q. And you said it was modified. How was it modified?

3 A. Well, normally if you had an intact one, there's the
4 battery pack on the bottom, and it has like a pistol grip where
5 you can hold it, and on the top it has the -- that -- that's
6 the electronic display. And there's usually buttons up there.
7 And then on one side there's a little steering wheel, and it
8 has -- on the grip there's like a little trigger for operating,
9 you know, the forward and reverse of your car and the steering
10 wheel to turn your R/C car.

11 Q. Now, as part of the investigation, did the FBI obtain
12 various receipts or other records to see whether there were
13 other radio-controlled/remote-controlled components involved in
14 the case?

15 A. Yeah, other receipts had come in of purchases.

16 Q. Right.

17 MR. CHAKRAVARTY: If we could call up Exhibit 1160,
18 please, which I believe is in evidence. Page 2.

19 Q. Is this one of the receipts that you reviewed?

20 A. This is one of them that had come in.

21 Q. And could you describe the items on this receipt?

22 A. Up on the top you see the "Accede R/C electric rally
23 Monster Off-Road Rally Truck, stripe blue." That was a whole
24 intact package of an actual R/C car. We purchased several of
25 those for our exemplars.

1 Q. Did you find any evidence related to that vehicle, like --

2 A. On that one, the electronic speed controller and the --
3 the electronic speed controller, the receiver and the battery
4 were found at Scene A.

5 Q. Okay. Please continue.

6 A. And then there's a -- it looks like there's a transmitter
7 and receiver, and then another receiver, a Flysky receiver, in
8 that list.

9 Q. And is there also some batteries?

10 A. Right.

11 Q. So this transmitter and receiver, does the "FS" stand for
12 Flysky?

13 A. Yeah. That's the model number, Flysky model.

14 Q. All right. And so this entry is for a combination package
15 of both the transmitter and the receiver that are compatible
16 with each other?

17 A. Yes.

18 Q. And the last entry is for an extra receiver. That's also
19 compatible with those?

20 A. Correct.

21 MR. CHAKRAVARTY: Can we call up Exhibit 1431, please,
22 also in evidence.

23 Q. Did you also have an opportunity to learn more about what
24 this was a receipt for?

25 A. That was a receipt for a transmitter -- what we talked

1 about before, the Spektrum transmitter -- controller and a
2 receiver.

3 Q. And so was the receiver consistent with the receiver, the
4 remnants of which were found at Scene B?

5 A. Yes.

6 Q. Did you ever find in the investigation the Spektrum
7 controller?

8 A. No.

9 Q. In fact, were there any other controllers found in the
10 investigation aside from the one we just saw from Watertown?

11 A. No.

12 Q. Was the Spektrum receiver that was found in Scene B -- was
13 that compatible with the Flysky receiver that we were just
14 looking at?

15 A. We talked about -- earlier about the two different ways
16 they communicate those two different manufacturers have, the
17 frequency hopping and then the direct sequencing. That's not
18 compatible with -- the Spektrum receiver with the Flysky
19 transmitter.

20 MR. CHAKRAVARTY: Back to 949A.

21 Q. Did you determine whether this transmitter bound with the
22 receiver that was found on Scene A?

23 A. Did I --

24 MR. WATKINS: Objection, your Honor.

25 THE WITNESS: Basically --

1 MR. WATKINS: Objection.

2 THE WITNESS: Basically --

3 THE COURT: Wait. Hold on a moment.

4 Is it related to disclosure?

5 MR. WATKINS: No.

6 THE COURT: Let me just see you briefly.

7 (Discussion at sidebar and out of the hearing of the
8 jury:)

9 MR. WATKINS: So this relates to the so-called binding
10 testimony. I had filed a motion in limine. The Court's never
11 ruled on that. It's actually not this witness that did any of
12 the work.

13 We've agreed, I thought up until now, that we would
14 allow a certain amount of testimony by Agent Knapp here that
15 included work done by other people for him. I specifically --
16 when we were talking about this carved-out -- that binding code
17 issue, I had understood up until this minute that he would not
18 seek to admit that through Agent Knapp. I believe it's
19 complete hearsay as to this agent. He didn't run any of the
20 tests that would result in that conclusion. I don't even think
21 the other one had, ran a test.

22 So I'm asking that that be excluded.

23 MR. CHAKRAVARTY: The intention is not to elicit that
24 the binding code is the same on each. He didn't do a test to
25 figure out what the binding code was. But he can say -- he's

1 going to say -- what I wanted to elicit -- and I can ask
2 another question to elicit that -- is was the Flysky receiver
3 that was found compatible with the Flysky receiver that was
4 found in Watertown. The transmitter pair -- were they
5 compatible with each other. And if they determined that they
6 actually were -- worked together, I guess is the correct --

7 MR. WATKINS: That is not the question you asked. You
8 said "bind." If you want to ask are they compatible, that's
9 good.

10 THE COURT: What does "compatible" mean?

11 MR. CHAKRAVARTY: That they can talk to each other as
12 opposed to --

13 THE COURT: Right. And how is that different from
14 binding?

15 MR. CHAKRAVARTY: So binding is the more precise idea
16 that there was a specific code on one that matched the code on
17 the other. And my point is I want to be more general but still
18 show that these two can talk to each other, and they can't talk
19 to the device on Scene B.

20 THE COURT: Well, I think he's already said the
21 latter. I don't think --

22 MR. CHAKRAVARTY: Yes.

23 THE COURT: Okay.

24 MR. WEINREB: I'm sorry, your Honor. Before we
25 leave --

1 THE COURT: Yeah.

2 MS. CLARKE: While I've got you.

3 (Laughter.)

4 MR. WEINREB: Can I just add that -- I'd assume that
5 the binding code like -- the reasoning -- the defense is not
6 going to be permitted to inquire of this witness about binding
7 codes, or specifically to ask questions intending to
8 elicit -- if he is going to ask questions intending to suggest
9 to the jury that Tamerlan Tsarnaev might have detonated at the
10 scene two bombs, that would be trying to -- asking the jury to
11 assume facts not in evidence in bad faith because the defense
12 knows that Jahar Tsarnaev in fact did detonate the second bomb.
13 And to ask questions to elicit otherwise would not be
14 good-faith cross-examination.

15 THE COURT: Okay. Is there an issue?

16 MR. WATKINS: There is an issue, your Honor. It's a
17 longer issue. I understand the Court is going to break at
18 12:45. I don't know how much Mr. Chakravarty has left. I'm
19 not sure that that won't --

20 MR. CHAKRAVARTY: There's not much more other than
21 he's going to explain the mockups that he created, we're going
22 to do a demonstration, and then we're going to talk about the
23 *Inspire* magazine. I think if we're breaking early for lunch
24 today, it would take us at least to that.

25 MR. WATKINS: So I will consider what Mr. Weinreb has

1 talked about, and we will come to some kind of agreement on
2 that, or agree to disagree.

3 THE COURT: Well, okay. I'll leave it at that for
4 now.

5 MR. CHAKRAVARTY: One other point that might implicate
6 this again is before we do the mockup and the demonstration,
7 he's going to -- he had created a device, and he was going to
8 actually activate the device. In order to do that, he has to
9 bind the transmitter with the receiver, so -- which he's
10 already explained there is a binding process, and now he's
11 bound to that.

12 THE COURT: Is it in his disclosure that he's going to
13 do that?

14 MR. WATKINS: We're getting into larger issues here.
15 We spoke on Sunday about some of the -- Mr. Chakravarty, I
16 think, is going to introduce some mockups of each of these
17 individual items and do some demonstrations. That was one of
18 them that I identified that we would object to, that -- using
19 that mockup, because that essentially gets them to the same
20 place where their expert that they did not call would try to
21 get them.

22 THE COURT: Isn't that part of the instructions that
23 comes with the car?

24 MR. CHAKRAVARTY: It is. That's the only way these
25 cars would work.

1 THE COURT: I don't know if that's expert. That's
2 just sort of -- it's the way some 12-year-old gets the car to
3 run.

4 MR. WATKINS: That is true as a general matter, but
5 what they are trying to prove is that this specific one bound
6 with that specific receiver down there, and that is the subject
7 of expert testimony. It could have, but for them to say that
8 it absolutely did...

9 THE COURT: Well, that it could be the subject of
10 expert testimony doesn't necessarily mean that it is; in other
11 words, it might be an inference from other non-expert evidence.
12 I don't know. It depends on how it's presented. But it sounds
13 elementary, that you have to punch in the code that you have to
14 use in order to identify the car to the transmitter.

15 MR. WATKINS: That part of it is true, that they would
16 identify -- that the two of them -- whether this particular
17 transmitter identified with this particular receiver -- it's
18 not functioning anymore. They can't do it. They're unable to
19 do it, so they do it in a roundabout way.

20 MR. CHAKRAVARTY: That's a separate question. In the
21 actual piece of evidence versus in the exemplar, which he has
22 to say that's what he did in order to get the thing to work.

23 MR. WATKINS: And that's why I think it's
24 objectionable. It doesn't come in because of that exact
25 reason.

1 THE COURT: No, I think he can say that's what he did.
2 He's not offering an opinion about these two other devices, so
3 he could go there.

4 MR. WATKINS: Okay. As long as -- because we're up
5 here and we're talking about the mockups, there's also a mockup
6 of the so-called Tupperware bomb. I don't think that comes in
7 at all because they don't have the same Tupperware container.

8 MR. CHAKRAVARTY: We're going to use the amount of
9 powder in the Tupperware. There's an inert material that
10 they're using as an example of that. That I wanted to put into
11 the actual piece of evidence so that the jury can see how heavy
12 this thing is. So we wouldn't be moving the Rubbermaid in, but
13 we would be moving the material inside of the bag.

14 MR. WATKINS: So as I understand it, they're mixing
15 exemplar material with an actual exhibit. I would object on
16 that ground because they're moving those two things in --

17 MR. CHAKRAVARTY: The exemplar would be the
18 separate -- would be a new exhibit number, and we would put
19 that new exhibit number in an existing exhibit number for
20 demonstrative purposes. It wouldn't itself --

21 THE COURT: Why can't you just have a similar
22 container?

23 MR. CHAKRAVARTY: We have a similar one. That's what
24 Mr. Watkins is objecting to.

25 MR. WATKINS: They bought the wrong darn container. I

1 mean, it's the wrong size; it's the wrong color.

2 MR. WEINREB: We have the actual container. We can't
3 put real explosive powder in it, so we're proposing to put
4 substitute explosive powder.

5 THE COURT: As long as it doesn't alter the exhibit.

6 MR. CHAKRAVARTY: It won't alter the exhibit. I'll
7 see if they can do it.

8 MR. WATKINS: And then finally, the government is
9 seeking to admit all of these. I understand that they're
10 mockups, they're exemplars, but they do not get into evidence
11 as a general matter, any of these mockups.

12 MR. CHAKRAVARTY: So we think it's important that they
13 do because, first, you can't appreciate the intricacies of the
14 fusing system unless you're handling it. It's one thing to
15 pass it around; it's another thing to actually feel how heavy
16 this thing is. It's important to see how the charges are
17 separated from each other. I think based on his foundation,
18 him saying, "This is how I assembled it," it goes to weight,
19 literally and figuratively.

20 THE COURT: I'll have to think about that.

21 MR. WATKINS: One more: the kill switch. In
22 Watertown -- I object to -- the mockup they have actually has
23 the kill switch being inside of the pressure cooker itself, or
24 at least as I viewed it. That's pure speculation. The kill
25 switch shows no signs of burning. There was nothing to

1 indicate it was on the inside.

2 As he has testified, there is no evidence of the
3 Christmas tree light that would be responsible, exploded or
4 unexploded. Both the battery and this kill switch quite
5 obviously were separate. Maybe they were going to do something
6 with that -- maybe Tamerlan was going to do something with
7 that, but there was -- they were completely separate. It's
8 pure speculation as to this mockup, certainly in his testimony,
9 generally to say that there was a kill switch mechanism.

10 THE COURT: I think it's a matter for
11 cross-examination, that point. You can expose that on
12 cross-examination.

13 MR. WATKINS: Yeah.

14 THE COURT: Okay?

15 (In open court:)

16 BY MR. CHAKRAVARTY:

17 Q. Agent Knapp, based on this evidence that you -- was
18 submitted to you, 949 and 949A, did you create a modified
19 version of an exemplar transmitter that would be comparable to
20 the one that was seized in this case?

21 A. Yes.

22 Q. And how did you make the modifications to the version of
23 the device that you bought off the shelf?

24 A. Removed the trigger and the cutback on the throttle, put
25 the battery pack up beneath where the LCD or the circuit board

1 was. This stuff was -- like I said, we have all kinds of
2 examiners in the FBI in our operational technology division.
3 They have examiners there also. So evidence went over to them,
4 besides in our laboratory, to determine examinations on
5 particular items, whether they're with computers or like this
6 transmitter here that had gone over to them also.

7 But the modifications we made were like the modifications
8 of that transmitter. And that transmitter basically was
9 modified in such a way that when you turn on the power button,
10 it's going to send a full output to that electronic speed
11 controller which then is going to, you know, send the
12 current -- all the current, to those where we talked about,
13 those two outputs to the motor. And where that would have
14 been, that's where the initiator -- the improvised initiator
15 would have been, and it would have -- you know, it would light
16 up.

17 Q. So instead of having to turn the throttle or to pull a
18 trigger, just turning the transmitter on would send a full
19 signal?

20 A. The power button on that Flysky, yes. When you turn that
21 on, it would send a full output to the electronic speed
22 controller because what it was seeing was a full reverse --
23 like you were running the car full reverse.

24 Q. So, Agent Knapp, how sophisticated would you have to be in
25 order to create the improvised explosive device you described?

1 MR. WATKINS: I'm going to object, your Honor.

2 THE COURT: Go ahead. You can answer.

3 THE WITNESS: You have knowledge of hobby cars, the
4 components. You might do a little bit of a testing to make
5 sure you, you know, get the right hookups. But commonly
6 available out there in the Internet, how to modify. There's
7 other Internet sites out there. It's not that too
8 sophisticated. I mean, if you know you have the components of
9 the hobby car, once you use your transmitter, press a button,
10 and you can get it to the output of the electronic speed
11 controller, it's not too difficult of a system to build.

12 BY MR. CHAKRAVARTY:

13 Q. And you mentioned information is available on the Internet
14 about that?

15 A. Right. Widely available on just R/C models and
16 transmitters, different receivers, how to increase power to
17 your cars. All these hobbyists out there that go around and
18 fly planes or race cars.

19 Q. And so that's all with regards to the R/C component, the
20 radio-controlled, remote-control component to this?

21 A. Right.

22 Q. How about the assembly of improvised explosive devices?

23 A. There's many sites out there available on the website.
24 Some give you step-by-step instructions on how to build an IED
25 or bomb.

1 Q. And have you seen pipe bombs many times in your career?

2 A. Yes.

3 Q. And the principles behind building a pipe bomb, are those
4 pretty widely available as well?

5 A. Correct.

6 Q. Now, have you had a chance to review the *Inspire* magazine
7 which details the instructions they propose to build an
8 improvised explosive device?

9 A. Yes.

10 MR. CHAKRAVARTY: If we could call up 1142-91, page 3.
11 Sorry. Next page, please.

12 Q. Agent Knapp, does this first section of the "how to"
13 portion of this article say that there are two types of
14 explosions? The first is a chemical explosion. "This
15 explosive causes great pressure that would kill living beings
16 within a certain radius. Examples are all the military-grade
17 explosions such as TNT, CR and RDX." Did I read that first
18 section properly?

19 A. Yes, just the chemical explosion and you have mechanical
20 explosions.

21 Q. And so the type of IED that you've described on Boylston
22 Street in Watertown, those are not chemical explosions, right?

23 A. Well, there was a chemical reaction for the low explosive,
24 and then the container relieved and mechanically separated with
25 the pressure being built up from the explosives.

1 Q. Okay. So does this article next go on to read, "The
2 mechanical explosion: This results from the burning of an
3 inflammable material within a confined space. An example is
4 putting gunpowder inside an iron pipe with a small opening
5 enough only for a fuse. When the gunpowder is ignited, great
6 pressure results from the gunpowder turning into gases, and
7 which result in the exploding of the iron pipe, turning it into
8 shrapnel flying at a high speed."

9 Did I read that properly?

10 A. Correct.

11 Q. And is that the type of explosion that you were describing
12 earlier?

13 A. Yeah. I mean, it relieves the container, it relieves --
14 just like any buildup of pressure, whatever that comes from,
15 there's a buildup of pressure and it relieves the vessel or
16 container.

17 Q. And does the *Inspire* magazine also suggest an elbow pipe,
18 some flammable material which I think *Inspire* calls
19 "inflammable substance," and then what appears to be a
20 Christmas tree light?

21 A. Yes.

22 Q. Section B gives instructions on how to extract the
23 inflammable substance. And does it say that -- does it propose
24 to strike the head of the match softly?

25 MR. WATKINS: Your Honor, I'm going to object to

1 Mr. Chakravarty continuing to read all of this. If he wants
2 the witness to read...

3 BY MR. CHAKRAVARTY:

4 Q. Agent Knapp, if you wouldn't mind reading --

5 A. "Grind the substance and filter to obtain a fine powder.
6 In the picture you will see the fine powder and you will add
7 sugar equivalent to one-quarter its quantity. Mix the two
8 substances until they become uniform in color."

9 Q. What's the purpose of these instructions?

10 A. Basically to get a low explosion composition, harvest it
11 off of matches, and stick a fuel in there and mix it up and you
12 have a low explosive.

13 MR. CHAKRAVARTY: Next page, please.

14 Q. Preparation of the decoration lamp?

15 A. Yeah, this basically is telling you, you know, be careful
16 how you open up a little Christmas tree bulb. Be careful of
17 the filament, because if you break the continuity of that,
18 you're not going to have an initiator. There's a little
19 filament in there, and they say to carefully place it inside
20 your low explosive. Just an improvised initiator using a
21 Christmas tree bulb.

22 Q. And is that a process that takes some experience in doing
23 effectively?

24 A. It's -- sometimes it can be tricky when you break that
25 glass bulb and then you ruin the inside filament, but it just

1 takes, you know, just a little bit of ability to crack the
2 glass just right. But nothing too sophisticated about that.

3 Q. This next section talks about preparation of the iron pipe
4 and it suggests drilling a hole in the pipe. Is that right?

5 A. Right. I mean, you have to insert your initiator somehow,
6 whether it was a Christmas tree light as they're talking this
7 way, or just a piece of that green hobby fuse into your pipe.

8 MR. CHAKRAVARTY: Next page, please.

9 Q. It says the final preparation. Can you read this, please?

10 A. "Pour some inflammable substance into the lamp. Do so
11 gently in order not to tear the filament, which is very
12 sensitive. The device will not explode if the filament is
13 torn.

14 "Insert the lamp into the pipe with the wires sticking
15 out.

16 "Fill the pipe with the inflammable substance. Avoid
17 having any of the substance on the threads of the pipe so that
18 it won't ignite when closing the pipe.

19 "Wrap tape around the pipe to close the hole which was
20 drilled into the pipe only leaving the wires sticking out. The
21 tape will surround the wires, closing any gaps in the pipe and
22 will not wrap around them."

23 Q. It continues down here.

24 A. "You may substitute the inflammable substance extracted
25 from the matches by gunpowder used in cartridges but you may

1 also use powder from fireworks instead. Note: You do not have
2 to use one substance. You may mix together the substance from
3 matches, gunpowder or fireworks, but in doing so, you'll need
4 to mix them well," and it goes on to talk about electricity
5 source.

6 Q. So just on the flammable substance they're talking about,
7 those are all low explosives that they describe there?

8 A. Yeah, that's low explosive.

9 Q. Okay. Please continue with the electricity source.

10 A. "The importance of the electricity source in the explosive
11 device is that it is the key in igniting the device. The
12 electricity that is sufficient to turn on a small lamp is
13 sufficient to cause an explosion. This electrical current may
14 reach to the lamp directly through a battery, by a time circuit
15 or by a remote-controlled circuit."

16 Q. And is the hobby car fusing system that you described
17 earlier -- is that a remote-controlled circuit?

18 A. That's correct.

19 MR. CHAKRAVARTY: Next page.

20 Q. Now, did they give an example of the timed circuit here?

21 A. Yeah, they have chosen for you a timed circuit as it is
22 simple. "We set up the circuit which is composed of a 9-volt
23 battery, a wire connected to the plus of the battery and a
24 nail, the red wire, a wire connected to the negative of the
25 battery, and a test lamp, the black wire.

1 "Note: You may use any small lamp here. Take notice that
2 this is not a lamp we filled before with the inflammable
3 substance. We connect from the other pole of the lamp a green
4 wire. When this wire touches the nail, the circuit is closed
5 and the lamp should light."

6 This is simply a very basic -- you got a power source.
7 The switch they have is the nail touching the other side of the
8 wire, and the power source is hooked up and you have a little
9 light and it will come on.

10 Q. So far with the exception of the typos, are the
11 instructions they've been giving consistent with how you
12 understand an IED would work?

13 A. Consistent with a fusing system, a simple fusing system,
14 yes; that you could use in an IED, yes.

15 MR. CHAKRAVARTY: Next page, please.

16 Q. And then this page, it describes the --

17 A. Modifying a mechanical clock in using two contacts. Once
18 they touch, it's a switch. Just like in the previous, they use
19 the nail to the wire. They're just using the hands of the
20 clock with a wire. And once -- they're talking about using one
21 of the hands, and once it comes and touches a nail, it
22 completes the circuit, a simple circuit.

23 MR. CHAKRAVARTY: Next page, please.

24 Q. This middle section, is it more details about that timed
25 explosive?

1 A. Yeah, correct, using the timer to function up in the top,
2 the light or how you could set it up to function that pipe
3 bomb.

4 Q. I want to focus in on this bottom section which talks
5 about fragmentation. Can you read that?

6 A. Yeah. "It is important to put a quantity of small nails
7 on the surface of the iron pipe from the inside. You do that
8 by sticking them to the wall of the pipe by using glue. The
9 pipe used here is a 2-inch one. The inflammable substance used
10 to fill it was extracted from 80 match heads. The explosion
11 that results from this device is a mechanical one. It results
12 from the pressure caused by the gases and, therefore, it only
13 works if contained in a high-pressure environment. So you may
14 use iron pipes, pressure cookers, fire extinguishers or empty
15 propane canisters. The point is that the inflammable substance
16 needs to be" --

17 MR. CHAKRAVARTY: Next page, please.

18 A. -- "contained in a strong container that would allow the
19 pressure to build up and thus cause a damaging explosion."

20 Q. All right. If I could ask you to stop there?

21 MR. CHAKRAVARTY: Your Honor, I think we were going to
22 break a little early?

23 THE COURT: How much more do you have on this topic?

24 MR. CHAKRAVARTY: This topic, just to the end of this
25 article. So just a couple more minutes?

1 THE COURT: Yeah, go ahead.

2 BY MR. CHAKRAVARTY:

3 Q. Now, they mention fragmentation such as small nails?

4 A. Right.

5 Q. Which of the devices in this investigation had small nails
6 as an apparent secondary fragmentation?

7 A. That was at Scene B.

8 Q. And that's the blast in front of the Forum restaurant?

9 A. That's correct.

10 Q. Would you please continue reading?

11 A. "However, in order to fill, for example, a pressurized
12 cooker with the substance from matches, it would take a lot of
13 matches to do so; therefore, you may want to use gunpowder or
14 powder from fireworks.

15 "You need to also include shrapnel. The best shrapnel are
16 the spherical-shaped ones. As you can see in the figures
17 below, you need to glue them to the surface of your canister.
18 If steel pellets are not available, you may use nails instead.
19 Above is a 2-inch iron pipe with nails inside it. You fill the
20 inflammable substance afterwards."

21 Q. Please continue.

22 A. "The next three points illustrated by the previous images
23 are for shrapnel used with a gas canister. The shape of nails:
24 You may place the nails in a mold or pour glue over them, and
25 when dry you remove them from the mold, wrap the molded nails

1 around the canister. After wrapping the shrapnel around the
2 canister, empty the canister from the gas and open the valve
3 and then fill it with the inflammable substance. Insert the
4 lamp with the wires sticking out just as you did earlier with
5 the iron pipe.

6 "With that said, here are some important steps to take for
7 an effective explosive device: Place the device in a crowded
8 area. Camouflage the device with something that would not
9 hinder the shrapnel, such as cardboard."

10 Q. When it's talking about gas canister in this article, do
11 you understand that to mean like a propane-gas-type canister
12 or --

13 A. Any type of -- yeah, fire extinguisher, propane canister.

14 Q. And in this investigation did you recover materials such
15 as cardboard --

16 A. Yes, we did.

17 Q. -- from each of the scenes, on Scenes A and B?

18 A. Correct.

19 Q. Read the iron pipe method.

20 A. "The iron pipe method is effective if more than one is
21 used simultaneously. To do so, bundle one wire from each pipe
22 together and then bundle the remaining wires together as you
23 may see in the illustration to the bottom right. One bundle
24 would represent the green wire which connects to the clock's
25 hour arm. The other bundle connects to the...on the battery."

1 The negative of the battery.

2 Q. The negative terminal of the battery?

3 All right. Read this section, please.

4 A. "The pressurized cooker is the most effective method.

5 Glue the shrapnel to the inside of the pressurized cooker, then
6 fill in the cooker with inflammable material. Insert the
7 prepared lamp into the inflammable material gently in order not
8 to break the filament of the lamp. Then have the wires
9 sticking out of the hole in the lid of the cooker. Wrap some
10 tape around the hole to seal any openings and connect the wires
11 to the electric source in the same way we did with the iron
12 pipe."

13 Q. With regards to the non-electrical fusing system that you
14 found from the Boylston Street devices, are these instructions
15 consistent with what you uncovered in your investigation?

16 A. Right. They add the fragmentation, the shrapnel. They
17 had the BBs in Scene A embedded with a sealant, and they had
18 the fragmentation with the BBs and the small nails inside the
19 pressure cooker in Scene B, in a sealant.

20 Q. And then you described earlier the nuance with getting the
21 Christmas tree light done right?

22 A. That's correct.

23 Q. I'll conclude with this. Read the safety precautions.

24 A. "The following are a few safety precautions: Put your
25 trust in Allah and pray for the success of your operation.

1 This is the most important rule: To wear gloves throughout the
2 preparation of the explosive to avoid leaving behind
3 fingerprints. Three, this is an explosive device so take care
4 during preparation and handling. In the article we covered one
5 of the many ideas for a lone mujahideen. We ask Allah to
6 assist our brothers in targeting his enemies and we ask Allah
7 to grant us victory."

8 MR. CHAKRAVARTY: This is a good place to break, your
9 Honor.

10 THE COURT: All right. We'll take the recess at this
11 point.

12 THE CLERK: All rise for the Court and the jury. The
13 Court will take the lunch recess.

14 (The Court and jury exit the courtroom and there is a
15 recess in the proceedings at 12:53 p.m.)

16 THE CLERK: All rise for the Court and the jury.

17 (The Court and jury enter the courtroom at 2:13 p.m.)

18 THE CLERK: Be seated.

19 BY MR. CHAKRAVARTY:

20 Q. Agent Knapp, you described earlier that some mockup
21 devices were made, and you said that you had constructed the
22 configuration of these mockup devices to comport to the devices
23 that you've spoken about that were -- evidence of which was
24 found in this case. Is that right?

25 A. Yes, that's correct.

1 Q. Did you bring those into court with you today?

2 A. Yes.

3 Q. And so do you have a mockup device for the Scene A
4 pressure cooker bomb?

5 A. Correct.

6 Q. And that we'll call 1568. And for the Scene B pressure
7 cooker bomb, is that 1569?

8 A. Correct.

9 Q. And then for the materials that -- the inert explosive
10 materials that were in the Rubbermaid container that was found
11 in Watertown, did you bring an inert facsimile of that
12 substance?

13 A. Yes.

14 Q. Okay. And for the facsimile of that substance, we're
15 going to mark that as 1570. And for the pressure cooker bomb
16 at Watertown, is that 1571?

17 A. Am I supposed to be seeing something on the screen?

18 Q. You don't know the number. Okay. I'll show you.

19 Did you bring the mockup for the Watertown pressure cooker
20 bomb?

21 A. Yes.

22 Q. And did you also bring the mockups for the two pipe bombs
23 that were rendered safe in Watertown and you had mockups made?

24 A. That's correct.

25 Q. And are all of these helpful to explaining your testimony

1 about how each of these devices worked?

2 A. For the fusing systems, yes.

3 Q. And can you explain how you approximated how much
4 explosive material to put in?

5 A. Before the -- we said the volume of those Fagor pressure
6 cookers, half to full, estimated that it was about eight pounds
7 if it was full to 16 pounds, and then of course the smaller one
8 would have had less than the larger ones.

9 Q. And about -- for the pipe bombs, you actually were able to
10 collect the unexploded material from the Watertown devices. Is
11 that fair to say?

12 A. Well, they were -- like I said, they were rendered safe
13 and the powder was taken out of them before they came down to
14 us.

15 Q. And did you approximate that -- sorry. In the mockups
16 that you made there is no powder, correct?

17 A. There is no powder.

18 MR. CHAKRAVARTY: Your Honor, at this point I would
19 ask permission to have SSA Knapp approach the podium with each
20 of those exhibits and demonstrate -- or to show that -- each of
21 the components of those exhibits to the jury.

22 THE COURT: That's fine. It's ahead of the -- I'm not
23 sure if you've worked out the lines of sight for counsel.

24 MR. WATKINS: I'll move around if the Court doesn't
25 mind.

1 THE COURT: Move around or move to a spot?

2 (Laughter.)

3 MR. WATKINS: I will move to one spot and try my best
4 to stay still.

5 THE COURT: Okay. Go ahead. Proceed.

6 BY MR. CHAKRAVARTY:

7 Q. Agent Knapp, if you'll come to the podium here again.

8 A. (Witness complies.)

9 Q. Agent Knapp, just keep your voice up so everyone can hear
10 what you're saying.

11 A. This was the pressure cookers from the mockup from Scene
12 A, a hobby fuse coming out of it. Inside was the fusing system
13 we talked about earlier. Now, we found fragments of cardboard
14 taped up around, and then the inside -- I mean, the
15 fragmentation was on the inside and it was with a sealant, and
16 these were where the BBs were encased inside. We found this
17 pink-like rosin paper encasing just on the outside. Those
18 would have been placed in here.

19 And this was the -- what we talked about before,
20 electronic speed controller. We have the Flysky receiver here.
21 Here was the toggle switch, the power source. And off the
22 electronic speed controller where the two outputs would go to
23 the motor and an improvised initiator was connected in. And
24 we're representing this as the lightbulb right here. But the
25 improvised lightbulb would have been into the main charge, the

1 low explosive.

2 Q. So when you say it would be into the main charge, meaning
3 that --

4 A. Yeah, this is just represented in the bag because it would
5 be pretty messy in here otherwise.

6 But anyway, this was placed inside the pot. You know,
7 there was -- the tape was crossed over, you saw, in some of
8 those pictures there, and then it was placed in the backpack.
9 Into a backpack.

10 You know, this was found at Watertown, and this is the
11 mockup of what was found there out of a bag. But this is
12 actually what the controller would look like.

13 Q. For the record -- one moment. Just for the record, you're
14 holding up two transmitters. One appears to be a modified
15 Flysky transmitter and one is an intact Flysky --

16 A. Yeah, this is what it would have looked like where the
17 pistol grip, the trigger control and the wheel for steering the
18 car. That's the battery pack where it was cut off and placed
19 underneath, and all these buttons here are gone, but the dials
20 are still underneath it. So this was how that was found.

21 Q. Now, just to clarify, the modified device you just held
22 up, that's a mockup, not the original evidence that we saw --

23 A. Yes, this is the mockup of the Flysky, what we found at
24 the scene.

25 Q. Agent Knapp, could you put the pressure cooker into the

1 backpack?

2 A. I mean, it is pretty heavy.

3 MR. CHAKRAVARTY: Your Honor, I would ask for
4 permission -- first, with regard to all of these, I'll move
5 them in -- or make a motion to move them into evidence, but if
6 I may ask to publish them in the backpack so that the jury
7 can -- actually, maybe take it out of the backpack -- excuse
8 me -- so the jury can actually see it close up.

9 MR. WATKINS: I object to actually admitting them.
10 Passing them around, no problem.

11 THE COURT: I'll reserve on the admission, as we've
12 discussed, but you may exhibit them.

13 BY MR. CHAKRAVARTY:

14 Q. Agent Knapp, if you would be so kind to pass around this
15 device.

16 A. You want the lid --

17 Q. Take the lid off.

18 (The exhibit is published to the jury.)

19 Q. Agent Knapp, while the jury's looking at that, just to
20 clarify, all of the powder that you have in these exemplars is
21 inert and poses no danger from any of these devices?

22 A. That's correct.

23 (The exhibit is published to the jurors.)

24 Q. Agent Knapp, the configuration of the various components
25 that are in the mockup, how did you arrive at that architecture

1 given the fact that the devices that were used were actually
2 exploded and you didn't have the original to model it after?
3 A. Well, like I said before, at the scene all the evidence
4 that was collected, the damaged electronic speed controller,
5 the Flysky, the battery parts and that really damaged toggle
6 switch, to have this operate, it has to be plugged up in such a
7 way that leads -- the power source goes to the electronic speed
8 controller in this fashion, the toggle switch was wired up
9 coming off one of the -- we found the inputs into the
10 electronic speed controller so it would basically break the
11 signal when there was an output to this improvised Christmas
12 tree.

13 So when you turn it on, where there's a slide switch here
14 that initialized what we talked about, then it doesn't send an
15 output to that light and it will trigger that light, it will
16 flash. So there was an interruption, so a toggle switch was
17 used to break that circuit momentarily until this initialized.
18 And then this is in the off position right now as it stands,
19 and they just have to go and turn it on so it will complete the
20 circuit.

21 Q. Okay. Thank you. With regard to the transmitter that was
22 modified, with the absence of the throttle and the trigger like
23 you demonstrated, what would happen when you turned that on?

24 A. As I talked about before, the modification -- when they
25 modified it from here, what would happen is when you turn this

1 on, it would be like you were pressing this trigger full speed
2 backwards, so there would be an output as soon as you turn
3 on -- here's the power button, usually on the back. When you
4 turn that on, it would send that output directly to the
5 receiver, which then the electronic speed controller would
6 interpret it and send it to the output where the improvised
7 initiator was going to be.

8 Q. And this is a Flysky transmitter and a Flysky receiver in
9 this setup, correct?

10 A. Yes, that's correct.

11 Q. Thank you. Can we move on to Exhibit 1569, which is the
12 Scene B exemplar? Or I should ask: Is there anything else
13 about this that you haven't described?

14 A. Everything that was from the scene that we gathered up is
15 represented here in this mockup.

16 Q. Thank you. Can we move on, then, to the Scene B exemplar?

17 A. Once again, there was a backpack that was concealing the
18 device. Same-type pot, the Fagor. It had hobby fuse going
19 into it as a second form of initiation if the R/C fusing system
20 didn't work.

21 Like we talked about, at the scene what was collected,
22 there was a power source which is basically just another Sub-C
23 pack power source for a hobby car. This was the electronic
24 speed controller and this would be the receiver. And this
25 electronic speed controller, you know, the slide switch to

1 initialize in this position here. There were -- the two
2 outputs that would normally go to the motor is going to the
3 improvised initiator, same type.

4 And the only difference is, you know, there was -- besides
5 the BBs, there were these small steel nails that was embedded
6 into the -- with the BBs.

7 Q. But the fragmentation sleeve, that's in the sealant
8 against the interior walls of the pressure cooker?

9 A. Right. And we saw that with the red rosin paper again and
10 the fragmentation, and then it was also -- had tape on it again
11 consistent with Scene A.

12 Q. Thank you.

13 MR. CHAKRAVARTY: Again, your Honor, I would ask to
14 publish 1569, the Scene B exemplar.

15 THE COURT: All right.

16 THE WITNESS: And as far as demonstration purposes,
17 there was a transmitter that, you know, we purchased off of
18 those receipts that we talked about, the transmitter, receiver,
19 and I have an unmodified transmitter here today.

20 BY MR. CHAKRAVARTY:

21 Q. That's because the transmitter for the Scene B device was
22 not actually located, correct?

23 A. That is correct.

24 Q. So you bought one that was -- married the receipt that we
25 saw earlier?

1 A. Yes.

2 Q. Please publish the -- this device. If you can hand it to
3 Juror No. 1.

4 (The exhibit is published to the jurors.)

5 Q. Now, significantly, Agent Knapp, there's no toggle switch
6 on this device. Is that correct?

7 A. Yeah. Like we talked about earlier, that once you
8 initialized it, it didn't have enough output, or there was no
9 current going to that improvised initiator, so there was none
10 needed.

11 Q. Thank you, Agent Knapp.

12 If we could move on to Exhibit 1570. This is the
13 Watertown evidence -- sorry -- Watertown mockups.

14 Agent Knapp, let's first start with the pressure cooker
15 device, Exhibit 1571. Can you explain the architecture of that
16 mockup?

17 A. Yeah, it was a Fagor. There was cardboard -- circular
18 cardboard found, that was burnt and charred, at the scene also.
19 There was a toggle switch with wire found, basically a 9-volt
20 battery. Like I said before, there was no improvised initiator
21 attached to this, but there was a length of wire with just a
22 simple flip up on-and-off toggle switch.

23 Q. None of the circuitry that we saw in the other two devices
24 existed in the Watertown pressure cooker?

25 A. No. And there was the same type of construction with the

1 BBs, pink/red -- the pink rosin paper was found at the scene
2 with the fragmentation.

3 Q. And was there also an alternate fusing system?

4 A. Well, there were holes poked through here, through the
5 cardboard which was damaged and burnt. And basically, hobby
6 fuse, when it burns, it's going to go away. So the primary
7 means of initiation would have been this hobby fuse, and you
8 have that as a secondary type of initiation.

9 Q. Okay. And how does this device compare in relative weight
10 to the other two devices that the jury just saw?

11 A. Half the weight.

12 Q. Fair enough. Thank you.

13 Let's move on to the two pipe bomb exemplars, 1572.

14 Agent Knapp, just one more question on that Watertown
15 device as you're opening that bag. The pieces of the Watertown
16 pressure cooker were more intact than those on Boylston Street.
17 How would you attribute that? How would you explain that?

18 A. That is correct. I mean, pretty much the whole base of
19 that pot was just crumbled and crushed. But as far as -- an
20 explosion happened, but that could have been due to
21 confinement. That was more than likely thrown and the lid
22 probably was -- came un- -- I mean, we found no evidence of any
23 tape around it. So if the lid did come unseated, you know,
24 it's still intact and it's almost acting like a projectile.
25 And it just basically violently flew in one direction, and I

1 believe that was found embedded --

2 MR. WATKINS: I'm going to object, your Honor.

3 THE WITNESS: -- in pictures --

4 THE COURT: That's all right. Overruled. Go ahead.
5 You can continue.

6 THE WITNESS: -- into a car.

7 BY MR. CHAKRAVARTY:

8 Q. Thank you. Please move on to the pipe bombs.

9 A. It's simple. Your loads are Home Depot 2-inch-diameter
10 pipes. You can put any powder in, but basically it was
11 fragmentation. And in some of the ones that did go off, you
12 can see the circular impressions in some of the pieces that
13 they also had fragmentation in the pipe. It was just a simple
14 hobby fuse lighted and you throw it.

15 Q. Now, there's some tape on the threads of the end caps. Is
16 that --

17 A. Right. I mean, usually -- yeah, we -- in our training
18 we'll make what -- we use Vaseline basically so you cause no
19 friction. A possible low explosive can ignite it. Like we
20 read in that manual before, that *Inspire*, about be careful, you
21 know, threads. So Teflon just to ease so there's no friction
22 buildup between the threads.

23 Q. And just speaking of tape, were there various tapes
24 submitted as evidence in this investigation?

25 A. Yeah, there was numerous types of tape: black electrical

1 tape, this Teflon tape, duct tape, clear packing tape. Just
2 commonly available items seen over the years of being put in a
3 device, like I'm taping up the hobby fuse or taping up wires
4 together, but it's just available material used to construct a
5 device.

6 Q. And in addition to that tape, there's some electrical
7 tape, it looks like, on both of these devices?

8 A. When it came in, there was electrical tape on the
9 initial -- or the actual devices, yes.

10 Q. And each of these mockups represents a rendered-safe
11 intact device?

12 A. That is correct.

13 Q. So we don't know exactly what the other pipe bombs that
14 exploded may have looked like?

15 A. Right. They were just fragmentation, pieces of the pipe.

16 Q. And is the elbow, 90-degree elbow pipe, similar in terms
17 of construction?

18 A. Yeah, just they -- a 90-degree pipe.

19 MR. CHAKRAVARTY: Your Honor, I would ask to publish
20 1572.

21 THE COURT: Okay.

22 BY MR. CHAKRAVARTY:

23 Q. I'm sorry. "Publish" means to give it to the jury.

24 A. The pot too?

25 Q. No, just those two -- the pipes; not the pot.

1 (The exhibit is published to the jurors.)

2 Q. While they're doing that, let's set up the next one.
3 Exhibit 1570 is the plastic bag of powder that you just placed
4 on counsel table. If you wouldn't mind retrieving a piece of
5 evidence in the Rubbermaid container.

6 A. (Witness complies.)

7 Q. You just picked up Exhibit 854 which was the -- well, what
8 is it?

9 A. This is the container that approximately three pounds of
10 low explosives were recovered in, and it had -- in the lid it
11 had a hole in it and it had three pieces of hobby fuse coming
12 out of it.

13 Q. All right. And if you wouldn't mind just placing the --
14 1570, the bag, into the container and holding it up?

15 A. (Witness complies.)

16 Q. Agent Knapp, if you would hold up Exhibit 854 containing
17 Item 1570. Would you take off the lid just so the jury can get
18 a sense of how much of that Rubbermaid container was filled.

19 A. And of course, there was all the hobby fuse that was
20 packed in here amongst the powder.

21 Q. And was the hobby fuse lying on top of the powder?

22 A. Yes.

23 Q. And the hobby fuse itself has some explosive material in
24 it. Is that correct?

25 A. That's correct.

1 Q. And was the strand of hobby fuse sticking out through the
2 top of that lid?

3 A. Yeah, there was three pieces.

4 Q. Thank you. And, Agent Knapp, we're done showing
5 the -- these exhibits to the jury. I just wanted to ask you to
6 put that away, and then we'll do a demonstration of the exhibit
7 1568 and 1569, with the Court's permission.

8 MR. CHAKRAVARTY: I'm seeking the Court's permission
9 to do that demonstration.

10 THE COURT: Okay.

11 MR. CHAKRAVARTY: Thank you.

12 THE COURT: I don't know what the demonstration
13 entails. It's kind of a blank check.

14 (Laughter.)

15 BY MR. CHAKRAVARTY:

16 Q. So, Agent Knapp, if you would take the remote control
17 transmitter for each of those mockups and perhaps resume the
18 witness stand. And you place each of these devices either on
19 the podium or I can hold one.

20 (Pause.)

21 A. Like I said before --

22 THE COURT: Why don't we have a question.

23 MR. CHAKRAVARTY: Yeah, thank you.

24 BY MR. CHAKRAVARTY:

25 Q. Thank you. Agent Knapp, first of all, you've taken off

1 the lid of Exhibits 1568 and 1569, correct?

2 A. Yes, correct.

3 Q. And each of the -- each of those receivers for each of
4 those radio-controlled devices has been bound to the respective
5 transmitters. Is that accurate?

6 A. Yes, that's correct.

7 Q. And how did you learn to do that?

8 A. Basically, R/C hobby model cars, there's instructions out
9 there widely available, there's manual -- instruction manuals
10 that come. And based on the evidence collected, as I said
11 before, I put it into the appropriate configuration as the
12 fusing system would have been in Scene A.

13 Q. Do the instruction manuals for each of those devices also
14 have the binding procedures?

15 A. It's a simple process where you bind the receiver to the
16 transmitter, you turn on the power on the receiver, and then
17 there's a bind -- there's this little bind button up here that
18 you press in and then you turn the power on, and then there's a
19 blinking light. And then once it's bound, it stays solid. And
20 then you remove the little binding plug and you put the plugs
21 into the appropriate channel in the receiver and get ready
22 to -- you know, if you had a hobby car, you would get ready to
23 drive, steer it, move it.

24 Q. And is the Flysky receiver bound to the Flysky transmitter
25 that you brought?

1 A. The modified, yes.

2 Q. The modified transmitter? And the Spektrum receiver is
3 bound to the Spektrum exemplar that you had purchased as well?

4 A. That is correct.

5 Q. In your experience in making these mockups and testing
6 them, was one transmitter capable of activating the other
7 receiver?

8 A. As I said, they use two different forms to communicate.
9 Spektrum uses a digital sequencing and the Flysky uses
10 sequencing hopping. So the transmitter and the receiver have
11 to have that type of technology so they can communicate with
12 each other. That has the digital sequencing and the Flysky has
13 the frequency hopping.

14 Q. So they don't communicate?

15 A. No.

16 Q. You described an arming procedure that's required for each
17 of the receivers, for the receiver-electronic speed controller
18 combination.

19 A. But you have to initialize each one. Basically there's a
20 little slide switch from the electronic speed control you turn
21 on and it powers it up, and then it goes through its little
22 sequence, and then it's waiting for the signal from the
23 transmitter to receive an input.

24 Q. And so can you position the Christmas tree light for each
25 of these devices in a way that the jury can see whether the

1 light turns on.

2 A. (Witness complies.)

3 Q. Now, in the improvised explosive device, that Christmas
4 tree light filament would be embedded in the explosive
5 material. Is that right?

6 A. Yes.

7 Q. So now, if you can arm each of the devices and then resume
8 the witness stand with the respective transmitters?

9 A. Okay.

10 Q. I'm sorry. Is there anything else that you need to
11 describe about what you're doing?

12 A. No. Basically, it's turned on. You can see there's power
13 coming to it. And right now it's in the safe-arm position. So
14 when you turn it on, it wouldn't get a little blink on the
15 light. And if it was on -- do you see that blink -- that would
16 cause the power to detonate it.

17 Q. Agent Knapp, you're going to have to get back to a
18 microphone.

19 A. So I'm going to go to the safe arm -- I'm going to take it
20 off the safe arm -- I'm going to put it on safe. It's
21 initializing, and in a couple of seconds, and then I'm turning
22 it on. Now all I have to do is press this button to turn the
23 receiver on.

24 Q. Okay. And you've pressed the modified Flysky transmitter
25 and it's activated, the device, 1568, the Scene A mockup?

1 A. Correct.

2 Q. Now, please go on to 1569, the Scene B mockup.

3 A. Once again, there's a slide switch here. But we didn't
4 know the configuration of this transmitter, the controller.
5 But the slide switch is on and it's armed. And then you just
6 have to put an input from this transmitter to it.

7 Q. And you've depressed the transmitter in the exemplar,
8 Spektrum transmitter, and it has activated the Christmas tree
9 light on the 1569, Scene B mockup. Is that right?

10 A. Correct.

11 Q. Now, you obviously did that here at close range. And you
12 don't know the exact range of each of these devices. Is that
13 right?

14 A. That's correct.

15 Q. When you activated one of the transmitters, it did not
16 activate the Christmas tree light on the other receiver. Is
17 that correct?

18 A. That's correct.

19 MR. CHAKRAVARTY: That's all I have, your Honor.

20 THE COURT: Mr. Watkins, do you want the witness there
21 or on the stand?

22 MR. WATKINS: I would like to start off there.

23 THE COURT: Okay. Fine.

24 CROSS-EXAMINATION

25 BY MR. WATKINS:

1 Q. Good afternoon, Agent Knapp.

2 A. Good afternoon.

3 Q. 1568 is this one, correct, from Scene A?

4 I'm going to move this over to counsel table.

5 THE COURT: Mr. Watkins, you stay near the microphone
6 too, please.

7 MR. WATKINS: I will. I know I have a soft voice.

8 THE COURT: It's not just for the room; it's for
9 transmission to other rooms as well.

10 BY MR. WATKINS:

11 Q. Now, Agent Knapp, as I understand it, it's -- the two
12 switches on here, right, this one has to be turned on. The
13 problem is when this one turns on, this immediately does a
14 little cycle that would light up the Christmas tree light and
15 that would ignite, right?

16 A. Correct.

17 Q. And that's why it needed this added feature of this arming
18 switch, right?

19 A. That's a safe-and-arm toggle switch.

20 Q. Safe-and-arm toggle switch. Because then it runs its
21 cycle, you can put that switch on, and then it's ready to go,
22 right?

23 A. It's waiting for input from the transmitter.

24 Q. From the transmitter.

25 Now, this battery pack here, this doesn't last forever.

1 Like any other battery pack, you have to recharge it. It will
2 lose power over time, correct?

3 A. That's correct.

4 Q. And not only will it lose power, but if it's on all the
5 time, it will drain the battery. The battery will go dead,
6 right?

7 A. Well, if you're not putting an input and you're running
8 the motor and the battery is then being drained because you're
9 speeding around on your hobby car.

10 Q. Correct. Or it's just the electronic speed controller
11 takes a certain amount of energy itself, right?

12 A. There's a little bit of energy. But not like taking it
13 and driving the car on the motor.

14 Q. Of course. So in order for this to work, this has to be
15 charged up. It has to have a charge in it, right?

16 A. That's correct.

17 Q. And then it would go into this pressure cooker pot.

18 Now, I saw -- I think the jury saw there are actually two
19 pieces of cardboard in each of these pressure cooker bombs,
20 right?

21 A. Right.

22 Q. And that is consistent with what you found on the street
23 at each scene, there were two kind of -- I mean, there were
24 shards but you could identify two of these, right?

25 A. There was -- yes, there was two. Well, there was

1 cardboard, very fragmented, with duct tape around it of a
2 circular nature, yes.

3 Q. And two pieces at each site, right?

4 A. Well, and then Watertown, I think there was three without
5 duct tape on it.

6 Q. So you put both of these in. But you don't know what the
7 order, for example, of these pieces of cardboard were in there,
8 right?

9 A. No.

10 Q. And indeed, this one could be on top and -- where did our
11 lid go? There it is. Go on top like that?

12 A. Sure.

13 Q. So going back, then, to this arming switch, you could turn
14 this on, but at some point when you're getting to use it, this
15 safe arm switch is the last thing that's going to happen to
16 make it operational, correct?

17 A. Yes.

18 Q. Okay. So one would flip the switch and put it back in
19 here and then put this down on here and close it up, and then
20 all we could do is wait for the signal from the transmitter,
21 right?

22 A. If it was on, yes.

23 Q. So again, the last thing that actually went inside when I
24 just did that was this piece of cardboard, right?

25 A. Yes.

1 Q. I think I'm done here. If you could go back to the stand,
2 I'll go back to my usual spot.

3 MR. WATKINS: I'm actually not getting any screens at
4 this point.

5 THE COURT: No, you're not. What do you want, the
6 computer?

7 MR. WATKINS: Yes, please. There we are.

8 BY MR. WATKINS:

9 Q. You talked a little bit about what your role became once
10 the bombing happened on April 15th. You stayed down in
11 Quantico, and part of what you did was intake evidence there,
12 right?

13 A. Yeah. I was down in Quantico, in the explosives unit, and
14 the evidence started coming down to the laboratory.

15 Q. And so when that came in, you would identify -- or you
16 would help identify it as maybe part of an explosive item that
17 would be within your purview? In other words, items would come
18 down, this might be involved with an explosive device, it goes
19 to Agent Knapp -- or you would decide it goes to Agent Knapp in
20 the explosives unit?

21 A. That was decided at -- once an explosive event or
22 explosive case, it would come through our unit, and an examiner
23 was assigned. And I was the examiner that was assigned to this
24 case.

25 Q. And because there were -- I think you said really

1 thousands of items of evidence that were tied to the explosive
2 device, right?

3 A. Yes, there was over 1300 individual submissions of items
4 that came in.

5 Q. And some of those had sub-items that went to hundreds of
6 items, right?

7 A. There was a lot, yes.

8 Q. I'm showing you --

9 MR. WATKINS: I think this is in evidence, your Honor,
10 but perhaps it should just go to the witness to make sure.

11 Q. Do you recognize what is depicted on the screen?

12 A. Fragmented remains of cardboard.

13 Q. And that's identified as Q199?

14 A. That's correct.

15 Q. And was that one of the items that you listed in your
16 report as being associated with the bombs?

17 A. Correct; it was listed in my report.

18 Q. And now, I do believe this is in evidence as part of 623
19 because I think I've seen it there, but we don't have sub
20 numbers for that. I'm going to ask my colleagues if they could
21 determine. Otherwise, I'll admit it separately.

22 THE COURT: It doesn't hurt to admit it separately.

23 MR. WATKINS: Then I would move for admission of
24 Defendant's Exhibit 3093.

25 MR. CHAKRAVARTY: No objection, your Honor.

1 (Defense Exhibit No. 3093 received into evidence.)

2 MR. WATKINS: While that's being shown on the screen,
3 may I approach, please?

4 BY MR. WATKINS:

5 Q. You, in your report, identified this as fragments of
6 cardboard collected at Scene A. Is that correct?

7 THE COURT: Are you getting the picture?

8 THE JURORS: No.

9 MR. WATKINS: Oh, I'm sorry.

10 THE COURT: Now? Okay. Sometimes there's a delay.

11 BY MR. WATKINS:

12 Q. Is that right, you identified a number of items?

13 A. I've identified a lot of items, but I don't have my report
14 available, so...

15 Q. Your report is 108 pages long?

16 A. That's correct.

17 Q. Did you -- I thought you told Mr. Chakravarty that you
18 looked over your report before you came in today?

19 A. I looked over the report previously.

20 Q. I'm sorry?

21 A. I had looked over it previously, but not this morning or
22 today.

23 Q. But just sitting here now, you know that cardboard came
24 in, and that was analyzed and found to be part of one of the
25 bombs?

1 A. Correct.

2 Q. And you talked about the multidiscipline -- the different
3 disciplinary areas within the FBI laboratory, right? You
4 talked about fingerprint identification, you talked about
5 chemistry, you talked about -- what else, firearms
6 identification, I think, DNA? There's all kinds of different
7 disciplines within the lab, right?

8 A. Correct. There are multiple disciplines within the
9 laboratory.

10 Q. And part of what you do when you see something come in for
11 analysis is to also help to determine where that should go
12 next, in other words, whether it should go to another
13 discipline either after you've seen it or after you've done
14 your full analysis?

15 A. Yes. There's what we call an examination report where the
16 evidence is flowing through the laboratory, what disciplines
17 get certain particular pieces of items which will then
18 eventually -- once those examiners do their examinations, then
19 the evidence will be coming back over to the explosive unit, to
20 myself, to analyze the bits and pieces of the parts.

21 Q. In the early stages of the Boston Marathon bombing case,
22 all of the disciplines communicated with each other. There
23 were daily meetings about the evidence, right?

24 A. Basically there was an exam plan started. And depending
25 on what it was, it went to those examiners, and then it went to

1 the next examiner, whatever discipline that was, and -- but
2 there was other communication going on.

3 Q. And there were, indeed, daily meetings about the evidence
4 and the -- what should be analyzed and how far people had
5 gotten with their analysis on the Boston Marathon bombing case,
6 right?

7 A. Right. That was a bigger picture -- I mean, the lab was
8 doing its part, but then there was these daily meetings with
9 our FBI headquarters and other FBI entities involved in this
10 case.

11 Q. Ms. Clarke has helped me out. Can I refresh you with your
12 report about Q199 came from?

13 A. Sure.

14 Q. It's on the computer here. So you could see the heading
15 from your report. Don't read it, but I want to point out where
16 you are. And you recognize that as something you would do on
17 your report?

18 A. Yeah, the various Q items, right.

19 Q. Right. And then if you scroll down to the next page,
20 we're looking for Q199. Yeah, there we go.

21 A. Right.

22 Q. So does that refresh your recollection where Q199 came
23 from?

24 A. From Scene A.

25 Q. And when you're talking about Scene A, that's the Boston

1 Marathon bombing Scene A?

2 A. Correct.

3 Q. So to get back to Q199, these shreds, they were sent to
4 other disciplines for analysis also, right?

5 A. Yes, that's correct.

6 Q. The shreds from Q199 which was found at Scene A was sent
7 for fingerprint analysis. Is that correct?

8 MR. CHAKRAVARTY: Objection, your Honor, to this line.
9 Not to this question but to the --

10 THE COURT: Well, you can have this question.

11 BY MR. WATKINS:

12 Q. Did it get sent for analysis?

13 A. Yes.

14 Q. Do you know whether positive results of a fingerprint
15 analysis were done?

16 MR. CHAKRAVARTY: Objection, your Honor.

17 THE COURT: Sustained.

18 BY MR. WATKINS:

19 Q. Showing you the remains of the backpack that were found at
20 Scene B, Boylston, marathon bombing, do you recognize that and
21 do you recognize the Q number? It's hard to read, but I think
22 Mr. Chakravarty put this up for you just before.

23 A. That looks like Q51?

24 Q. This would be Q11.

25 A. Q11.

1 Q. Do you know what --

2 A. Remains of a backpack.

3 Q. And inside of that backpack were remnants of pieces of
4 paper?

5 A. Yeah, correct.

6 Q. Do you know whether that was sent for fingerprint
7 analysis?

8 A. Yes, that was sent for analysis.

9 Q. And do you know whether there were results obtained?

10 MR. CHAKRAVARTY: Objection, your Honor.

11 THE COURT: Sustained.

12 BY MR. WATKINS:

13 Q. Showing you a picture of Exhibit 974, do you recognize
14 that as the lid recovered in Watertown that came to you for
15 analysis?

16 A. Yes.

17 Q. And that's the pressure cooker lid?

18 A. Correct.

19 Q. Do you know whether that item was sent for fingerprint
20 analysis?

21 A. A lot of these items basically were sent out to the
22 various disciplines. That one would have been sent out also
23 looking for fingerprints.

24 Q. And the reason to send something out from an explosives
25 point of view, a metal surface like this can capture

1 fingerprints pretty easily, correct?

2 MR. CHAKRAVARTY: Objection, your Honor.

3 THE COURT: Sustained.

4 BY MR. WATKINS:

5 Q. The FBI has a protocol about what order things are to be
6 analyzed in, a general protocol?

7 A. If they're looking for trace, possibly DNA or latent
8 fingerprints, that would -- depending on what we're looking
9 for, a combination, it could go to latents first for visuals;
10 come back if they're looking for trace evidence, hair or other
11 things; or it might end up going to DNA to take a swab and a
12 sample. It just all depends what's the evidence, what piece
13 of -- what it is and then where it's going to go first.

14 Q. And those were the kinds of decisions that were being made
15 at Quantico as each of these pieces of evidence came in?

16 A. As it came into the lab and then examined, a plan was
17 established. And evidence just kept coming in, and the various
18 disciplines and examiners were getting this evidence and doing
19 their examinations on it.

20 Q. Now, I want to move to the transmitters that you talked
21 about as the fusing system. There was a lot of testing done on
22 these particular transmitters, and you talked about people
23 buying exemplars and things of that nature?

24 A. We -- the explosion unit, we ended up purchasing these
25 products, yes.

1 Q. That's what I'm getting at. It was a "we." It was a
2 group effort; it wasn't you doing all of these particular
3 things, right?

4 A. There were other examiners in our unit purchasing, and
5 some individuals going out, looking for the type of pots that
6 were used, yes.

7 Q. Now -- but they also did independent testing of the
8 circuits and tried to make sure that -- well, they came to the
9 conclusion that you reported here about these transmitters
10 binding to these receivers, right?

11 MR. CHAKRAVARTY: Objection, your Honor. Objection.

12 THE COURT: Sustained.

13 BY MR. WATKINS:

14 Q. And they issued a report, right, of their own about the
15 transmitters and receivers?

16 MR. CHAKRAVARTY: Objection.

17 THE COURT: Let me see you at the side.

18 (Discussion at sidebar and out of the hearing of the
19 jury:)

20 MR. CHAKRAVARTY: The government was restricted from
21 incorporating the very same type of testimony that the defense
22 is now attempting to elicit, but this is something beyond his
23 expertise. He just simply looked at results of other -- the
24 other disciplines, and in some cases he incorporated reference
25 to the fact that other people had done their own independent

1 tests in his report. But he didn't adopt the findings of all
2 of those in order to make his assessment.

3 I mean, that would pull the sting out of whatever
4 Mr. Watkins was going to do, had he been transparent about the
5 strategy of first bringing it out on cross.

6 MR. WATKINS: No, I did it in a very evenhanded way.
7 He testified on direct that he didn't know what the distance
8 that each one of them could go on was. The report actually
9 says, quite specifically, what the distance of each of the
10 transmitter receiver pairs was.

11 That's all I was doing, was gearing up to do a kind of
12 refresh recollection with him with these reports. And that's
13 why I was asking about the reports. That's the one and only
14 question.

15 THE COURT: He didn't testify to it.

16 MR. WATKINS: No. Mr. Chakravarty asked him "Do you
17 know what the distance is" --

18 THE COURT: And he said no.

19 MR. WATKINS: He said, "I don't know," but he knows
20 this report and he does know. There were a lot of things he
21 did not know until he prepared for testimony today using those
22 kinds of reports.

23 THE COURT: It looks like you're trying to
24 cross-examine your own evidence. I mean, you want to get it in
25 so you can criticize it.

1 MR. WATKINS: No.

2 THE COURT: I'm not following this.

3 MR. WATKINS: All I want to get in is the distance
4 that -- one of the transmitters had a distance of 572 feet; the
5 other one had 1100 feet. The evidence is that our client kind
6 of raced away from the one scene, and it goes to his
7 sophistication concerning, you know, what he knew about the
8 particular item and its attributes.

9 MR. CHAKRAVARTY: Any information about the range was
10 not from this witness; it was from this other expert who was
11 doing his own independent analysis. He didn't incorporate that
12 into his findings and he didn't do it.

13 MR. WATKINS: That's not true. It is in his report.
14 It is in his report.

15 MR. WEINREB: We have good reason to exclude it under
16 403 grounds because the purpose of this examination is to
17 suggest that Tamerlan Tsarnaev could have detonated that second
18 bomb, which the defense has no good-faith basis for suggesting
19 because they know that it's not --

20 THE COURT: I don't know because he's already -- well,
21 anyway.

22 MR. WATKINS: Your Honor, I just want to correct one
23 thing. It is absolutely in his report. He does adopt the
24 distances. It's in there.

25 MR. CHAKRAVARTY: Here's the report. It very well may

1 be. It's 108 pages. If you want to find that.

2 THE COURT: The fact that it's in the report isn't a
3 basis for admitting it, necessarily. You need something more
4 than that. He testified on the subject and said that he
5 doesn't know.

6 MR. WATKINS: And so I can refresh his recollection.

7 THE COURT: You could try to refresh his recollection,
8 but that's not what you started to do. If you want to put the
9 report in front of him and see if that refreshes his
10 recollection --

11 MR. MELLIN: But, your Honor, the problem with this is
12 there's no good-faith basis for what -- they're trying to argue
13 that Tamerlan had both receivers -- or both transmitters, and
14 that is the only reason they're raising this issue. They don't
15 have a good-faith basis and they can't argue that.

16 MR. WEINREB: And this will just mislead and confuse
17 the jury and it should be excluded under 403 grounds. It is a
18 critical issue in the case. The defense knows it's not true.
19 They have no good-faith basis for suggesting it. Introducing
20 it will mislead and confuse the issues and, therefore, it
21 should --

22 MS. CONRAD: Judge --

23 MR. WEINREB: -- be excluded on 403 grounds.

24 MS. CONRAD: -- if two prosecutors can speak, can two
25 defense attorneys speak?

1 THE COURT: Go ahead.

2 MS. CONRAD: Thank you. First of all, the government
3 -- and the Court has allowed the government to introduce in
4 terms of whether it's his finding or not his finding, and
5 experts rely on others' testing. And they've been allowed to
6 introduce what he's learned from others, so it seems to me that
7 that's fair ground.

8 Second of all, it's either impeachment or refresh your
9 recollection.

10 Third of all, it seems to me whether or not we can
11 address an issue that was specifically addressed on direct
12 examination, which is the range of these -- it seems to me
13 that's a no-brainer. We can. And what we're going to argue
14 from it or not argue from it is for another day. I don't think
15 the government can just put us off from addressing something
16 that's relevant.

17 THE COURT: No, I think it's a fair Rule 403 question,
18 but I don't know the answer. So give me something more about
19 why there's no good-faith basis. I mean, somebody knows
20 something to the opposite?

21 MR. WEINREB: Yes; the defendant.

22 MS. CONRAD: That's ridiculous. I mean, to say the
23 defense can --

24 THE COURT: Keep your voice down.

25 MS. CONRAD: To say that -- I don't think we're there

1 yet, first of all. But second of all, to say that the defense
2 can't argue something that -- to which there exists -- as to
3 which there is contrary evidence is ridiculous because, first
4 of all, that's like saying that in an identification case if
5 your client told you he was guilty, you can't argue mistaken
6 identification. That's Defense 101. This also goes to the
7 issue that the government claims that was Jahar's apartment.

8 THE COURT: Okay. I will exclude it on the 403
9 grounds.

10 MS. CONRAD: May I just have a clarification? 403 --

11 THE COURT: For the reasons argued by Mr. Weinreb.

12 MS. CONRAD: I don't understand.

13 (In open court:)

14 BY MR. WATKINS:

15 Q. I'm showing you what's been identified as Exhibit 1160-02.
16 That is the receipt Mr. Chakravarty showed you for an order.
17 Do you recall that?

18 A. Correct.

19 Q. What is the date on that particular order? Oh, I'm sorry.
20 This is not -- this is already in evidence? There. What is
21 the date on that receipt?

22 A. February 8th of 2013.

23 Q. And whose name is on the receipt for that R/C car that you
24 have the exemplars from?

25 A. Tamerlan Tsarnaev.

1 Q. Showing you 1431 --

2 THE COURT: These are all in, right?

3 MR. WATKINS: Yes.

4 BY MR. WATKINS:

5 Q. -- which Mr. Chakravarty showed you on direct. Let me see
6 if I can find the date on this one. Can you -- what is the
7 date on that purchase?

8 A. It's 4/8/13.

9 Q. And that is seven days before the Boston Marathon bombing?

10 A. April 8th.

11 Q. And these are for parts that were related to the second
12 Boston Marathon bombing, Scene 2?

13 A. This was the Spektrum products, I believe.

14 Q. And I think you testified the Spektrum was related to
15 Scene B, the second Boston Marathon bombing?

16 A. That's correct.

17 Q. Mr. Chakravarty showed you *Inspire* magazine and the alarm
18 clock pages from that. Do you recall that?

19 A. Yes.

20 Q. And there's no mention in *Inspire* magazine about
21 radio-controlled cars as a fusing system. Is that right?

22 A. The portion I read at, no.

23 Q. And what I think you've told us is that this is something
24 that can be easily found out on the Internet by searches?

25 A. Correct.

1 Q. Were you aware that Tamerlan Tsarnaev searched the
2 Internet for radio-controlled cars in the months leading up to
3 the Boston Marathon bombing?

4 MR. CHAKRAVARTY: Objection, your Honor.

5 THE COURT: Sustained. Sustained.

6 And I remind the jury that unanswered questions
7 produce no evidence.

8 MR. WATKINS: That's all I have, your Honor.

9 MR. CHAKRAVARTY: Nothing further.

10 THE COURT: Agent, thank you. You may step down.

11 (The witness is excused.)
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C E R T I F I C A T E

We, Marcia G. Patrisso, RMR, CRR, and Cheryl Dahlstrom, RMR, CRR, Official Reporters of the United States District Court, do hereby certify that the foregoing transcript constitutes, to the best of our skill and ability, a true and accurate transcription of our stenotype notes taken in the matter of Criminal Action No. 13-10200-GAO, United States of America v. Dzhokhar A. Tsarnaev.

/s/ Marcia G. Patrisso
MARCIA G. PATRISSE, RMR, CRR
Official Court Reporter

/s/ Cheryl Dahlstrom
CHERYL DAHLSTROM, RMR, CRR
Official Court Reporter

Date: 4/28/15