

1 that true?

2 A. I'm confused with the question.

3 Q. You said you were surprised when the gun shot went  
4 off, correct?

5 A. Yes, sir.

6 Q. And the reason why you were surprised is because you  
7 believed in your mind that to solve this problem of  
8 handcuffing Mr. Grant, that that problem would be solved  
9 once Mr. Reyes got his leg out from underneath Mr. Grant?

10 MR. RAINS: That misstates his testimony and that  
11 assumes facts not in evidence.

12 THE COURT: Sustained.

13 BY MR. STEIN: Q. Isn't it true, sir, that on the  
14 morning of January 1st, 2009 you posed more of a threat to  
15 Oscar Grant than he ever posed to you?

16 MR. RAINS: Objection, relevance.

17 THE COURT: Sustained, and it's argumentative.

18 BY MR. STEIN: Q. When you look back now with the  
19 way you handled this situation, anything you would have  
20 changed?

21 A. No, sir.

22 MR. STEIN: That's all I have.

23 THE COURT: All right.

24 Mr. Rains, anything further?

25 MR. RAINS: Briefly.

26 **REDIRECT EXAMINATION BY MR. RAINS**

27 Q. Officer Pirone, you were asked questions about the  
28 various interviews and the statements you made during the

1 various interviews, and if I can refer you to the TX No.  
2 1 -- is that still up there?

3 A. Yes, sir.

4 Q. And so this was the very first interview you gave,  
5 correct?

6 A. Yes, sir.

7 Q. And at the point in time you gave this, this was  
8 some kind of an investigation being conducted into the  
9 circumstances of what happened that night, right?

10 A. Yes, sir.

11 Q. Do you have any reason to believe that Mr. Mehserle  
12 would be charged with anything criminally?

13 A. No, sir.

14 Q. Did you have any reason to know what would happen to  
15 him or to you as a result of what occurred that night?

16 A. No, sir.

17 Q. And so I direct your attention to Page 13 of your  
18 very first interview in this matter, very first one you gave  
19 where you say starting at Line 2322, "And at that time, I  
20 heard Officer Mehserle telling him, 'Hey, put your hands  
21 behind your back. Stop resisting. Stop resisting and put  
22 your hands behind your back.' And um, and then he -- he  
23 said, 'I'm going to tase him. I'm going to tase him. And  
24 uh, I can't get his arms. He won't give me his arms.' His  
25 hands are going for his waistband. Uh, and then he -- he  
26 popped up, and said, 'Tony, Tony, get away. Back up, back  
27 up.' At which time, I jumped up and that's when I heard the  
28 bang." Did I read that accurately?

1 A. Yes, sir.

2 Q. So, does that comport with your recollection of what  
3 happened that morning?

4 A. Yes, sir.

5 Q. And so you said that after he said he was going to  
6 tase him, "I'm going to tase him. His hands are going for  
7 his waistband, and he popped up," is that what you remember  
8 him doing?

9 A. Yes, sir.

10 Q. He stood up?

11 THE COURT: Mr. Rains, hold on a minute. Go ahead.

12 BY MR. RAINS: Q. He popped up. So you saw  
13 Mehserle get up from the ground?

14 A. Yes, and I found it strange.

15 Q. Why was it strange?

16 A. Well, if we were wrestling for hands and I just  
17 remember seeing him disappear from my peripheral vision.

18 Q. Hypothetically, if Mehserle intended to shoot him,  
19 he could have shot him right then, right?

20 A. Yes, sir.

21 Q. He didn't have to get up, did he?

22 A. No, sir.

23 Q. But he got up, right?

24 A. Yes, sir.

25 Q. And when you saw him next and you heard the bang go,  
26 Mehserle was standing up?

27 MR. STEIN: Leading.

28 THE COURT: Overruled. Go ahead.

1 THE WITNESS: Yes, sir.

2 BY MR. RAINS: Q. And he had his gun pointed  
3 downward at Mr. Grant's back?

4 A. Yes, sir.

5 Q. When you were taught to use the Taser, were you  
6 given any instruction on what I'll call creating distance  
7 between you and the individual you are going to tase?

8 A. Yes, sir.

9 MR. STEIN: Beyond the scope.

10 THE COURT: It is. It's stricken.

11 BY MR. RAINS: Q. So when you heard Mehserle  
12 yelling those words that we've just read, have you said in  
13 other interviews you heard fear in his voice?

14 A. Yes, sir.

15 Q. You had worked with him on ten occasions, I think  
16 you said?

17 A. Yes, sir.

18 Q. You had talked to him?

19 A. Yes, sir.

20 Q. When he was screaming what he was screaming, you  
21 heard fear?

22 A. Yes, sir.

23 Q. You testified yesterday that your belief was that  
24 Mr. Grant maybe had his hands in his waistband because he  
25 might be trying to get a weapon?

26 A. Yes, sir.

27 Q. That was a possibility?

28 A. Yes, sir.

- 1 Q. But you said yesterday you never saw a weapon?
- 2 A. Yes, sir.
- 3 Q. Did you ever see a weapon?
- 4 A. No, sir.
- 5 Q. Did Mehserle ever tell you he had a weapon?
- 6 A. No, sir.
- 7 Q. He told you "I thought he was going for a weapon."
- 8 A. Yes, he did, sir.
- 9 Q. What does that mean to you?
- 10 A. He said later on he came up to me and said, "I
- 11 thought he was going for a gun."
- 12 Q. He didn't say he saw a gun?
- 13 A. No, sir.
- 14 Q. You never saw a gun?
- 15 A. No, sir.
- 16 Q. You never pulled your gun?
- 17 A. No, sir.
- 18 Q. In that situation where the suspect is resisting,
- 19 has his hands underneath him, you don't see a gun, would
- 20 that be an appropriate time for you to pull your gun and use
- 21 your gun on that suspect?
- 22 A. No, sir.
- 23 MR. STEIN: It calls for speculation.
- 24 MR. RAINS: This is a trained officer.
- 25 THE COURT: Sustained. It does, so ask another
- 26 question.
- 27 BY MR. RAINS: Q. Given the level of resistance
- 28 that Mr. Grant was offering at the time that you heard the

1 round go off, would it have been appropriate for you to use  
2 a Taser on him?

3 MR. STEIN: Objection, relevance; lacks foundation.

4 THE COURT: It does. All right. Sustained.

5 MR. RAINS: We're talking about the force that was  
6 used and the level of resistance.

7 THE COURT: I've seen the force. We know what force  
8 is used. We've seen the level of resistance on the video.

9 MR. RAINS: I'm asking about whether the use of a  
10 Taser would have been appropriate given the level of  
11 resistance he saw by Mr. Grant.

12 THE COURT: So it's sustained. I sustained the  
13 objection. Next question.

14 BY MR. RAINS: Q. You carried a Taser that night?

15 A. Yes, sir.

16 Q. How long had you been carrying a Taser?

17 MR. STEIN: Objection, relevance.

18 THE COURT: It's been asked and answered. He said  
19 about a month.

20 Is that correct?

21 THE WITNESS: Approximately two weeks, sir.

22 THE COURT: Okay. So two weeks. Next question.

23 BY MR. RAINS: Q. And did that Taser have a  
24 department issued holster to it?

25 A. Yes, sir.

26 Q. And there is a certain way of removing the Taser  
27 from the holster, correct?

28 A. Yes, sir.

1 Q. And it's a different movement than the way you would  
2 remove from the firearm from its holster?

3 A. Yes, sir.

4 Q. And to get that Taser out of the holster, correct me  
5 if I'm wrong, Officer, but don't you -- and I'm using my  
6 right hand here -- you have to push your thumb inward to  
7 release a snap, correct?

8 A. Correct.

9 THE COURT: Keep that thought, Mr. Rains. I've got  
10 to go take a verdict. About ten minutes, okay.

11 (Recess taken)

12 THE COURT: All right. Mr. Rains?

13 MR. RAINS: Thank you.

14 Q. Officer Pirone, when we took a recess, I had asked  
15 you about your familiarity with the Taser that was carried  
16 by Officer Mehserle and released, and I have here a Taser.  
17 Do you recognize this to be a Taser, an X26?

18 A. Yes, sir.

19 MR. RAINS: And for the Court, I'll represent that  
20 this is the Taser carried by Mr. Mehserle on the night of  
21 the event. The people have brought it up at my request.

22 THE COURT: All right.

23 BY MR. RAINS: Q. And you had mentioned that the  
24 movement to release that Taser is a thumb movement; is that  
25 correct?

26 A. Yes, sir.

27 Q. And is there a snap right here on the left side of  
28 that Taser?

1 A. Yes, sir.

2 Q. And so for one to release that Taser, one would have  
3 to push that snap as I'm doing with my thumb here, correct?

4 A. Yes, sir.

5 Q. Which is an outward push with the thumb?

6 A. Yes, sir.

7 Q. To release the Taser. And then there's one more  
8 movement to get that Taser out of the holster, correct?

9 A. Yes, sir.

10 THE CLERK: For the record, Your Honor, the Taser  
11 will be marked People's Exhibit --

12 THE COURT: No, that's defense exhibit.

13 THE CLERK: I'm sorry. Defense Exhibit X.

14 (Defendant's Exhibit X marked for identification)

15 THE COURT: All right.

16 BY MR. RAINS: Q. And from your own knowledge, you  
17 say in your case, your thumb movements to draw your weapon  
18 are different than how you draw the Taser?

19 A. Yes, sir.

20 Q. You've seen some videos of this incident, correct?

21 A. Yes, sir.

22 Q. Seen any videos of Mehserle drawing his weapon?

23 A. No, sir.

24 MR. RAINS: Showing you what's been marked as  
25 Defense Exhibit R putting it up on the Elmo, and I'm going  
26 to try to move it so we can see the first image that's up at  
27 the top of that photo there.

28 And this Exhibit R, Your Honor, is from the Vargas

1 video, RFN, that's Relative Frame Number 21,601?

2 THE COURT: Okay.

3 BY MR. RAINS: Q. Officer Pirone, do you see in  
4 that red circle a set of hands gripping the butt of a gun?

5 A. Yes, sir.

6 Q. You see the thumb up in the same motion that you  
7 described that one would have to draw a Taser?

8 A. Yes, sir.

9 Q. And then showing you the lower portion of that same  
10 exhibit, Vargas Relative Frame Number 21,620, do you see a  
11 hand gripping the butt of a gun there in that circle?

12 A. Yes, sir.

13 Q. Do you see the holster of that weapon protruding  
14 outward from the gun belt?

15 A. Yes, sir.

16 Q. Does that have any significance to you looking at  
17 that?

18 MR. STEIN: Objection, relevance.

19 THE COURT: Sustained.

20 BY MR. RAINS: Q. Do you have any idea how long it  
21 took Officer Mehserle to get his gun out of his holster?

22 MR. STEIN: Objection, relevance; lacks foundation.

23 THE COURT: Sustained.

24 BY MR. RAINS: Q. The DA has made an issue out of  
25 force meeting force, you know, you meet lethal force with  
26 lethal force. Do you remember that part of that  
27 examination?

28 A. Yes, sir.

1 Q. If you think a suspect may be going for a gun, do  
2 you have to meet that force with lethal force?

3 A. No, sir.

4 Q. It would be appropriate to meet that force with a  
5 Taser?

6 A. Every situation is going to be different, sir, yes.

7 Q. Last, but not least, you've been questioned  
8 extensively yesterday and even today about decisions you  
9 made out on that platform that morning, right?

10 A. Yes, sir.

11 Q. Now decisions to pat-search or not pat-search,  
12 right?

13 A. Yes, sir.

14 Q. Decisions to either arrest or not arrest?

15 A. Yes, sir.

16 Q. Decisions about whether you thought somebody might  
17 use a weapon on you, correct?

18 A. Yes, sir.

19 Q. First of all, in all your years at BART that you've  
20 been there, have you ever dealt with a situation quite like  
21 this one?

22 A. No, sir.

23 Q. And when that event happened, did you think for a  
24 minute that every decision you made, everything you decided  
25 to do would be subjected to the sort of examination you've  
26 suffered here?

27 A. No, sir.

28 Q. You as a police officer had to make decisions based

1 on the situation?

2 A. Yes, sir.

3 Q. And given the situation that presented itself to  
4 you, you realize that maybe some of the decisions you made,  
5 for instance about pat-searching or getting guns off people,  
6 maybe it had turned out to be wrong, right?

7 MR. STEIN: Objection, that misstates his testimony  
8 and it's leading.

9 THE COURT: Sustained.

10 BY MR. RAINS: Q. Well, you don't have a crystal  
11 ball as a cop, do you?

12 A. No, sir.

13 Q. As a cop, did you realize that maybe if you decided  
14 not to pat-search someone, it could have produced a weapon?

15 A. Yes, sir.

16 MR. STEIN: Objection, move to strike; calls for  
17 speculation.

18 MR. RAINS: Well, that was the --

19 THE COURT: Hold on. You don't have to talk to him.  
20 You talk to me.

21 Overruled. He can say it. I've heard it.

22 Next question.

23 BY MR. RAINS: Q. Under the circumstances out  
24 there, did you make decisions that you thought were the  
25 safest decisions for you and your fellow officers?

26 A. Yes, sir.

27 Q. And did I hear your testimony correctly that if  
28 Mr. Grant and everybody else would have gone along with the

1 program that night, you wouldn't have run him for warrants?

2 A. That's correct, sir.

3 Q. You wouldn't have even taken their names down?

4 A. That's correct, sir.

5 Q. You would have let them go?

6 A. Yes, sir.

7 MR. RAINS: Thank you.

8 THE COURT: All right. Mr. Stein?

9 MR. STEIN: Nothing further.

10 THE COURT: All right. Thank you, Officer Pirone.

11 Mr. Stein, you want to get these transcripts up  
12 here.

13 Mr. Rains, your next witness?

14 MR. RAINS: Yes. The defense is calling Michael  
15 Schott who will be down momentarily. And may I indicate to  
16 the Court, he's got to warm up his projector, and it will  
17 take a few minutes.

18 THE COURT: All right. Let me know when he's warmed  
19 up and ready to go.

20 MR. RAINS: It should just be a couple of minutes.

21 (Recess taken)

22 THE COURT: All right. Mr. Rains, your next  
23 witness?

24 MR. RAINS: Thank you, Your Honor. My next witness  
25 is Mr. Michael Schott.

26 THE COURT: Okay.

27 **MICHAEL SCHOTT,**

28 having first been duly sworn, testifies as follows:

1 THE CLERK: Please state your full name and spell it  
2 for the record.

3 THE WITNESS: Michael Schott.

4 THE CLERK: Speak into the microphone please.

5 THE WITNESS: Michael Schott, S-C-H-O-T-T.

6 THE COURT: All right. Mr. Rains?

7 MR. RAINS: Thank you, Your Honor.

8 VOIR DIRE EXAMINATION BY MR. RAINS

9 Q. Mr. Schott, good morning.

10 A. Good morning.

11 Q. Mr. Schott, how are you employed?

12 A. I'm self-employed as a forensic image analyst.

13 Q. Do you hold a private investigator's license as  
14 well?

15 A. That's correct.

16 Q. How long have you held a private investigator's  
17 license?

18 A. Since my retirement from law enforcement in 1992.

19 Q. All right. And how long have you been performing  
20 forensic image analysis?

21 A. Since about the mid 1990s when I began applying  
22 mathematical models to image models.

23 Q. Can you please describe your educational background?

24 A. I graduated from the University of California at  
25 Berkeley with a bachelor's degree in mathematics.

26 Q. And do you have any other formal education beyond  
27 that?

28 A. I also completed a one-year paralegal studies

1 certificate program at the University of San Francisco.

2 Q. Can you please briefly describe your employment  
3 history?

4 A. I began work for the Contra Costa County Sheriff's  
5 Department in 1975. Until 1979, I worked assignments in  
6 both detention and patrol divisions. From 1979 to 1984, I  
7 was assigned to the detectives division, and the crime  
8 analysis unit. And in 1984, I was promoted to sergeant.  
9 And until my injury retirement in 1992, I was assigned to  
10 both the patrol and the investigations division.

11 Q. During the period of time you were at the Contra  
12 Costa Sheriff's Department, did your work include  
13 investigation of crimes?

14 A. Yes, very much.

15 Q. How many years were you assigned to do criminal  
16 investigations?

17 A. Well, the nature of the work, except for detention  
18 division, was all criminal investigations. So of my 17  
19 years, 14 years was criminal investigation.

20 Q. And did you ever have specialized assignments to  
21 detectives?

22 A. Yes.

23 Q. Did you investigate homicides?

24 A. I had some responsibilities in homicide scenes, and  
25 I was sent a certificate of training as a homicide  
26 investigator.

27 Q. Did you photograph crime scenes as part of your law  
28 enforcement duties?

1 A. Yes.

2 Q. Do you have any other specialized computer training  
3 or experience?

4 A. Yes. During my years at Cal, I also studied FORTRAN  
5 programming language. In the crime analysis unit, I was  
6 sent to IBM Systems training in San Francisco. I programmed  
7 in the COBOL language, and I was also trained in crime  
8 analysis by the state Department of Justice.

9 Q. Do you hold any professional certifications?

10 A. I have certificates from the California Commission  
11 on Peace Officer Standards and Training, also known as POST;  
12 I hold the basic immediate, advanced and supervisory  
13 certificate.

14 Q. Mr. Schott, we marked your CV and for the Court, his  
15 CV is marked as Exhibit H.

16 Mr. Schott, there are some professional memberships  
17 indicated on your CV. I wanted to ask you about your  
18 membership in the International Association for  
19 Identification.

20 A. Yes.

21 Q. What is that organization?

22 A. The IAI is the oldest existing association of  
23 forensic professionals. They've been around for over a  
24 hundred years, and virtually every American law enforcement  
25 criminalist is a member.

26 Q. And can anyone join that organization?

27 A. No. It requires the recommendation of a standing  
28 member as well as some requirements as to education and

1 experience.

2 Q. How long have you been a member of AIA?

3 A. I believe I joined in 2005.

4 Q. Now during the testimony of Ms. Long, I think it was  
5 from the DA's office, the acronym SWGIT came up. Are you  
6 familiar with that?

7 A. Yes.

8 Q. What is SWGIT?

9 A. That's a committee of the AIA, and it stands for  
10 Scientific Working Group of Imaging Technology.

11 Q. And has that group put out a publication on best  
12 practices for forensic video analysis?

13 A. That's correct. Video and imaging in general, and  
14 they regularly update that information.

15 Q. Have you read it?

16 A. Yes.

17 Q. Are you familiar with it?

18 A. I am.

19 Q. And do you work consistent with the guidelines in  
20 that document?

21 A. To the extent that I'm not the custodian of  
22 evidence, they also mandate specific requirements for the  
23 custodian of the evidence which would normally fall on law  
24 enforcement. But in terms of the accepted practices and the  
25 processes of the evidence yes, I follow their guidelines.

26 Q. Can you tell us very briefly, what is forensic image  
27 analysis?

28 A. Quite simply put, it's the application of subject

1 matter expertise and image science to interpret the content  
2 of an image or sometimes the image itself in legal matters.

3 Q. All right. How does that relate to something called  
4 a forensic video analysis?

5 A. Video analysis is a subset of image analysis.

6 Q. And video analysis is really what's involved in this  
7 case that you are here to testify about; is that correct?

8 A. That's correct.

9 Q. Now, have you previously testified as an expert  
10 witness with respect to investigation of the crime scenes?

11 A. Yes. During my law enforcement career, I testified  
12 as an expert well over 50 times in Contra Costa and the  
13 surrounding Bay Area counties.

14 Q. And what about a post-law enforcement expert witness  
15 testimony? First of all, have you qualified as an expert in  
16 forensic image analysis post-law enforcement?

17 A. Yes, I have.

18 Q. In what courts, if you recall?

19 A. I would have to refer to my CV, but it's about a  
20 half a dozen California counties as well as U.S. District  
21 Court.

22 Q. And how long have you been doing forensic image  
23 analysis work?

24 A. As I said, I took an interest in the mid 1990s.

25 Q. Have you completed any specialized training  
26 pertaining to forensic image analysis?

27 A. Most recently I attended two workshops put on by the  
28 F.B.I.'s forensic audio-video and image analysis unit in

1 both basic and advanced reverse projection, photo telemetry.

2 Q. Did the current classes that you've describe cover  
3 techniques used to either improve or enhance available  
4 visual information contained in digital images?

5 A. Yes, very much so.

6 MR. RAINS: Your Honor, at this point in time, I'd  
7 ask that Mr. Shot's testimony be received as an expert in  
8 the field of forensic image analysis.

9 THE COURT: Mr. Stein, would you like to voir dire  
10 the witness?

11 MR. STEIN: No. For the purposes of preliminary  
12 hearing, I'll stipulate.

13 THE COURT: All right. He'll be deemed an expert in  
14 the area requested.

15 MR. RAINS: Thank you, Your Honor.

16 **DIRECT EXAMINATION BY MR. RAINS**

17 Q. Mr. Schott, let me set the stage here preliminarily.  
18 Are you familiar with an age-old saying that says, "The  
19 thing speaks for itself"?

20 A. Yes, sir.

21 Q. Is that necessarily true when one looks at video  
22 images?

23 MR. STEIN: Objection, irrelevant.

24 THE COURT: Sustained.

25 BY MR. RAINS: Q. If one looks at a video image on  
26 the screen, does one necessarily see an accurate picture  
27 from that video image of, for instance, spatial distances  
28 between people?

1 MR. STEIN: Objection, irrelevant.

2 THE COURT: Why don't you explain the relevance.

3 And the question is spatial distance, what do you mean by  
4 that? To the extent that you see the video, are you asking  
5 distance from an arm or a wall; you don't see it on the  
6 video, you have to decide what the length is; someone is  
7 going to tell you that? Why don't you explain.

8 MR. RAINS: Your Honor, let me indicate to the Court  
9 that Mr. Schott is prepared to put up a description, and in  
10 fact an exhibit, to show in this case the fact that video  
11 images can be misleading in terms of what they show in terms  
12 of distances between people, and that's from video taken in  
13 this case. This is simply an illustrative thing so that we  
14 can examine the video of this case, understanding full well  
15 what we're looking at, that's all it is.

16 THE COURT: I'm the trier of fact. I can see what  
17 I'm looking at. To the extent that you think it will  
18 improve on what the Court is viewing, I'll allow it,  
19 Mr. Stein, subject to a motion to strike, okay. All right.

20 BY MR. RAINS: Q. Mr. Schott, did you prepare an  
21 exhibit from images in this case in which we might see an  
22 example of distortion of distance between people if we look  
23 at images

24 A. Yes.

25 Q. And can you put that up right now from your  
26 projector?

27 THE COURT: Let me ask you this, you mean distortion  
28 as it relates to him viewing the video?

1 MR. RAINS: No.

2 THE COURT: Good. I know Mr. Stein will  
3 cross-examine, and you'll explain it to me, Mr. Rains.

4 MR. RAINS: I hope Mr. Schott, will explain it.

5 THE COURT: Sure. Someone will. Good enough. We  
6 need to hit that light.

7 MR. RAINS: Would it be possible if we could.

8 THE COURT: If you would hit that light, Deputy,  
9 please. Thank you.

10 BY MR. RAINS: Q. Now, Mr. Schott, up on the screen  
11 here we see an image in the lower, left-hand corner, and it  
12 says "Vargas"; is that correct

13 A. Correct.

14 Q. Now we heard the testimony about a video taken by  
15 Ms. Vargas. Is this from her video?

16 A. Yes, it's from Vargas, Part 2.

17 Q. All right. Why are you showing that image?

18 A. Well, if we had only this camera rolling, in  
19 examining this video, I'm pointing now at Nigel Bryson and  
20 we see behind him an individual I've identified as Carlos  
21 Reyes --

22 Q. That's the individual with the cap on, correct?

23 A. Correct. If this were the only video, I might  
24 conclude that they were seated relatively close together,  
25 maybe shoulder to shoulder. Also looking at Officer  
26 Woffinden and the back of Officer Guerra, it would appear to  
27 me that it might be close enough where Woffinden can turn  
28 around and touch Guerra's back. That's what I get from

1 looking at this image.

2 Q. Now, given the fact that we had multiple videos in  
3 this case, are there other videos in existence that give us  
4 a more accurate indication of the spatial distances between  
5 these individuals?

6 A. Yes. When we synchronize the videos so we can look  
7 at the same event at the same time from different angles, we  
8 can get further information.

9 Q. And have you done that?

10 A. Yes, sir.

11 Q. Would you put up other images that were taken at  
12 this precise moment that we see the Vargas video?

13 A. Okay. Now, we also have this same moment in time  
14 with now in the upper, right-hand corner the Cross video and  
15 I'm going to point out the same two individuals. This is  
16 Nigel Bryson here, and this is Carlos Reyes here, and they  
17 appear to be about 9 feet apart, rather than anywhere near  
18 one another.

19 Q. Mr. Schott, for the record, you've been out to the  
20 Fruitvale BART station?

21 A. Yes, sir.

22 Q. You've taken measurements?

23 A. I have.

24 Q. And from the measurements you've taken, you believe  
25 that in truth that Mr. Nigel Bryson and Mr. Reyes were  
26 seated about 9 feet from one another in that Cross image?

27 A. That's correct.

28 MR. STEIN: Objection, Your Honor, that lacks

1 foundation, because he did not take a measurement. Well, it  
2 lacks foundation.

3 THE COURT: In what respect?

4 MR. STEIN: In the respect that he was not present  
5 when Nigel Bryson was seated at one spot and someone else  
6 was seated at another, so unless this is -- I mean, we can  
7 all see the distance between the two looking at the video.  
8 In terms of measurements, I think that's getting to a point  
9 where there's a lack of foundation.

10 THE COURT: It's just a guesstimation again, because  
11 he's not there.

12 MR. STEIN: As long as it's being accepted with  
13 that.

14 THE COURT: I understand. He's not there. Go  
15 ahead. To that extent it's just a guesstimation when he  
16 went out later and tried the imaging, and made a measurement  
17 and he said this is what it appears to be.

18 All right. Next question.

19 BY MR. RAINS: Q. All right. And in the Cross  
20 video, Mr. Schott, unlike in the Vargas video, we see  
21 Officer Guerra in the Cross video, but we don't see  
22 Woffinden, do we?

23 A. Correct.

24 Q. Do we see him in any other videos that were  
25 synchronized to show this precise frame?

26 A. When we add now the BART platform video, as well as  
27 in the lower right, the Liu video, I'll indicate with the  
28 arrow, that Officer Woffinden is some distance away from

1 Officer Guerra. He's not as near as it would have appeared  
2 just from the Vargas video.

3 Q. And that's what we talked about when we talk about  
4 the fact that there may be spatial distortions in video, if  
5 we don't take a look at them from various angles?

6 A. In any two-dimensional image, you are getting a  
7 compromised copy of real three-dimensional space, and it's  
8 important to understand the limitations of any two  
9 dimensional image, this is one of them.

10 Q. In connection with the work you've done and the  
11 video in this case, have you dealt with something called  
12 "low resolution"?

13 A. Yes.

14 Q. What does that mean?

15 A. Well, if we take a look at the Liu video, that's one  
16 of the lowest resolution images we have. Simplest way to  
17 describe it is if you consider these like mosaic images and  
18 the tiles are called pixel elements. If you have more  
19 pictured elements, you can make a more detailed image. If  
20 you are have fewer pixels or tiles, you are not going to  
21 have edge definition and can't get as much detail, and that  
22 would be low resolution.

23 Q. And from the work that you've done from these  
24 videos, you were able to determine what the resolution rates  
25 were as to each camera that was used?

26 A. Yes.

27 Q. We'll come to that in a minute. Mr. Schott, let me  
28 ask you this, does the existence of multiple videos in this

1 case present a unique challenge in terms of video forensic  
2 analysis?

3 A. Well, yes, it does. You've got more cameras rolling  
4 than any other case in which I've been involved, and the  
5 only real way to try to assemble the information was to try  
6 to synchronize those cameras so we can look at something  
7 from different angles at the same time and build a three  
8 dimensional image.

9 Q. All right. So is that some of the work that you  
10 performed here?

11 A. Yes.

12 MR. RAINS: Your Honor, for the record, that image  
13 that's up on the screen right now is the subject of a still  
14 frame that I have marked as Defendant's -- this is  
15 Defendant's J.

16 THE COURT: All right.

17 BY MR. RAINS: Q. Now, Mr. Schott, in the course --  
18 well, let me ask you this, is it your testimony then that  
19 you got video in this case and that you were able to  
20 synchronize the video so that we're looking at essentially  
21 the identical activity from different angles shown by the  
22 different videos?

23 A. To within about 13/100 of a second, I was able to  
24 synchronize these videos.

25 Q. I'll ask you how you did that in a minute. But  
26 first of all, from looking at the video in this case from  
27 the work you did, were you able to give us an indication  
28 about where approximately the individuals were who were

1 filming the various events that we're discussing in this  
2 case?

3 A. Yes.

4 Q. And have you prepared an exhibit to show that?

5 A. I can certainly find it.

6 Q. All right. Now, you've put up on the screen a  
7 photograph, and this appears to be a photograph of the  
8 Fruitvale BART station; is that correct?

9 A. Correct.

10 Q. The platform?

11 A. Correct.

12 Q. Is this the platform where the events occurred that  
13 brings us here?

14 A. That is correct. The number stands 3 and 4 as  
15 marked would correspond to the approximate locations where  
16 Mr. Reyes and Nigel Bryson were seated.

17 Q. And did you make that determination by viewing the  
18 video?

19 A. Yes, by examining the bystander videos taken that  
20 night and going to the scene, I placed these number stands  
21 in the approximate locations.

22 Q. And this frame that you are showing us right now  
23 also shows the name "Carazo" at the left of the image,  
24 correct?

25 A. Yes.

26 Q. And that's one of the individuals who was filming  
27 that evening?

28 A. Yes, sir.

1 Q. And Cross, is that another individual who was  
2 filming some of these events?

3 A. Yes, sir, but you have to understand they were  
4 actually still within the car, so they wouldn't have been  
5 standing where I have those number stands. I couldn't get  
6 any volunteers to stand on the tracks to hold them, so we'll  
7 have to get that closer.

8 Q. So they were standing in the car whose door would  
9 lead to where the two stands are?

10 A. Correct.

11 Q. And then there's a name "Dewar" that appears in this  
12 image. And what is that?

13 A. That is the location that the video reveals that  
14 Mr. Dewar was standing at approximately six seconds before  
15 the shot was fired.

16 Q. Did Mr. Dewar move around at times?

17 A. Yes.

18 Q. So this image that we're looking at now shows where  
19 Mr. Dewar was about six seconds before the shots were fired,  
20 correct?

21 A. Yes.

22 Q. And you have another image that also shows another  
23 location of some other people who were photographing the  
24 events.

25 By the way, Your Honor, for the record, the image  
26 that we just looked at before this one is marked as a still  
27 frame as Defense Exhibit K.

28 THE COURT: All right.

1 BY MR. RAINS: Q. Mr. Schott, this is now marked as  
2 Defense Exhibit L, which you are showing us here, what does  
3 this photograph show?

4 A. This is looking southbound toward the scene of the  
5 struggle and the shooting. And it indicates also now where  
6 Mr. Liu would have been standing inside his train car or at  
7 the doorway, again, Carazo, Cross and Dewar, and there are  
8 number stands 6 and 7, labeled Vargas A and Vargas B. When  
9 Karina Vargas first started filming, she was standing at  
10 Number Stand 6, having just stepped out of the train. And  
11 at about the time of the shooting, she was standing in the  
12 vicinity of Number 7.

13 Q. Do we see that, that is, her standing in the  
14 vicinity of Number 7 in other video that you looked at?

15 A. Yes. In the Liu video, I can see her standing  
16 there.

17 Q. Now, Mr. Schott, I know you were here when  
18 Ms. Vargas testified, correct?

19 A. Yes, sir.

20 Q. And she identified herself on direct examination as  
21 stepping out of the car at some point in time?

22 A. Yes, sir.

23 Q. And would that be in the approximate area where you  
24 put 6 or Vargas A?

25 A. That's correct.

26 Q. And as to Vargas B, did you hear her testimony that  
27 she got maybe within 7 to 10 feet of the events that she was  
28 filming?

1 A. Yes. I believe she said at the time of the  
2 shooting, she was 7 to 10 feet away.

3 Q. And does the video, in fact, disclose the fact that  
4 she moved 7 to 10 feet?

5 A. No, sir.

6 Q. What does the video show taken by Mr. Liu?

7 A. That she was in the vicinity of where I have Number  
8 Stand 7.

9 Q. And how far from the shooting event would that be  
10 approximately?

11 A. The Number Stand 5 that is marked "Pirone" -- and  
12 hopefully you can read Pirone's -- the difference between  
13 Number Stands 5 and 7, is 53 feet, 10 inches, understanding  
14 that she may have been moving a little bit around, and then  
15 Number 5 is the approximation. But the 53 feet, 10 inches  
16 is the distance that is between these two number stands.

17 Q. Did it appear to you that perhaps she had activated  
18 the zoom feature on her camera?

19 A. Well, the images corresponding to this time would  
20 make it appear that she's much closer, which would require  
21 zoom.

22 Q. All right. Now, Mr. Schott, you also in your work  
23 would have determined -- well, let's get into how you went  
24 about doing the synchronization that leads to your ability  
25 to look at these different events at the same time.

26 Can you briefly describe what you did to make the  
27 synchronized video that you are going to be testifying  
28 about?

1 A. I know we're on a time schedule. I'm going to keep  
2 this simple.

3 THE COURT: If you will, and I'll cut you off when  
4 it's appropriate.

5 THE WITNESS: The Vargas video was framed at 30  
6 frames per second; Liu was filming at 15 frames per second.  
7 And these are not play back rates, these are the actual  
8 rates which images are being recorded, and in some cases,  
9 they are play back. Both Carazo and Dewar had a recording  
10 frame rate in the vicinity of 8 frames per second. And  
11 Cross, the video that we got, even though my equipment  
12 indicated that it was a 25-frame per second recording, the  
13 actual number of images being recorded per second averaged  
14 17. So we have four, actually, different recording rates  
15 and I worked primarily to synchronize bystander videos. The  
16 BART platform video was only recording 4 images per second,  
17 and it's included in the synchronization, but the accuracy  
18 of that synchronization is within about a quarter of a  
19 second. But among the bystander videos, I was able to  
20 synchronize to within 13/100 of a second.

21 Q. And you prepared an exhibit that shows us how you go  
22 about synchronizing these videos, correct?

23 A. Yes.

24 Q. Can you put that up, please? From where I am, and  
25 Your Honor for the record, we have a still frame on this.  
26 It's Exhibit M.

27 But Mr. Schott, what are we looking at up here on  
28 the screen that is duplicative to Exhibit M?

1 A. This is to demonstrate the characteristics of the  
2 different videos I just described. These are not actual  
3 film strips from those videos. What is significant here is  
4 this covers an interval of one second, and if we look at the  
5 Vargas video, we see every image appears to be in color,  
6 indicating that 30 fresh images are recorded during one  
7 second. Now the BART platform at the top -- I'll point to  
8 it -- we see there are also black and white images. When  
9 these are set to play back at the standard NTSC 30 frames  
10 per second, that's accomplished without turning it into a  
11 fast-motion video by displaying the same image again and  
12 again until a fresh one is recorded. And for that reason,  
13 you can then keep time. It's like holding a note for extra  
14 beats so that realtime corresponds to what we have at 30  
15 frames per second.

16 Now, with the Vargas video, we see that every  $1/30$   
17 of a second is a fresh image. In Cross, the typical pattern  
18 would be sometimes it would hold one image for two,  
19 sometimes for one, and then it varies; it's not in uniform.

20 Liu, which was filmed at 15 frames per second, when  
21 it's played back at 30, every other frame is being held at  
22 one time.

23 And then with Carazo and Dewar, at approximately  
24 eight frames per second presents the greatest challenge to  
25 synchronization, because we have fewer images being  
26 recorded. And this blue line I depict here, if we should  
27 stop the synchronized images at that point, we should see  
28 that Vargas and Cross at this particular point are

1 synchronized exactly. Liu would be a 3/100 of a second off  
2 and Carazo about twice that amount. So sometimes they will  
3 all be very, very close to exact, and other times the  
4 bystander videos can vary by up to about 13/100 of a second.

5 Q. Now, in the work that you did in synchronizing these  
6 videos, did you also try to determine at what point in time  
7 the different camera operators would have activated their  
8 cameras to film events?

9 A. Yes, just because the confusion of the number of  
10 cameras that try to chart when they became involved and when  
11 they were active.

12 Q. And you have an exhibit that will give us a visual  
13 display of when certain cameras were activated in relation  
14 to the events that bring us here?

15 A. Yes, sir.

16 MR. RAINS: For the record, this is the same as a  
17 still frame that we've marked as Exhibit N as in Nora.

18 Q. What are we looking at here, Mike?

19 A. The time line at the bottom of the image begins at  
20 1:59:00, which is when the train on which Mr. Grant rode  
21 arrived at the Fruitvale station. And the time line  
22 continues to about sometime after 2:11:00 a.m. As the BART  
23 platform camera was continuously operational, the yellow bar  
24 at the top indicates the BART camera. Vargas, Part 2 began  
25 filming at about 2:08:05, and I've marked the relative frame  
26 number, and the same for the others. Liu filmed a few  
27 seconds later. He turned off his camera for a while, which  
28 is the dark area and then at about 2:10, he began filming

1 again. And similarly for Cross and Carazo and Dewar, we see  
2 when their cameras were recording the events according to  
3 the time line.

4 Q. Just for the record, you had mentioned Vargas, Part  
5 2. There was a Vargas Part 1?

6 A. Yes, sir.

7 Q. And you didn't include that here. Why didn't you?

8 A. Vargas Part 1, I can only generally determine when  
9 that took place to within an interval of a minute or so.  
10 And secondly, it showed the number of individuals seated,  
11 but no real interaction. And Vargas, Part 2 was the only  
12 continuous film clip that we have from Karina Vargas.

13 Q. Now, did you take any steps in doing the work that  
14 you had done in the image analysis to make sure that the  
15 video clips that you got, that you used in that analysis was  
16 the same video, the same quality video, anyway, that the  
17 People have relied on and played in this courtroom?

18 A. Yes.

19 Q. How did you do that?

20 A. The same way -- the videos arrived with  
21 documentation from the District Attorney's office specifying  
22 cache values for the various digital files, and I also  
23 cached them and confirmed that the values matched.

24 Q. With regard to frame rates and image resolution, are  
25 we talking -- you've already mentioned different frame  
26 rates, correct?

27 A. Correct.

28 Q. Was there different image resolution to each of

1 these videos?

2 A. Yes. Vargas and Cross were at 640 x 480, I believe.

3 Q. What does that mean in lay terms?

4 A. 640 pixels wide by 480 pixels tall.

5 Q. All right. And Carazo, do you remember?

6 A. Carazo and Liu were much smaller. They were 160  
7 x -- I believe it was 120 and 112 respectively. I can check  
8 my notes, but they were much smaller, much lower resolution  
9 images.

10 Q. All right. How do these videos play back in  
11 realtime if they are different recording rates?

12 A. Well, as I said, to set them each to play back at 30  
13 frames per second so that they are time correct, the player  
14 itself would pace the videos so that images that were  
15 acquired over the course of a minute will play back over the  
16 course of a minute.

17 Q. Now, did you actually apply any electronic image  
18 processing steps in order to enhance images at all?

19 A. Yes.

20 Q. What did you do?

21 A. It was pretty basic and it had to do primarily with  
22 lighting and contrast conditions, and I used tools that  
23 would enhance the available or bring out the available image  
24 detail that was contained in the original, but maybe not  
25 quite as visible.

26 Q. Did anything you do alter or change the content of  
27 any of these videos?

28 A. No, sir.

1 Q. You've prepared an exhibit to show us one of the  
2 changes, if you will, in what I'm going to call contrast  
3 that may have been made. Could you show us that image?  
4 It's pretty small up there on the board.

5 For the record, we've marked this exhibit as Exhibit  
6 O, the still frame of this.

7 What are we looking at, Mike?

8 A. This is from the Cross video numbered 2,532 and from  
9 that video, these are both framed 2,409. The upper image is  
10 unprocessed the way that it appeared when I first examined  
11 the video, and there's a lot of dark areas where it's  
12 difficult to see details. And I took steps to bring out  
13 that detail without bleaching out the image, so it's more  
14 than just brightness. But for example, it's difficult to  
15 even see Officer Pirone's boots in the upper image, whereas  
16 down here, we can see the tread pattern on the sole.

17 Q. I realize it's a small image that you are showing up  
18 on the screen, but if it's larger, you can see the tread  
19 pattern; is that correct?

20 THE COURT: I don't need to see that. I can see  
21 that the image has been processed. Let's move on to the  
22 next question.

23 BY MR. RAINS: Q. All right. Now, Mike, after you  
24 had gathered the videos from the District Attorney's office,  
25 and attempted to synchronize them, was there a way that you  
26 attempted to test whether in fact the videos were truly  
27 synchronized to one another for purposes of playing back the  
28 video?

1 A. The synchronization process to align them requires  
2 them to finding the same movement or motions in the  
3 different videos, and ensuring that those are occurring at  
4 about or as near as possible at the same time.

5 Q. And you have an exhibit prepared to show us how you  
6 have achieved the synchronization?

7 A. Yes, sir.

8 Q. Would you show that?

9 A. There are actually two. The simplest case begins  
10 with ensuring that cameras are seeing things occurring at  
11 the right time. For example, at the upper left on the BART  
12 platform video, you can see where I'm pointing. This is  
13 Karina Vargas, and these individuals just walked past her  
14 northbound on the platform. When we look at the lower left  
15 of the Vargas videos, we can in fact see the individual who  
16 is seen in the upper left, now in the lower left from the  
17 back as he's passing Karina Vargas. We can also see  
18 comparing Liu in the lower right where he appears to be  
19 involved in some interaction with Oscar Grant. It's been  
20 said that there was a scuffle there.

21 Q. You said Liu was involved?

22 A. I'm sorry, Liu's camera, that Officer Pirone is  
23 involved with Oscar Grant. And we see in Vargas that  
24 Officer Pirone appears to be grasping Oscar Grant's head  
25 with his right hand.

26 Q. And so those would all reflect that that occurred --  
27 using the BART platform camera as a timer, at 2:08:24; is  
28 that correct?

1 A. And some fraction, yes.

2 Q. Okay. And you got RFN 16,940, correct?

3 A. Yes.

4 Q. And that's the Relative Frame Number you've assigned  
5 starting with Frame 1 when the BART train first came in at  
6 1:59?

7 A. The RFN numbers begin at 1:59:00 when the BART train  
8 arrives and then accumulate at 30 per second, and so that  
9 means that at this point by 2:08:24, we now have 16,940  
10 frames.

11 Q. All right. Can you show us the other image you have  
12 showing the synchronization, which you've done?

13 A. Yes, sir. Once the synchronization is completed,  
14 then rather than looking for larger images simultaneously,  
15 now we look for detailed movements. And in Cross, Vargas  
16 and the Liu videos on this matrix, I circled in red Officer  
17 Pirone's right heel just coming up off of the platform, and  
18 the synchronization is good, because we can see that  
19 happening at that time in all three videos, and it's not  
20 visible in Carazo.

21 Q. All right. Thank you, Mike. Now, we have marked  
22 for your testimony today here, a document that's entitled  
23 Master Time Line of Chronological Video that has been marked  
24 as Exhibit I. Do you have that in front of you?

25 A. Yes, sir.

26 Q. Are you able to read it up there? It's relatively  
27 dark? Are you able to see it okay?

28 A. Not a problem.

1 Q. Okay. I just want to -- I'm going to be directing  
2 your attention to some of the events reflected here, not  
3 all, 'cause we're going to go through this. But can you  
4 bring up the start of those images, starting at 1:59?

5 A. Yes, sir.

6 Q. Now, that image that's up there shows that at  
7 1:59:00, and you have Relative Frame Number 1, correct?

8 A. Correct.

9 Q. Can you bring that forward say about 50 frames or so  
10 to show us what we're looking at here?

11 A. Well, actually, we've already gone 106 frames.

12 Q. We're going 30 frames a second?

13 A. Correct.

14 Q. So, bring the BART train up to stop.

15 Now, Mike, as I looked at that video, that BART  
16 train seems to kind of lunge and stop and go. Why is that?

17 A. Because this is only recording at four frames per  
18 second and even though it appears that you are seeing  
19 motion, when I advance these singly, I'm having to -- see  
20 the RFNs move and the train doesn't move? That's because  
21 the previous image is being held until the next image is  
22 recorded. And when that happens, you get the illusion -- it  
23 would appear that you are watching this train move right  
24 there. These are two separate images. The train is not  
25 moving; one of them, the position of the train has changed,  
26 but it gives the illusion -- that's what video is -- that  
27 you are seeing the train moving.

28 Q. The BART platform camera captures what appears to be

1 Officer Pirone at some point in time walking toward the  
2 front of the train; is that correct?

3 A. Yes.

4 Q. Do you have that reflected in Exhibit I?

5 A. Yes, sir.

6 Q. And would you bring us up then to RFN 9,350. You  
7 are just playing it fast forward?

8 A. It's playing at realtime, and we can see Officer  
9 Pirone approaching this group of people from the opposite  
10 direction.

11 Q. Is this now Pirone walking in our direction?

12 A. Yes. Now we're at 9,364, and this is the officer  
13 that I'm pointing at.

14 Q. Would you have him continue moving in the direction  
15 that he's moving in now, just keep going.

16 The BART platform camera appeared to have captured  
17 him walking toward what appeared to be the front of the  
18 train?

19 A. Yes, sir.

20 Q. Did the camera also capture what appears to be  
21 Officer Domenici running toward the front of the train?

22 A. Yes, sir.

23 Q. And can you please advance then to frame 12,660.  
24 And now you are running it at realtime again?

25 A. That's correct. 660 should be coming up very  
26 quickly.

27 Q. Mike, I think you already testified to this, but at  
28 this point in time, at 2:06:01, the time on the BART timer

1 up there, the other people who photographed some of these  
2 events were not yet photographing; is that true?

3 A. The earliest bystander camera doesn't come on until  
4 around 2:08.

5 Q. All right. Go ahead and keep running that.

6 THE COURT: Hold on. From this image here, this  
7 would be Officer Domenici running? You saw that?

8 THE WITNESS: Yes, sir.

9 THE COURT: And there's nobody on the platform as  
10 she's running towards the BART camera.

11 THE WITNESS: Well, the BART camera is facing north.  
12 It doesn't show --

13 THE COURT: To the extent that she's running away  
14 from the BART camera, but as she's running, there is no one  
15 coming at her, right?

16 THE WITNESS: The camera doesn't reveal what's  
17 toward the front of the train.

18 THE COURT: To the extent of what I seen.

19 THE WITNESS: I'm sorry. I wasn't being difficult.

20 THE COURT: Okay. Good. I'm sorry. Go ahead.  
21 Keep going.

22 BY MR. RAINS: Q. Mike, just so we're clear on  
23 this, as we're looking at this image that's up there, this  
24 car that is in the foreground that appears to be the back of  
25 a BART car there, yeah, you are pointing to the back of what  
26 I observed to be a BART car, are you able to determine from  
27 the work you've done what car in the train that was?

28 MR. STEIN: Objection, that calls for speculation.

1 THE COURT: To the extent he can establish, he's  
2 established that, I'll allow it, and how he established it.

3 THE WITNESS: When the train arrived until it  
4 stopped, I counted the cars. This is the second car, the  
5 rear area of the second car.

6 BY MR. RAINS: Q. So the BART camera that we're  
7 looking at there captures the rear of the second car, and  
8 then obviously the third car, and so on

9 A. Correct.

10 Q. Now, at some point in time, did the BART platform  
11 camera capture Officer Pirone walking in proximity to one of  
12 the cars?

13 A. That's correct.

14 Q. And can you please advance the video to Frame  
15 13,513?

16 A. We'll play realtime and it will get there rather  
17 quickly.

18 We're past it by a few, but that's where Officer  
19 Pirone enters facing northbound.

20 Q. This would be Pirone in the left side of this image?

21 A. At the lower left, correct.

22 Q. All right. And would you keep running that to see  
23 what the platform camera shows? All right. You can stop  
24 it.

25 The images that we've seen that just end on the  
26 platform camera at 2:06:49, Relative Frame Number 14,089,  
27 appear to show Officer Pirone pointing an object at windows  
28 of the BART car?

1 A. That's correct.

2 Q. With his right hand; is that correct?

3 A. Yes, sir.

4 Q. And then an individual stepped out of the car where  
5 he was standing near the door?

6 A. Yes.

7 Q. And he escorted another individual to the left of  
8 the images as you looked at it?

9 A. Yes.

10 Q. Mike, I'm going to ask you bring the video forward  
11 so that we can look at an interaction that occurs what  
12 appears to be between Pirone and Mr. Grant, and I'm going to  
13 ask you to bring --

14 THE COURT: Before he does that, I want to ask a  
15 question, so it's at Number 2 Car that you've counted when  
16 you saw them?

17 THE WITNESS: No, the individuals came out where  
18 this black area is here. This is now the Number 3 Car.  
19 This right here where I'm pointing right here, the dark  
20 area, separates the Number 2 and 3 cars.

21 THE COURT: And the camera is all the way at the end  
22 where the pink area is taking the shot?

23 THE WITNESS: No, sir. The camera that's taking  
24 this shot would be towards the front of the train looking  
25 towards the back. In fact, one of the exhibits that's been  
26 admitted where I set out the number stands, the BART camera  
27 appears there. You can see where it is.

28 THE COURT: So when that camera is taking that image

1 and it's looking all the way to the length of the cars --  
2 would that be right?

3 THE WITNESS: Yes, the background starts to become  
4 difficult to see, but it's looking towards the back of the  
5 train.

6 THE COURT: Okay. And you saw somebody, Officer  
7 Pirone, take someone off the train just a minute ago?

8 THE WITNESS: Yes.

9 THE COURT: And in looking at that image there, it  
10 hasn't moved much. All the way in the back, it looks like  
11 there's two people?

12 THE WITNESS: I can't tell you because on my screen  
13 here, the resolution, they start turning into blobs. It  
14 looks like a few people.

15 THE COURT: Not a hundred people, right?

16 THE WITNESS: Not in this image, sir.

17 THE COURT: All right.

18 BY MR. RAINS: Q. So Mike, I was going to ask you  
19 if we could bring the images forward to approximately  
20 platform camera time 2:08:20, Relative Frame Number 16,825?

21 A. Okay. The Vargas camera has just come on; Liu.

22 Q. So now we're picking up these cameras as they are  
23 activated by the people using them?

24 A. Correct. When the cameras become active, that  
25 quadrant of the image shows that those cameras are filming.

26 Q. Okay. In the lower left frame, the one you have  
27 labeled as "Vargas," what's that in the guy's right hand?

28 A. It's an older cell phone with a short stub antenna.

1 Q. Not a gun?

2 THE COURT: Counsel, I've already seen this, and I  
3 know what it is, because he went through it and we saw it in  
4 the video. Educate me and do what you said you guys would  
5 do. I understand.

6 BY MR. RAINS: Q. All right. 16,825, your master  
7 time line marked as Exhibit I, indicates that Grant's right  
8 hand and forearm appears to rise and strike Pirone's left  
9 torso.

10 A. That's correct.

11 Q. And then there is an indication in the frames that  
12 follow which appear to be primarily from the Liu video of  
13 Grant's knee rising towards Pirone, his right knee, then his  
14 left knee; is that correct?

15 A. Also correct.

16 Q. And can you show us those frames on the synchronized  
17 video? Where is the Liu video, first?

18 A. The Liu video is the in the lower right. And before  
19 I change the frame, I'm going to point here with an arrow.  
20 There is a flesh-colored region. It would be to Pirone's  
21 left waist area. Now I said it on this it appears, because  
22 this is one of the lowest resolution videos. We have to  
23 understand that the appearance is limited by the resolution.  
24 But now when we put this in motion and I want you to watch  
25 this area as Pirone moves forward, and at about the time  
26 that we lose sight of that object, we see that Pirone's  
27 torso may rise -- I'll say may, but let me back it up just a  
28 second. In looking at this, I would have to consider that

1 this may be a blow, but I can't say it with certainty --  
2 going forward again -- but it gives that appearance.

3 Q. Now, there's an indication in the Liu video that  
4 there also appears to be movement of Grant's knees; is that  
5 correct?

6 A. That's correct. If you can tell me the frame  
7 number, I can advance it.

8 Q. Yes. According to this, 16,908, Grant's right knee  
9 rises towards Pirone.

10 A. Okay. We're stopping at 16,902. I'm going to point  
11 out, we see the jeans here of Grant. This is Grant's right  
12 leg and left leg.

13 Q. Mike, since we're looking at the Liu video, do you  
14 have the capability of enlarging that?

15 A. Yes. We don't want to go too large, because with  
16 low resolution, larger loses quality. Okay. Here is  
17 Mr. Reyes standing here, and these two we can see, Grant's  
18 right leg and his left leg. Also, following the extension  
19 of the left leg, we can see Grant's left foot, his shoe  
20 here, between Pirone's legs. Now, this motion here, this is  
21 now the knee, Grant's right knee. Let me back this up a bit  
22 and go forward and you'll see that that has come up off the  
23 floor. Going back and forward, that would be the right knee  
24 coming up toward Pirone.

25 Q. All right. And then if we play forward according to  
26 your master time line, the left knee then comes up towards  
27 Pirone; is that correct?

28 A. That's correct. Watching the region here between

1 Pirone's legs, and there it comes.

2 Q. Would you play that back and forward again, please?

3 A. (Witness complying).

4 Q. All right. Thank you. Now according to your master  
5 time line again, Exhibit I, on the Vargas video at Frame  
6 Number 16,940, Pirone's right hand reaching for Grant's head  
7 as his left hand grabs Grant's right hand or forearm. Can  
8 you show us that?

9 A. Yes.

10 Q. On the Vargas video, 16,940 --

11 A. Do you need that enlarged?

12 Q. Yes. What are we looking at in the Vargas video?

13 A. Pirone's left hand is grasping Grant's right  
14 forearm; Pirone's right hand is open; we see fingers and  
15 thumb appears to be in direct proximity to Mr. Grant's head.

16 Q. And can you play that forward so we see what  
17 movement occurs by Pirone and by Mr. Grant?

18 A. Okay. Just here, we see Grant's arm, left arm out,  
19 in contact with Pirone's chest under the arm.

20 THE COURT: That's what you see, right?

21 THE WITNESS: Yes, sir. At 16,972, Mr. Grant's left  
22 elbow is here where I'm pointing, and the left hand is still  
23 in that region beneath Pirone's right arm. And I can see  
24 Pirone's hand and he's grasping Mr. Grant by the head and  
25 pulling it toward his own chest.

26 BY MR. RAINS: Q. All right. Now, I want you to  
27 stop it there for a minute, Mike, and I want to take a look  
28 at the Liu video of the same event that we just looked at on

1 Vargas. When we looked at what you've just described, that  
2 is Pirone's right hand reaching for Grant's head, can you  
3 get us to the point where you see the reach occur on Vargas?

4 A. Beginning right about here at 16,935.

5 Q. Show us that.

6 A. In the Vargas video, advancing it now, Pirone's  
7 reaching toward Mr. Grant's head.

8 Q. And you stopped it at what frame? 16,938?

9 A. Correct.

10 Q. Does he appear to have contact with Grant's head?

11 MR. STEIN: Objection, that calls for speculation,  
12 and his opinion is irrelevant.

13 THE COURT: Sustained.

14 BY MR. RAINS: Q. The same movements are reflected  
15 in the Liu video, correct?

16 A. Correct.

17 Q. From what you can determine from examination of the  
18 Vargas video that you've done, did Pirone ever use his fists  
19 to strike Mr. Grant?

20 MR. STEIN: Same objection.

21 THE COURT: Sustained. Officer Pirone has  
22 testified. I've heard him.

23 BY MR. RAINS: Q. This is rehabilitative since --

24 THE COURT: No, it's not. It's a guy looking at the  
25 video, telling the Court what he thinks he sees. He's  
26 already said that, so I appreciate what you are doing, and  
27 I'll give you leeway, but the objection is sustained. Let's  
28 move on.

1 BY MR. RAINS: Q. Looking at the same activity that  
2 we just looked at in Vargas on Liu in your synchronized  
3 video, can you show us that same activity?

4 A. Yes, I'll start the video forward. I've stopped at  
5 16,972.

6 Q. All right. From your knowledge of this case, had  
7 one of the TV stations looked at the Liu video?

8 A. Yes.

9 Q. And some analyst had described by looking at the Liu  
10 video what he said was a vicious unpremeditated assault by  
11 Pirone on Mr. Grant?

12 A. I believe it was a vicious, physical assault upon a  
13 citizen.

14 Q. First of all, in terms of resolution and clarity of  
15 what activity is occurring, what is likely to be more  
16 reliable as an indicator of what's occurring, Vargas or Liu?

17 MR. STEIN: Objection, calls for speculation.

18 THE COURT: Sustained. The video speaks for itself,  
19 not what the analysts or what Mr. Schott confirms. The  
20 video speaks for itself. Sustained.

21 BY MR. RAINS: Q. Now at some point in time,  
22 according to the video, Grant after this is occurring that  
23 you've just shown us on the video, Pirone releases,  
24 Mr. Grant steps back, and Mr. Grant sits down on the  
25 platform. Do you reflect that in Exhibit I?

26 A. Yes, sir.

27 Q. Could you show us starting at Relative Frame Number  
28 17,047 through 17,112?

1 A. Okay. We stopped at 17,047, and looking now  
2 directing your attention to both to Vargas primarily, the  
3 secondarily to Liu. By this time, I'm at 17,090, Officer  
4 Pirone has stepped away from Mr. Grant.

5 Q. And where is Mr. Grant if we can see him in either  
6 of these two videos?

7 A. In the Liu video, the lower right, Mr. Grant is  
8 standing here. I'm pointing to his legs and his upper  
9 torso.

10 Q. But he does sit down?

11 A. That's correct.

12 Q. Can you go forward and show us that?

13 A. Here he's sitting down at 17,112, and he's seated at  
14 about 17,124 or so.

15 Q. All right. Now, did the video tell us in relation  
16 to what just occurred, what we've just seen up there, in  
17 terms of the interaction, I'll use that term, between  
18 Mr. Grant and Officer Pirone, did the video tell us when  
19 Officer Mehserle arrived on the platform?

20 A. Yes.

21 Q. Had he arrived on the platform to witness this?

22 MR. STEIN: Objection, that calls for speculation.

23 THE COURT: Sustained.

24 BY MR. RAINS: Q. Did the video show him arriving  
25 at some point after this occurred?

26 A. It shows him arriving right now.

27 Q. Is he on the video right now?

28 A. Yes.

1 Q. Where?

2 A. He and Officer Woffinden have just come up from the  
3 stairway where I'm pointing to in the BART platform video,  
4 and they are now approximately 90 or more feet distant from  
5 Officer Pirone's location.

6 THE COURT: Let me ask you a question, how do you  
7 know that that's those two people looking at that image?

8 THE WITNESS: Your Honor, by doing the analysis,  
9 when I watch them going forward and eventually I see them  
10 passing Karina Vargas's video, I identify them and then I  
11 run it backwards and then I can tell you. From this image,  
12 you would say how do you know that, but when I watch the  
13 image unfold, they come into view where I identify them.

14 THE COURT: So that's the testimony. It's  
15 subsequent conduct in the other video, and you trace back  
16 and that's where you identified them there?

17 THE WITNESS: Your Honor, it's the same as me coming  
18 from a block away and you recognize me as I come closer.

19 THE COURT: So that's 2:08:30, right?

20 THE WITNESS: Yes.

21 THE COURT: Let's go to the next area.

22 BY MR. RAINS: Q. Just if we can, Mike, place this  
23 forward realtime so that we see Mehserle arriving, and I  
24 direct your attention to the Vargas video, it will come into  
25 the field of view in the Vargas video -- passed -- there  
26 they are.

27 A. They just now arrived in the area where Officer  
28 Pirone is.

- 1 Q. All right. So they have arrived at the scene at  
2 2:08:37; is that correct?
- 3 A. Approximately, where we draw the line or the scene  
4 is, but that's a good estimate.
- 5 Q. In the work that you did on the video, did you  
6 determine at what time Mr. Mehserle fired the shot?
- 7 A. Yes.
- 8 Q. What time was it?
- 9 A. Just past 2:03:00 a.m.
- 10 Q. 2:11:03?
- 11 A. I'm sorry, 2:11:03 a.m.
- 12 Q. Mehserle has arrived on the platform roughly two  
13 minutes 30 seconds before the shot's fired; is that right?
- 14 A. Roughly, yes.
- 15 Q. I'm going to have you run the video forward to Frame  
16 2:10:23: This is going to be at 2:10:23?
- 17 A. The time or the frame?
- 18 Q. The frame is 20,498.
- 19 A. Thank you. There we are 2:10:23 p.m.; 20,498.
- 20 Q. So if you determined that the gunshot goes off at  
21 2:11:03, this is 40 seconds before the gunshot?
- 22 A. Approximately.
- 23 Q. Approximately. And according to Exhibit I, what we  
24 see in Cross and Liu starting at about Frame 2:04:98 is  
25 Mehserle and Guerra bringing Bryson to his knees for cuffing  
26 and then Grant rising to his knees; is that correct?
- 27 A. Yes, sir.
- 28 Q. Would you show us that, and with reference to Cross,

1 I guess, because that's what you indicate. Can you show us  
2 with an arrow what we're looking at in Cross?

3 A. I've stopped at 20,806. This is Mr. Bryson. Guerra  
4 is still bent forward behind him, and I'm pointing out  
5 Officer Mehserle who is reaching over toward Mr. Grant.

6 Q. All right. And it appears at 2:05:43, Mr. Grant  
7 rises to his knees. Can you show us that? That appears to  
8 be in the Liu video.

9 A. And again, the frame number?

10 Q. I'm sorry. It says 2:05:43.

11 A. That would be correct. Looking down here at the Liu  
12 video, I've stopped at 2:05:20, and I'm pointing here just  
13 for the viewer's reference where Mr. Grant is. And as we  
14 advance the frames, we see that he does rise to his knees.

15 Q. All right. Now at 2:07:91, according to Exhibit I  
16 in the Cross video, we see Mehserle's right hand reaching  
17 behind grant. Can you show us that?

18 A. Yes. Directing your attention to the upper right to  
19 the Cross video, here is Mehserle's right hand reaching  
20 towards Mr. Grant.

21 Q. All right. And it appears now that as you play this  
22 out from this point forward until 2:09:08, Grant is being  
23 moved to the ground; is that correct?

24 A. That's correct.

25 Q. Can you play that forward and tell us if the video  
26 indicates how Mr. Grant goes to the ground, that is, does he  
27 go down prone or supine? What does the video show?

28 MR. STEIN: Objection, call for speculation.