

**IN THE MATTER OF THE THOMAS R. BRAIDWOOD, Q.C.,  
COMMISSIONS OF INQUIRY UNDER THE *PUBLIC INQUIRY ACT*,  
SBC 2007, c. 9**

Room 801  
Federal Courthouse  
701 West Georgia Street  
Vancouver, B.C.

May 14, 2009

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PROCEEDINGS AT  
HEARING (DAY 54)

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1  
Gordon Keith Chambers  
Cross-exam by Mr. Neave (for TASER International)  
(cont'd)

1 Vancouver, B.C.  
2 May 14, 2009  
3

4 THE REGISTRAR: The hearing is now resumed.  
5 THE COMMISSIONER: Yes, good morning, all.  
6

7 GORDON KEITH CHAMBERS, a  
8 witness, recalled.  
9

10 THE COMMISSIONER: Yes, Mr. Neave.  
11 MR. NEAVE: Thank you, Mr. Commissioner.  
12

13 CROSS-EXAMINATION BY MR. NEAVE ON BEHALF OF TASER  
14 INTERNATIONAL, continuing:  
15

16 Q Dr. Chambers, yesterday we were discussing the --  
17 this call, telephone call in which you were --  
18 where you were present and Dr. Tseng and Kerr were  
19 discussing the rhythm strips. Have you had an  
20 opportunity to review your file with respect to  
21 when that call may have occurred, or did occur?

22 A The -- there was a phone call from the Commission  
23 and the tape was sent me by -- by e-mail.

24 Q Okay. And then --

25 A And then subsequent to that there was a phone  
26 call, I believe I called Dr. Kerr.

27 Q Okay.

28 A But as I tell you, my memory's not clear on this.  
29 I remember there being the conversation, but the  
30 exact details I don't remember.

31 Q Okay. And that's --

32 A My -- as I said yesterday, my interest was  
33 strictly to find out if that was asystole or not.  
34 Beyond that I had no interest in what was going  
35 on.

36 Q Okay. And that's the call that Dr. Tseng  
37 participated in, correct?

38 A Again I'm unclear of whether there was a phone  
39 call, whether I was sitting in the Commission  
40 office or whatever. All I remember there was a --  
41 there was the -- they e-mailed me the strip, then  
42 there was a phone call, I believe with Dr. Kerr,  
43 and I think there may have been e-mail  
44 communication between Dr. Kerr and -- maybe it was  
45 -- it could have all been e-mail, actually.

46 Q Well, yesterday you said that there was a call, in  
47 which you were present, and Dr. Tseng, and Dr.

1 Kerr.

2 A I said to the best of my recollection. But I've  
3 said several times I'm unclear as to exact chain  
4 of events, because my interest was in finding out  
5 whether it was asystole or not.

6 Q Okay.

7 A So I can't be a hundred percent sure whether it  
8 was e-mail. It certainly wasn't in the -- Dr.  
9 Tseng was not physically present, and I believe  
10 there was a phone call with Dr. Kerr and the  
11 Commission, but I'm not 100 percent clear of the  
12 events, I'm sorry.

13 Q Are you saying now that Dr. Tseng was not on the  
14 call?

15 A I'm saying Dr. Tseng communicated, but it may have  
16 been by e-mail or by phone, I don't remember.

17 Q Okay. And that was with respect to whether there  
18 was asystole or not demonstrated on the rhythm  
19 strips?

20 A Yes. As I've said several times, there was  
21 initial question arose and I was made aware of it,  
22 that the second AED may have not been asystole,  
23 and the decision whether it was just compressions  
24 or was an actual rhythm present there. And it was  
25 very quickly cleared up when the first printout  
26 came and it was asystole.

27 Q Okay. The -- and you don't recall when that  
28 occurred.

29 A The exact date?

30 Q Yes.

31 A No.

32 Q Do you recall whether it was prior to or after you  
33 issued your report?

34 A I believe it was prior.

35 Q Okay. And we've talked about the issue of  
36 asystole. Was the issue of ventricular  
37 tachycardia also discussed?

38 A Sorry, at this time?

39 Q Yes.

40 A Well, that was -- that was the rhythm that was in  
41 competition, if you like, with the asystole. The  
42 question was, was the possibility of ventricular  
43 tachycardia present and it was shown that it  
44 wasn't.

45 Q Okay. So there --

46 A So there's no -- there's no real issue here. I  
47 think everybody's in agreement that the AED, as

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(cont'd)

1 far as I'm aware, and I could be corrected, that  
2 it's asystole.

3 Q So part of this conversation involved a question  
4 of whether there was ventricular tachycardia on  
5 the rhythm strips, is that fair?

6 A That's fair.

7 Q And similarly was the issue of --

8 A Whether or not, yes.

9 Q Yes, fair. Was the issue of whether there was  
10 ventricular fibrillation also raised during the  
11 course of this discussion?

12 A No, not to my recollection.

13 Q And that's because the rhythm strip, there was no  
14 indication on the rhythm strip that there was any  
15 ventricular fibrillation, fair?

16 A That's correct. Once again, my interest was  
17 strictly -- my assumption was that it was asystole  
18 when the question was raised that it may -- about  
19 another rhythm, I was very interested. But as I  
20 pointed out yesterday, this -- this discourse  
21 lasted a very short period of time, you know, a  
22 few hours or at most one day, I would think, and  
23 it was decided it's asystole. So it came and went  
24 very quickly.

25 Q This discussion lasted the better part of a day?

26 A No. From the time that the question arose.

27 Q Yes.

28 A And I got the e-mail.

29 Q Yes.

30 A Then to the time that the second printout came.

31 Q Yes.

32 A Was a short period of time.

33 Q Okay. Now, on the first page --

34 A And once the second -- the first AED or the first  
35 strip came out, then it was decided it was  
36 asystole and the issue was resolved.

37 Q Do you have your report with you, Doctor?

38 A Yes.

39 Q Before you? Perhaps we should put the exhibit to  
40 you, Doctor. I'll be taking you to various  
41 passages of that today. Thank you, Mr. Registrar.

42 Doctor, I note that on the bottom of the  
43 first page you reference:

44

45 Findings from the autopsy report and their  
46 relative importance were reviewed in meetings  
47 with the forensic pathologist Dr. C. Lee and

1                   with the cardiologist Dr. C. Kerr.  
2  
3       A       That's correct.  
4       Q       Have I read that correctly. Why is Dr. Tseng not  
5               mentioned?  
6       A       I didn't have a meeting with him.  
7       Q       Now, yesterday we talked about your receipt of the  
8               reports of Dr. Butt, Dr. Tseng and Dr. Kerr. Have  
9               you had the opportunity to review your file and  
10              can you tell us when you received those reports?  
11       A       I did, and I believe those were received --  
12       Q       Let's deal with Dr. --  
13       A       -- after -- after my report.  
14       Q       Okay. Let's deal with Dr. Butt first. When did  
15              you receive that?  
16       A       I believe it was May 5th.  
17       Q       And Dr. Tseng's report, when did you receive that,  
18              sir?  
19       A       May -- May 5th, May 4th.  
20       Q       Which?  
21       A       May 5th, we'll say.  
22       Q       And Dr. Kerr's report, when did you get that?  
23       A       May 5th.  
24       Q       May I see Dr. Butt's report, please.  
25              At any time prior to the completion of your  
26              report, Exhibit 148, did you have or receive Dr.  
27              Tseng's opinion, either orally or in writing?  
28       A       Opinion on which aspect?  
29       Q       On this case.  
30       A       I was sent a study from Northern California.  
31       Q       Yes.  
32       A       That I believe he was an author of.  
33       Q       When was that?  
34       A       I'm sorry, sometime prior to my report.  
35       Q       Okay. And who sent that to you?  
36       A       It probably came via the Commission.  
37       Q       Okay. All right. What other communications did  
38              you have with Dr. Tseng with respect to any of --  
39       A       I believe I had a phone communication with Dr.  
40              Tseng, asking him about some of the issues or the  
41              potential for a cardiomyopathy to exist.  
42       Q       When was that?  
43       A       Sometime prior to my report. I don't have the  
44              exact date.  
45       Q       Okay. What else did you discuss with Dr. Tseng  
46              prior -- prior to your report, other than the  
47              cardiomyopathy issue?

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Cross-exam by Mr. Neave (for TASER International)

(cont'd)

- 1 A That was -- that was my main -- my main issue.  
2 Q Did you discuss with him Mr. Enchelmaier's  
3 evidence?  
4 A I may have, I don't remember. I remember -- I  
5 remember being concerned about Mr. Enchelmaier's  
6 ability to detect a pulse and breathing when he  
7 was on the video facing away from Mr. Dziekanski,  
8 and when according to my looking at the video, it  
9 was only six seconds. So I may have -- I may have  
10 raised that and said, "What do you think," but  
11 that was not my primary issue that I was dealing  
12 with.  
13 Q Did you discuss the ventricular tachycardia issue  
14 with him during the course of this call?  
15 A No.  
16 Q Or at any other time?  
17 A As I said, during this period of time, when the --  
18 when the printouts came --  
19 Q Yes.  
20 A -- the question was raised.  
21 Q Okay. Other than the --  
22 A Other than that, no.  
23 Q Okay. Did you discuss any matters with respect to  
24 your report with Dr. Butt prior to issuing your  
25 report, which is now Exhibit 148?  
26 A Did I discuss anything with Dr. Butt?  
27 Q Yes.  
28 A No.  
29 Q And Dr. Kerr, we know you had meetings with and  
30 had various discussions with him about the  
31 matters.  
32 A That's correct.  
33 Q Now, Doctor, I'm going to move to a new area. I'm  
34 going to ask you some general questions with  
35 respect to sudden death during restraint. I asked  
36 you a few yesterday and I'm going to follow up on  
37 that. Would you agree with me, Doctor, from your  
38 review of the literature, that sudden death during  
39 restraint is documented in various cases involving  
40 various forms of restraint. They include, for  
41 example, hogtie cases, is that fair?  
42 A That's correct.  
43 Q They would include pepper spray cases.  
44 A That's correct.  
45 Q They would include baton strike cases, fair?  
46 A I would agree.  
47 Q And would you also agree, sir, that they include

- 1 cases in which the subject has been tackled by the  
2 police or others and subdued on the ground?
- 3 A I'm not sure "tackled by the police" what that  
4 means.
- 5 Q Well, restrained --
- 6 A You mean physically restrained?
- 7 Q Physically restrained on the ground by one or more  
8 police officers.
- 9 A Yes, I would agree.
- 10 Q And you would perhaps agree with me, as well, that  
11 in these cases death has occurred absent findings  
12 of any anatomical or toxicological cause; is that  
13 fair?
- 14 A It does happen, yes.
- 15 Q And in such cases the mechanism of death is  
16 unknown?
- 17 A Yes, but you're trying to make a generalization  
18 from what should be a population descriptive. Out  
19 of that I would think a more correct way to look  
20 at it is out of a population of people that died  
21 from sudden -- during sudden restraint, what were  
22 their demographics and the characteristics?
- 23 Q Yes.
- 24 A And I think many of them would have anatomical  
25 abnormalities, many of them would have other  
26 characteristics and we jus don't know. I think  
27 that's in the literature.
- 28 Q Yes. And you would agree with me that --
- 29 A But certainly there are cases, I would agree,  
30 there must be cases where people die in sudden  
31 restraint and there's no good explanation.
- 32 Q Yes. And frequently what happens in these cases,  
33 I expect you may agree as well, that the first  
34 initial rhythm that's determined is asystole.
- 35 A That's determined?
- 36 Q Yes.
- 37 A Yeah, but that -- that's a product of how long,  
38 how much time it takes from the start of whatever  
39 the fail of arrhythmia is to the asystole. We  
40 don't know what happens in between.
- 41 Q Fair. But when they are hooked up to a monitor  
42 and a rhythm strip is generated, frequently in  
43 these cases the first rhythm is generated as  
44 asystole, is that fair?
- 45 A That's right. But the missing element is the time  
46 period.
- 47 Q I understand that.

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Cross-exam by Mr. Neave (for TASER International)

(cont'd)

1 A So you can't really draw a conclusion -- many  
2 conclusions from this as to what -- what actually  
3 happened.

4 Q Alls I'm asking is a general question that  
5 frequently in these cases --

6 A By the time they get hooked up to a monitor there  
7 is asystole.

8 Q Thank you.

9 A I agree.

10 Q Now, Doctor, if I can have you turn to page 20 of  
11 your report Exhibit 148, please. Your opinion is  
12 essentially summarized in the last two paragraphs  
13 of this document; is that fair?

14 A Yes.

15 Q And what you say here is that:

16

17 In my opinion, the two most significant  
18 contributing causes of the death of Mr.  
19 Dziekanski were the act of tasering and the  
20 act of physical restraint. Further, the  
21 mechanism of death was most likely the  
22 creation of a hyper...

23

24 I always stumble on this one, anergic (phonetic)  
25 state.

26 A "Adrenergic".

27 Q Thank you.

28

29 ...that caused or brought on a fatal  
30 arrhythmia, although the possibility of  
31 direct capture of the heart and the  
32 development of ventricular tachycardia cannot  
33 entirely be ruled out.

34

35 And then you go on to conclude:

36

37 The extended period of tasering appears on  
38 the tape by Pritchard to have been a great  
39 deal more stressful to Mr. Dziekanski than  
40 the act of physical restraint. So while both  
41 most likely contributed to the death of Mr.  
42 Dziekanski, in my opinion, the act of  
43 tasering Mr. Dziekanski for 31 seconds over a  
44 period of 49 seconds, contributed more to his  
45 stress response and subsequent demise than  
46 physical restraint.

47

1 Have I read that correctly?

2 A Yes.

3 Q And that's your opinion -- that was your opinion  
4 when you wrote this on the 4th of May and that's  
5 your opinion now, is that fair?

6 A That's correct.

7 Q Now, yesterday we started to review the basis upon  
8 which you arrived at this conclusion, and the  
9 first issue that we discussed briefly was the  
10 facts component.

11 A The which?

12 Q The facts component, the information you received.

13 A The basic events, you mean?

14 Q Yes. And we reviewed that in some detail, and  
15 that -- that's material from the Commission, fair?

16 A That's correct.

17 Q Then I believe what you said is that you then  
18 looked at factors which you determined from your  
19 professional training and experience as possible  
20 mechanisms, fair?

21 A I also pulled them out as you know from the  
22 various reports and there were a lot of them were  
23 coming around. There was issues raised.

24 Q Right.

25 A And basically I just made a list of what I could  
26 adduce from the literature might be a potential  
27 risk, such as Taser, such as restraint, and then  
28 the issue of delirium tremens was raised, excited  
29 delirium, just a straight what are the  
30 possibilities, yes.

31 Q And what I'm getting at is that the factors are  
32 derived from in part the literature that you  
33 looked at, that you've just mentioned, fair?

34 A Yes.

35 Q And in part from your experience working as a  
36 clinical epidemiologist for a number of years, and  
37 as a physician, is that fair, your training and  
38 experience.

39 A The risk factors, the list of -- the way I -- the  
40 logic was to find the risk factors. That's part  
41 of clinical epidemiology. The identification of  
42 the risk factors essentially came out of all the  
43 material provided by the Commission.

44 Q Okay.

45 A I didn't sit down and try and think up new, you  
46 know, new mechanisms. They're already in this --

47 Q Right.

Gordon Keith Chambers

Cross-exam by Mr. Neave (for TASER International)

(cont'd)

1 A -- in this material.  
2 Q And the mechanisms that you considered are ones  
3 that are drawn from the literature, fair?  
4 A Yes.  
5 Q And the literature, and we started to examine the  
6 literature that you looked at, the first thing  
7 that we talked about where texts, fair? You  
8 looked at some texts?  
9 A The first thing I -- I mean, I don't remember the  
10 order that I looked at it.  
11 Q No, I'm not asking -- the order doesn't matter. I  
12 just want to get a list.  
13 A Okay.  
14 Q So texts.  
15 A So there's texts.  
16 Q Okay. All right. And one of the texts was the  
17 text by Ross, is that fair?  
18 A That's correct.  
19 Q And that's the *Forensic Science in Medicine* text,  
20 it's called *Forensic Science in Medicine, Sudden*  
21 *Deaths in Custody* text.  
22 A *Sudden Deaths in Custody*.  
23 Q Yes, this text, right?  
24 A Yes.  
25 Q Thank you. Any others?  
26 A I briefly looked on line at Dr. Di Maio's, there's  
27 a read-only version.  
28 Q That's the excited delirium syndrome?  
29 A I believe he's the second author. Is it his wife  
30 who's the first author?  
31 Q Yes. It's his wife, and that's how I understand  
32 it.  
33 A And he's a forensic pathologist?  
34 Q Yes.  
35 A Okay.  
36 Q Yeah. I'll be taking you to his report.  
37 A Okay.  
38 Q Any others?  
39 A Psychiatric text.  
40 Q Okay.  
41 A Harrison's textbook of medicine, looking at  
42 arrhythmias, and what else, that's pretty well it.  
43 Q Okay. You also looked at peer reviewed scientific  
44 papers on sudden death during restraint and in  
45 particular papers with respect to the testing of  
46 Tasers on both animals and humans; is that fair?  
47 A The Taser literature I looked at the animal

1 studies, the volunteer studies and then whatever  
2 we had, what I call real world situation studies,  
3 trying to get a sense of where that literature  
4 was. And then also did a literature search to  
5 have a look at issues surrounding sudden death in  
6 general.

7 Q And with respect to the -- with respect to the  
8 Taser studies on both animals and humans, I think  
9 we agreed yesterday that there's no clinical  
10 studies in terms of blind or double-blind studies  
11 with respect to the Taser device; is that fair?

12 A No, there's -- I could not identify any -- not  
13 only controlled studies, but any large sort of  
14 prospective cohort, you know, longitudinal  
15 database studies, either.

16 Q Did you examine any epidemiological studies with  
17 respect to the Taser device?

18 A Are you talking about population-based studies?  
19 There was a historical control study that was  
20 published out of Northern California.

21 Q That's Tseng's --

22 A That --

23 Q That's Tseng's paper.

24 A He's the last author, yeah.

25 Q Yeah, Dr. Lee's, Byron Lee's paper.

26 A Yes.

27 Q Any others?

28 A Of epidemiological papers?

29 Q Yes.

30 A There was a small clinical trial by Ordog.

31 Q Yes.

32 A Comparing guns to Taser.

33 Q Yeah.

34 A Which showed in the Taser group a 1.4 percent  
35 mortality rate.

36 Q Yeah.

37 A There was some -- a couple of cases where the  
38 ventricular was captured, either on an implantable  
39 defibrillator -- yeah.

40 Q That's the case study involving the pacemaker  
41 you're talking about.

42 A Yeah, and then there's another one with a  
43 defibrillator. I think there's a couple. Then  
44 there's some various -- but they're all just, you  
45 know, one --

46 Q One-offs.

47 A N=1 studies, yeah.

1 Q Yeah, one-off.  
2 A Yeah, so --  
3 Q One case.  
4 A -- in terms of --  
5 Q Okay.  
6 A -- in terms of major epidemiological studies, no.  
7 Q All right.  
8 A There was some stuff out of the United Kingdom  
9 that was put on -- you know, that was, I think,  
10 for some of the -- the police forces, but most of  
11 what I saw was weak enough not to consider.  
12 Q Okay. And you looked at the work of Dr. Ho and  
13 Dr. Vilke, correct?  
14 A That's correct.  
15 Q And those were the -- that's the next group,  
16 that's the phase 1 human volunteer studies that  
17 we're talking about, fair?  
18 A Yes.  
19 Q And the case reports that we've talked about, that  
20 was the pacemaker case that you mentioned, fair?  
21 A Well, there was -- there was a couple, actually.  
22 Q Yes.  
23 A There was -- I think there was a young boy who was  
24 caught with ventricular fibrillation after Taser.  
25 There's about four or five in the literature.  
26 There's an automatic, you know, again these are --  
27 these are interesting. It shows the potential for  
28 direct capture, but it doesn't really give us much  
29 in terms of being able to predict relative risk in  
30 a real-world situation, so I'm just mentioning  
31 them and you're asking me what I reviewed.  
32 Q Yes. Any other literature that you can recall?  
33 A No.  
34 Q We know you considered Dr. Lee's report, fair,  
35 he's the pathologist in this case.  
36 A Sorry?  
37 Q Dr. Lee's report, you considered that, the post-  
38 mortem examination report?  
39 A Yes.  
40 Q And we've talked about the information from Dr.  
41 Tseng and Dr. Kerr. What other information that  
42 we haven't summarized did you rely upon?  
43 A My understanding of the Commission's request to me  
44 was to give an independent report, my best  
45 understanding what happened to Mr. Dziekanski.  
46 Q Yes.  
47 A So I limited the development of my report to the

1 -- a review of the events, identification of the  
2 risk factors, some of those would have included  
3 reviewing those reports you paraded before me  
4 yesterday. I did go back and look at -- I've got  
5 my binder here, if you want to review it, so I did  
6 review those reports.

7 Q Mm-hmm.

8 A If they're the same ones that you presented. When  
9 you presented them yesterday, they were presented  
10 in a fashion I didn't recognize. For example,  
11 Swerdlow's report, mine was nine pages. You gave  
12 me something that was 60 pages. I'm assuming I  
13 got the first nine pages. The other reports are  
14 actually in a binder from an IHIT binder, so I  
15 didn't recognize it from what you presented it.

16 Q Okay.

17 A But when I reviewed it last night there were some  
18 comments in there about raising certain risk  
19 factors, so quite a while ago when I was  
20 developing the report, those -- some of the risk  
21 factors were discussed in that body of reports by  
22 I think it's Di Maio.

23 Q Yes. Pollanen?

24 A Pollanen.

25 Q Yes. Sloane.

26 A Yeah, it's just the IHIT, Sloane.

27 Q Yes. Okay. Now, you didn't have Dr. Swerdlow's  
28 report when you completed yours, did you -- or  
29 sorry, you didn't have Dr. Swerdlow's report when  
30 you completed your report, fair? It postdates  
31 your report.

32 A That's correct.

33 Q So just before we step back, other than the  
34 matters that we've been discussing with respect to  
35 the material --

36 A Well, excuse me, I think I may have had Dr.  
37 Swerdlow's report prior to my report.

38 Q Okay. It was April 22nd, 2009 you were provided  
39 with that?

40 A That's correct.

41 Q Okay. And you've got -- and you received the  
42 first nine pages of that document, is that fair?

43 A That's right.

44 Q Okay.

45 A That's why I didn't recognize it when you  
46 presented it yesterday.

47 Q All right.

1 A Because what --

2 Q Okay.

3 A You scared me with that 60-page report. It didn't  
4 look familiar.

5 Q I didn't mean to. So does that encapsulate the  
6 materials upon which you reviewed or relied in  
7 reaching your opinion?

8 A That including referencing some of the  
9 epidemiological methodological information such as  
10 David Sackett's text on clinical epidemiology  
11 which deals with rules of causation.

12 Q Yes.

13 A And hierarchy of evidence.

14 Q Anything else?

15 A I think I mentioned Dr. -- Dr. Otto and his  
16 translation.

17 Q Yes.

18 A There's a summary that was handed to me by the  
19 Commission called "Circumstances".

20 Q Yes.

21 A And then there's a small text called *PDQ*  
22 *Epidemiology* by Norman Streiner, which I just had  
23 a quick look at. It sort of summarized some of  
24 the rules of causation. So that's complete as far  
25 as I can remember.

26 Q Thank you. Now, Doctor, if I can take you to page  
27 19 of your report, please, the last paragraph.  
28 You say this:

29

30 As pointed out above and again in my opinion,  
31 a lack of independent controlled studies  
32 using real world experience on which to  
33 assess the truth risks or benefits of  
34 tasering in situations such as at YVR makes  
35 it difficult to assess whether tasering  
36 alone, physical restraint alone, or some  
37 combination of the two was sufficient to  
38 trigger the fatal arrhythmia and death of Mr.  
39 Dziekanski.

40

41 Have I got that?

42 A That's correct.

43 Q And that's your -- that was your opinion then and  
44 it's your opinion now, fair?

45 A What I'm trying to -- yes, what I was trying to  
46 point out there, again as a clinical  
47 epidemiologist who was involved in doing clinical

1 trials and systematic reviews, it's -- it's  
2 disturbing to me that a device of this type has  
3 not been able to develop this type of research so  
4 we could measure the relative risk. It would be,  
5 I think, a lot easier in this case and many other  
6 situations if we -- we had some measurement of the  
7 -- of the relative risk or/and benefits of some --  
8 of the Taser. So that's what I'm trying to point  
9 out is the lack of higher order evidence dealing  
10 in real world situations.

11 Q You do say, though, that it is -- that it has made  
12 -- well, you say:

13  
14 ...makes it difficult to assess whether  
15 tasering alone, physical restraint alone, or  
16 some combination of the two was sufficient to  
17 trigger the fatal arrhythmia and death of Mr.  
18 Dziekanski.

19  
20 Fair?

21 A That's -- that's because that type of information  
22 is lacking, you're correct.

23 Q Yes. And what you then do is you then say this:

24  
25 However, the temporal relationship does argue  
26 strongly that one, the other or both  
27 contributed to the death of Mr. Dziekanski.

28  
29 Have I read that correctly?

30 A Yes.

31 Q You then say:

32  
33 Further, the biological pathway of a  
34 physiological response causing a fatal  
35 arrhythmia, as described above, would apply  
36 to both the use of the Taser and to physical  
37 restraint.

38  
39 Correct?

40 A That's correct.

41 Q And what you're speaking about there I think is  
42 that your statement earlier in your report to the  
43 effect that where there is no ascertained caused  
44 of death, either anatomical or toxicological, that  
45 the assumption is that it's an electrical problem  
46 with the heart resulting in some form of  
47 arrhythmia leading to death. Fair?

- 1 A No, what actually I'm doing is following -- if you  
2 take causation from a clinical epidemiologist's  
3 point of view, what you'd like to see is a large  
4 systematic review; failing that, controlled  
5 trials; failing that, some strong cohort studies.  
6 If you don't have that literature and you're  
7 really stuck and you want to give an opinion, the  
8 best, the highest probability of what happened,  
9 then you go to rules of causation. And what we're  
10 looking at is temporal relationships, especially a  
11 strong one, where -- where something happens very  
12 suddenly afterwards, and then you're looking for a  
13 biological mechanism. You're even looking for a  
14 dose response mechanism, which I think has been  
15 shown in some of the earlier studies. So there's  
16 a -- I didn't put some of the -- deal with all the  
17 rules of causation, but there's -- that's where  
18 I'm going with this.
- 19 Q Right. And the rules of causation that you're  
20 looking at in this case with respect to finding  
21 the agent that has the causative role in the death  
22 in this case, is first the strong temporal  
23 relationship you say.
- 24 A Yes.
- 25 Q Fair? Secondly a plausible biological mechanism,  
26 fair?
- 27 A In the absence of really another explanation,  
28 you're right.
- 29 Q Yes.
- 30 A Yeah.
- 31 Q And thirdly you say the analogy of how deaths  
32 result in or are due in physical restraint cases.  
33 Fair?
- 34 A Just repeat that?
- 35 Q The analogy of how deaths due to physical  
36 restraint are caused.
- 37 A You mean sudden deaths?
- 38 Q Well, that's what we're talking about here, isn't  
39 it?
- 40 A Yeah. I mean, yeah, the -- the purported  
41 mechanism that you see in several sources is a  
42 hyperadrenergic state that does another -- a  
43 number of things, you know, release of adrenaline,  
44 release of noradrenaline, neuroamine transmitters,  
45 blood pressure rises, heart rate rises. There is  
46 one thing, I think, in that book that one of the  
47 risk factors is prolongation of the QT interval,



1                   physical restraint are thought to occur --

2

3

Fair?

4

5

-- support a causative role for the use of  
6                   the taser in this case.

7

8

A     That's correct.

9

Q     So what you're saying is you're looking at three  
10           associations to support your contention that the  
11           Taser was causative of Mr. Dziekanski's death?

12

A     That's correct, in the absence -- the probability  
13           is very high, in my opinion, given the absence of  
14           other explanations.

15

Q     Right. And then you'd agree with me that in Mr.  
16           Dziekanski's case, from your review of Dr. Lee's  
17           report, there is no anatomical or toxicological  
18           cause determined for Mr. Dziekanski's death.

19

A     That's correct.

20

Q     And indeed in this case there isn't one, is there.

21

A     I don't believe so.

22

Q     So what you're doing is you're trying to  
23           determine, using these three factors from clinical  
24           epidemiology, to determine and to support your  
25           opinion that there's a causative role for the use  
26           of the Taser in this case. Fair?

27

A     That's fair.

28

Q     And indeed --

29

A     But there's something more here that, you know, to  
30           say "temporal relationship" as a word, let's  
31           review what I said earlier. This man was 20 hours  
32           plus in a state of stress and doing well. He was  
33           in nine hours at YVR in what I would think we'd  
34           all agree is a -- I mean, I would be very upset if  
35           I was in a foreign airport, I couldn't speak the  
36           language, nobody was dealing with me, somebody got  
37           into an argument with me, I would be very stressed  
38           out.

39

Q     Right.

40

A     But the test of fire is he was -- he was fine. He  
41           did not have a fatal arrhythmia. He did not have  
42           a sudden cardiac arrest, as does happen as we know  
43           periodically in the community. But what happened,  
44           something else happens the moment after the -- the  
45           very short period of time when the -- when the  
46           officers do the intervention.

47

Q     Yes.

- 1 A Now, I think it's untenable, in my position, to  
2 say, well, he was going to have this, you know,  
3 arrest anyway. He was on his way and they were  
4 just incidental. So I think you have to say at  
5 least that these two factors were -- were  
6 contributory. The question of which one is  
7 greater, I think is just looking at the video.  
8 And I really do believe if I could do a controlled  
9 study and put the video up and have 100 educated  
10 people look at it and say, okay, we're going to do  
11 one of two things. We're going to physically  
12 restrain you this way, or we're going to Taser you  
13 for 49 seconds. Take your pick, which do you  
14 choose? I think the answer would be very clear,  
15 that the -- the video shows us that the greater  
16 impact on Mr. Dziekanski was the tasing. That's  
17 simply my position in this report.
- 18 Q I appreciate that, and I am going to look at how  
19 you got there. The first factor that you consider  
20 in supporting your causative role is the strong  
21 temporal relationship, fair?
- 22 A But that includes the -- the 20 hours, the nine  
23 hours --
- 24 Q I understand that.
- 25 A -- and then the very short period of time to when  
26 he collapses. So that's the temporal  
27 relationship. That's -- to me that's a very --  
28 common sense tells you that's a strong temporal  
29 relationship.
- 30 Q And indeed you'd agree with me that in all sudden  
31 death during restraint cases, there's a strong  
32 temporal relationship, fair?
- 33 A But again you're -- I think you keep generalizing  
34 and we have to talk about the specific subgroup  
35 into which Mr. Dziekanski fits. When you talk  
36 about sudden death in restraint, in general,  
37 you're talking about a group of people that many  
38 of them have heart disease and have a bunch of  
39 things that Mr. Dziekanski doesn't have. And I --  
40 I suspect very few of them were under the kind of  
41 test of fire that he had been for that period of  
42 time. So I don't think it's a fair comparison to  
43 say, well, he's just like everybody else who died  
44 in sudden restraint. I think this is a very  
45 unique case.
- 46 Q What I'm asking you, Doctor, is that in sudden  
47 death during restraint cases, there is always a

- 1 temporal association on a number of points, fair?
- 2 A There has to be, yes.
- 3 Q Exactly. There's an underlying disturbance that
- 4 leads to the officer's presence as an example,
- 5 fair?
- 6 A There's no question the temporal relationship is
- 7 there. It's the strength of the temporal
- 8 relationship is what we're -- what I think we're
- 9 having disagreement on.
- 10 Q Right. And we'll come to the strength of it. The
- 11 other factor that's temporal in all of these cases
- 12 is that there's law enforcement that's present.
- 13 Fair?
- 14 A That's correct.
- 15 Q There is some form of restraint, whether it's
- 16 hogtie, a pile-on by the police officers, or some
- 17 other form of restraint, fair?
- 18 A That's correct.
- 19 Q That's all temporal, and the subject dies
- 20 suddenly.
- 21 A That's correct. But what we -- just to add to what
- 22 you're saying, I agree with it, but to add to it,
- 23 if -- if a hyperadrenergic state, if that's the
- 24 true mechanism that's going on in these cases,
- 25 which is my opinion, and the opinion of others,
- 26 then you need to get some longitudinal data or
- 27 cohort studies to find out what risk factors are
- 28 -- will create that state in a given individual,
- 29 because this is a mixed group of people. So
- 30 hogtie might work in somebody's who's got heart
- 31 disease or who's got a mental illness. Maybe you
- 32 need, you know, maybe Taser is a contributing
- 33 factor in somebody who -- who doesn't have other
- 34 risk factors. This is not a uniform set of risk
- 35 factors, right? They have to be looked at.
- 36 Q I appreciate that, and in this case there are no
- 37 studies of the sort you've just mentioned.
- 38 A That's correct.
- 39 Q And in these sudden death during restraint cases,
- 40 the mere fact that there is a temporal
- 41 relationship is an insufficient basis upon which
- 42 to find causation alone.
- 43 A I would agree, depending on how strong it is and
- 44 what else is there.
- 45 Q Now, Doctor, in the Ross text that you reviewed,
- 46 there is a chapter by Dr. Laposata.
- 47 A That's correct.

1 Q You reviewed this chapter?

2 A Yes.

3 Q And you know that from the text she's the former  
4 Chief Medical Examiner for Rhode Island, a  
5 forensic pathologist?

6 A I'm aware of it now.

7 Q Yes. Well, you can see that, if there's any  
8 issue, in the front of your text. And what Dr.  
9 Laposata says in her introduction is this:

10

11 How can death during police restraint be  
12 explained when the pathologist finds no  
13 structural or anatomic lesions to explain  
14 death? This is not an easy question to  
15 answer. When an in-custody restraint death  
16 occurs, there is a close physical and  
17 temporal association between the restraint  
18 process and the death that follows. Because  
19 of this, it is tempting to attribute the  
20 cause of death to the restraint procedure  
21 itself. However, this is an error of logic:  
22 the fallacy of *post hoc ergo propter hoc*,  
23 which is Latin for "after this therefore  
24 because of this". This error in logic may  
25 mislead death investigators into building a  
26 case centred on the deadly effects of police  
27 restraint procedures and prevent  
28 consideration of other mechanisms and causes  
29 of death that occur contemporaneous with  
30 restraint. One such cause is  
31 cardiorespiratory arrest caused by the acute  
32 stress response occurring during police  
33 restraint. This cause of sudden death is  
34 unpredictable and rare, and results from a  
35 combination of individual perception of the  
36 threat posed by the restraint events and  
37 maladaptive pathophysiology of the acute  
38 stress response.

39

40 Do you agree with that, Doctor?

41 A Not entirely, no. I think it's -- you know, to  
42 say that temporal relationship is not important  
43 is, you know -- first of all, I disagree with  
44 that. And then if she's talking about  
45 cardiorespiratory arrest caused by acute stress,  
46 are we talking about the same thing in a different  
47 mechanism? I mean, is it still hyperadrenergic

1 state rather than causing an arrhythmia directly,  
2 is it causing -- I think again the temporal  
3 relationship, you know, this man stops breathing  
4 and then -- and then he's cyanotic very shortly  
5 thereafter.

6 Q So other than the issues of your comment with  
7 respect to the importance of temporal restraint  
8 and your comment with respect to what Dr. Laposata  
9 says about acute stress response and it's  
10 cardiorespiratory arrest effect...

11 A She's hypothesizing, that's --

12 Q Yes.

13 A -- you know...

14 Q Well, so are you.

15 A No, I'm quoting -- I'm quoting several -- I mean,  
16 later in her chapter she deals a lot with this--  
17 with the physiological stress response.

18 Q Yes.

19 A So does Dr. Di Maio.

20 Q Yes.

21 A So she's -- and there's a lot about how the  
22 increased adrenaline will directly affect the  
23 heart and cause an arrhythmia.

24 Q Doctor, let me have you turn to page 74, please,  
25 of Dr. Laposata's paper. And in the -- are you  
26 there, Doctor?

27 A Yes.

28 Q The second full paragraph starting with "A  
29 survey", are you with me? "A survey of the  
30 literature", are you with me?

31 A Yes.

32 Q

33 A survey of the literature on death during  
34 attempts at police restraint reveals that  
35 autopsy-negative deaths continue to occur  
36 regardless of the type of restraint used;...

37

38 You agree with that, we've talked about that,  
39 fair? You agree with that statement?

40 A Yes.

41 Q Then she goes on to say:

42

43 ...the deaths are unexplained by gross  
44 anatomic or microscopic autopsy findings,  
45 toxicology testing, scene investigation, or  
46 medical history.

47

1           You would agree with that?

2       A     That's correct.  These are autopsy-negative  
3           deaths.  Okay.

4       Q     Yes, like in this case.  Fair?  Is that a fair  
5           statement, Doctor?

6       A     I'm just reading this carefully, because I --

7       Q     Yeah, I've paused and I've asked a question, and  
8           let me ask it again.

9       THE COMMISSIONER:  Just a moment.  I think he wanted to  
10          read that.

11      A     I don't see a reference here.  My review of the  
12          literature is not really in agreement with that.

13      MR. NEAVE:

14      Q     Well, let --

15      A     She's implying that a lot -- I think she's  
16          implying, or I think what you're implying, or  
17          somebody, it seems to be is being implied, that a  
18          lot -- there are a lot of autopsy -- a lot of  
19          police restraint deaths are autopsy-negative with  
20          normal microscopic, normal autopsy findings and a  
21          negative medical history.  That's not my  
22          understanding.

23      Q     Well, let's go back to where we were.  You've  
24          agreed with me with respect to the portion of the  
25          paragraph up to that these:

26

27                   ...autopsy-negative deaths continue to occur  
28                   regardless of the type of restraint used;...

29

30                   You've agreed with that, fair?

31      A     I think there are autopsy-negative deaths that are  
32          occurring, yes.

33      Q     And then the next portion of the statement is  
34          this:

35

36                   ...the deaths are unexplained by gross  
37                   anatomic or microscopic autopsy findings,  
38                   toxicology testing, scene investigation, or  
39                   medical history.

40

41                   You'd agree with that?

42      A     I'm sorry, Mr. Neave, without -- without a  
43          reference that I could go and look at, I can't  
44          agree with that paragraph.

45      Q     Well, then I'm just putting the statement to you,  
46          absent a reference do you agree with the statement  
47          or not?

Gordon Keith Chambers

Cross-exam by Mr. Neave (for TASER International)

(cont'd)

1 A I can't agree with it.

2 Q Okay. You would agree with me in this case, in  
3 Mr. Dziekanski's case, we have no gross anatomic  
4 or microscopic autopsy findings which -- that  
5 resulted in a determination o death, fair, cause  
6 of death, fair?

7 A Yes.

8 Q The toxicology testing is negative, fair, in this  
9 case?

10 A Yes.

11 Q You're aware of that.

12 A Yes.

13 Q And the death is unexplained by scene  
14 investigation or medical history, fair?

15 A Yes.

16 Q And then she goes on to say this:

17

18 Nontraumatic deaths of agitated individuals  
19 during or shortly after lateral vascular neck  
20 restraint, the hogtie restraint, four-point  
21 restraint, and now even taser restraints  
22 continue to occur.

23

24 You'd agree with that, correct?

25 A Yes.

26 Q And then she continues:

27

28 When these deaths cannot be adequately  
29 explained by injuries produced of lethal  
30 pathophysiology of the procedures themselves,  
31 it is clear that the deaths are coincident  
32 with but not caused by the restraint  
33 procedure.

34

35 Do you agree with that, Doctor?

36 A I couldn't disagree more. I think that's the  
37 whole problem here is, you know, if the way out of  
38 this problem is to -- is to stick our heads in the  
39 sand and say, you know, it's coincident, then I  
40 think we're doing society a disservice. I think  
41 it's incumbent upon us to give our best opinion as  
42 to the pathophysiological mechanism and get on  
43 with it, and I think that's being done in a lot of  
44 areas of literature, and I think even in this  
45 chapter later on when she describes the response.  
46 But to say it's coincident, I -- it just, it's  
47 wrong. Mr. Dziekanski died for a reason. It

- 1           wasn't coincidence.  
2       Q     Well, that's not what she's saying, and read it  
3           carefully.  What she's saying:  
4  
5                    When these deaths cannot be adequately  
6                    explained by injuries produced or lethal  
7                    pathophysiology...  
8  
9           So in this case we don't have an explained injury,  
10          fair, in Mr. Dziekanski's case?  
11       A     49 seconds of tasering is not an injury?  
12       Q     Well --  
13       A     We should debate that.  
14       Q     How do you know --  
15       A     If you tasered me five times, I would be injured,  
16            I would think.  
17       Q     Have you been tasered five times?  
18       A     No.  
19       Q     So you're speculating.  
20       A     I'm looking at the video.  
21       Q     Well, you're speculating on your assessment of the  
22            video, fair?  
23       A     And a reading of the literature, tetany of  
24            muscles, you know, reflex, pain up through the  
25            spinal cord, it depends on your definition of  
26            injury.  
27       Q     You're speculating on the video.  
28       A     And -- and the mechanism of how Taser works, so --  
29       Q     Yes.  
30       A     -- it depends how you define injury.  
31       Q     So you're -- so in essence you're speculating  
32            twice.  You're speculating on the video, fair, and  
33            you're speculating on the -- how the Taser works  
34            at -- at the level that you've just spoken about,  
35            fair?  
36       A     Well, I guess I'm reacting, when you cannot  
37            adequately explain by injuries, I mean, what --  
38            what she -- or lethal pathophysiology, what you're  
39            saying is there's no point in looking, we don't  
40            know.  
41       Q     Well, let me go back to my question.  You're  
42            speculating from your subjective viewing of the  
43            video, fair?  
44       A     No, I was -- I was reacting to -- I asked the  
45            question, do you consider somebody tasered an  
46            injury?  
47       Q     And my question is this, you're speculating from

- 1           your assessment of what you saw on the video  
2           subjectively.
- 3       A     And what I know about people being tasered from  
4           reading the literature.
- 5       Q     And you're speculating with respect to the  
6           mechanisms resulting from a Taser application?
- 7       A     In terms of what? In terms of sudden death?
- 8       Q     Yes.
- 9       A     Arrhythmia?
- 10      Q     Yes.
- 11      A     What I've done is look at the various -- the  
12           hyperadrenergic state and that's been described in  
13           different sources in the literature, and in my  
14           opinion, that's the most likely mechanism. So if  
15           you call that speculation, yes.
- 16      Q     Let's deal with that now, Doctor.
- 17      THE COMMISSIONER: Doctor, I have to say to you that  
18           the word "speculate" in law can mean quite  
19           something quite different than the word speculate  
20           in your science.
- 21      A     Well, in my area we talk about the most likely  
22           probability, the highest probability, and we have  
23           to deal with what's available for us in the -- Mr.  
24           Commissioner, in the absence of proper controlled  
25           studies that could give us a relative risk, I have  
26           to look at the pathophysiological mechanisms that  
27           have been identified and predict that mechanism  
28           that has the highest probability. So in that  
29           sense it's not speculation, and I'm not sure what  
30           speculation in the legal sense means.
- 31      THE COMMISSIONER: The legal sense it means you  
32           shouldn't do it.
- 33      A     No, but let's talk probabilities. I think there's  
34           a very high probability that a hyperadrenergic  
35           state is what's going on in these cases.
- 36      MR. NEAVE: Well, let's --
- 37      A     I think there's also a very high probability, in  
38           my opinion, from reading the literature and  
39           everything, is that what drives it can vary,  
40           depending on the perception of the person, and  
41           depending on their general health state, mental  
42           and heart, and what's driving in terms of stress.  
43           And I would -- I think one of the issues here is  
44           if people are saying that Taser is not causing  
45           stress to people who are being tasered, then I  
46           would strongly disagree with that.
- 47      Q     On what basis?

- 1 A I think to shoot -- point a gun-like object, shoot  
2 copper wires at 180 feet per second, whatever, and  
3 deliver 50,000 volts to take over somebody's  
4 muscles must be (a) quite frightening, (b) very  
5 painful, and (c) potentially dangerous in terms of  
6 falls and other issues, so...
- 7 Q You believe that there is 50,000 volts applied to  
8 the body, is that what you're telling me? You're  
9 telling Mr. Commissioner?
- 10 A Well, you and I both know that it's Ohm's law that  
11 the gun produces 50,000 volts, that the current  
12 varies with the resistance.
- 13 Q Do you know --
- 14 A So depending on the ohms, it's the amperes that  
15 we're really interested in.
- 16 Q Do you know, Doctor, how much energy is received  
17 by a Taser discharge?
- 18 A I'm sure you'll tell me, but it's --
- 19 Q No, I'm asking, do you know?
- 20 A Yes, I'll give you my medical answer: it's enough  
21 to cause severe pain and incapacitation of the  
22 muscles, and for people to scream out in pain. Is  
23 that not right? So whatever it is, it's a lot.
- 24 Q Can you put Exhibit 77 to the witness, please.  
25 Have you seen Dr. Lu's report before, Doctor?
- 26 A Yes.
- 27 Q So you know that Dr. Lu concludes that Mr.  
28 Dziekanski was suffering from the syndrome of  
29 delirium prior to his death?
- 30 A He made that diagnosis, yes.
- 31 Q And you have no cause to dispute that finding, do  
32 you?
- 33 A Yes, I disagree with that.
- 34 Q Are you a psychologist, sir?
- 35 A No.
- 36 Q Are you trained as a psychologist?
- 37 A No.
- 38 Q Are you -- have you ever been qualified to give a  
39 psychological opinion?
- 40 A No.
- 41 Q Thank you.
- 42 A But I -- could I add --
- 43 Q Or in psychiatry?
- 44 A Hmm?
- 45 Q Or in psychiatry. You're not a psychiatrist,  
46 fair?
- 47 A No, but I can compare what I saw on the video with

- 1 the DSM-IV criteria, and I don't think it's  
2 possible, if you look at the DSM-IV, the diagnosis  
3 of delirium requires a history, a physical  
4 examination or lab tests, and usually requires a  
5 mental -- a physical condition. So I'm not an  
6 expert in that area, but I think if you read the  
7 DSM-IV criteria, I don't believe that Mr.  
8 Dziekanski fits.
- 9 Q Well, that's not Dr. Lu's opinion, is it.  
10 A No, it's not.  
11 Q So you don't agree with Dr. Lu.  
12 A I disagree.  
13 Q Can I take you back to page 73, please, of Dr.  
14 Laposata's paper, and this is the paper from the  
15 Ross text that we've been speaking about. The  
16 bottom paragraph under "Acute Stress Response and  
17 Sudden Death During Restraint", are you with me,  
18 Doctor?
- 19 A I was -- yeah, I was actually looking at page 62,  
20 "Physiological Changes Associated With the Acute  
21 Stress Response".  
22 Q I'm at 73.  
23 A You're at...  
24 Q 73, please.  
25 A 73. Yes.  
26 Q She says this:  
27  
28 Unexpected sudden death during restraint  
29 procedures may be the result of the acute  
30 stress response and not because of any  
31 damaging physical effects of the restraint  
32 procedures themselves. This concept is  
33 consistent with what is known about the risk  
34 for death intrinsic to the neuroendocrine  
35 acute stress response that can be triggered  
36 by being restrained.  
37
- 38 Do you agree with that, Doctor? Do you agree with  
39 that sentence, Doctor?  
40 A I'm just taking time to read it.  
41 Q Well, I can read it again if you'd like.  
42 THE COMMISSIONER: Mr. Neave, I'd be most obliged if  
43 when the doctor is considering, you wouldn't ask  
44 another question.  
45 MR. NEAVE: Thank you.  
46 A I would agree to the point that if -- it depends  
47 on -- I would agree that:

1                   Unexpected sudden death during restraint  
2                   procedures may be the result of the acute  
3                   stress response --

4  
5                   That's the equivalent of a hyperadrenergic  
6                   state.

7  
8                   -- and not because of any damaging physical  
9                   effects of the restraint procedures  
10                  themselves.

11  
12                  I think she's implying, you know, choking, you  
13                  know, physical stuff that you would see on  
14                  autopsy. So in that sense, I would agree.

15                  Q     And then she says:

16  
17                         This concept is consistent with what is known  
18                         about the risk for death intrinsic to the  
19                         neuroendocrine acute stress response that can  
20                         be triggered by being restrained.

21  
22                         Would you agree with that, Doctor?

23                  A     Yes, I do. I think that depending on the person's  
24                         perception, depending on the person's health,  
25                         mental state, and the -- how aggressive the  
26                         physical response -- the physical restraint is,  
27                         that that could drive the hyperadrenergic state to  
28                         cause a fatal arrhythmia, yes.

29                  Q     And then she continues with:

30  
31                         Sudden death from the acute stress response  
32                         during restraint can occur unpredictably and,  
33                         indeed, rarely considering how often  
34                         restraint procedures are used with no ill  
35                         effects.

36  
37                         Do you agree with that?

38                  A     I'd like to read that.

39                         She's just describing it relative to  
40                         restraint, sudden death is a rare event. That's  
41                         all she's saying.

42                  Q     Okay, you agree with that?

43                  A     I agree with that.

44                  Q     She then continues:

45  
46                         To prepare the animal for fight or escape,  
47                         the neuroendocrine cascades allow for complex

1 types of responses in many different oranges.

2

3 Would you agree with that?

4 A Yes.

5 Q

6 Modifiers that are unique to the individual  
7 can further alter these responses.

8

9 That's a fair statement, isn't it?

10 A That's true.

11 Q

12 In addition, in humans, the acute stress  
13 response may be triggered by psychological  
14 factors based on the individual's perception  
15 of the events.

16

17 A I'd agree with that.

18 Q You'd agree with that. We've spoken about that.  
19 Then she continues:

20

21 Death during the acute stress response  
22 induced by restraint procedures has also been  
23 reported in settings other than police  
24 settings.

25

26 You'd agree with me there, fair?

27 A I assume, yes.

28 MR. NEAVE: Now, Mr. Commissioner, I'm in your hands  
29 with respect to marking this. I think we've  
30 referred to sufficiently that it ought to be  
31 properly marked.

32 THE COMMISSIONER: Yes, I think it should be.

33 MR. NEAVE: Thank you.

34 THE COMMISSIONER: I think it should be marked.

35 THE REGISTRAR: It will be marked as Exhibit number  
36 150.

37

38 EXHIBIT 150: Item entitled "Restraint  
39 Stress" by Elizabeth A. Laposata

40

41 MR. NEAVE: Mr. Registrar, would you put 141G, please,  
42 it's the *Forensic Science International* journal  
43 article, please, to the doctor.

44 Q Now, Doctor, this is a paper from *Forensic Science*  
45 *International*, a 2009 paper. As you may be aware,  
46 this is a peer-reviewed publication.

47 A I'm unaware that it's a peer-reviewed.

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Cross-exam by Mr. Neave (for TASER International)

(cont'd)

1 Q You're not aware.

2 A No.

3 Q Okay.

4 A You're telling me it is a peer-reviewed journal?

5 Q Yes. It's by Drs. Dawes, Ho and Miner, entitled  
6 "The Neuroendocrine Effects of the Taser X26: A  
7 Brief report". Did you review this paper, Doctor,  
8 before you prepared your opinion?

9 A No. No, it doesn't look familiar.

10 Q Well, let's -- let's have a look at it. Because  
11 what this paper does, is it provides an assessment  
12 of various forms of either restraint or stress  
13 factors, including the application of the Taser  
14 device, and you'll see in the Introduction, in the  
15 Abstract portion it reads as follows:

16  
17 Law enforcement officers use conducted  
18 electrical weapons (CEW) such as the TASER  
19 X26 to control violently resistive subjects.  
20 There are no studies in the medical  
21 literature examining the effects of these  
22 weapons on the human stress response.

23  
24 That was your point earlier, I believe, fair?

25 A Sorry?

26 Q That was your point --

27 A I'm trying to read ahead here.

28 Q Well, I'll --

29 A Where are you now?

30 Q I'll take you through it. If you'd stay with me,  
31 that would be of assistance. I'm in the  
32 Introduction portion under the "Abstract" at the  
33 top of the --

34 A Right.

35 Q -- first page.

36 THE COMMISSIONER: Just let me interrupt. Are we at  
37 141C?

38 MR. NEAVE: "G".

39 THE COMMISSIONER: Oh, I'm --

40 MR. NEAVE: Thank you, Mr. Commissioner. Yeah, that  
41 would be -- and where I am, Mr. Commissioner, is  
42 you'll see at the top of the -- of the paper,  
43 abstract, I'm in the small text "Introduction".

44 Q So going back to that, Doctor, I've read to you  
45 the first sentence. And the second sentence by  
46 the authors is this:

47

1                   There are no studies in the medical  
2                   literature examining the effects of these  
3                   weapons on the human stress response.  
4

5                   And that was your comment earlier, fair?

6           A        I said -- I added under real world situations --

7           Q        Well, are there --

8           A        -- as opposed to volunteer studies.

9           Q        Okay. Real world there is none, and were you  
10           aware of this volunteer study?

11          A        No.

12          Q        This is -- and you would see from the authors:

13

14                   This is the first study to compare the human  
15                   stress response to conducted electrical  
16                   weapons, oleoresin capsicum (O.C.) spray, a  
17                   cold-water tank immersion, and a defensive  
18                   tactics drill.  
19

20                  Do you see that? So that's the comparator.

21          A        Right.

22          Q        Fair?

23          A        Okay.

24          Q        The "Results" you will see in that section:

25

26                   Alpha-amylase had the greatest increase from  
27                   baseline at 10-15 min. with the defensive  
28                   tactics drill.  
29

30                  Have I read that correctly?

31          A        Yes.

32          Q        

33                   Cortisol had the greatest increase at 15-20  
34                   min. with O.C.  
35

36                  Correct?

37          A        Yes.

38          Q        And:

39

40                   Cortisol remained most elevated at 40-60 min.  
41                   in the defensive tactics drill group.  
42

43                  Fair?

44          A        Yes.

45          Q        And then going to the "Conclusions":

46

47                   Our preliminary data suggests that physical

1 exertion during custodial arrest may be the  
2 most activating of the human stress response,  
3 particularly the sympathetic-adrenal-medulla  
4 axis. This may suggest that techniques to  
5 limit the duration of this exertion may be  
6 the safest means to apprehend subjects,  
7 particularly those at high-risk for in-  
8 custody death.  
9

10 And it concludes:

11  
12 Conducted electrical weapons were not more  
13 activating of the human stress response than  
14 other uses of force.  
15

16 Have I read that correctly?

17 A Yes.

18 Q This is the only such study that you're now aware  
19 of with respect to these issues, is that fair?

20 A Well, I mean, I'd have to have a little bit of a  
21 look at this, but first of all, you've only got 16  
22 in each group. This is an unblinded study, it's a  
23 volunteer study. You've got people that are  
24 volunteering. I can't tell whether you've got the  
25 volunteer for each group, but just a quick look at  
26 it, there's a big difference in ages between the  
27 various groups.

28 THE COMMISSIONER: I think maybe we'll take ten minutes  
29 and you can have a look at that. We'll take the  
30 morning break.

31 THE REGISTRAR: The hearing will now recess for ten  
32 minutes.  
33

34 (WITNESS STOOD DOWN)  
35

36 (PROCEEDINGS ADJOURNED FOR MORNING RECESS)

37 (PROCEEDINGS RECONVENED)  
38

39 THE REGISTRAR: The hearing is now resumed.  
40

41 GORDON KEITH CHAMBERS, a  
42 witness, recalled.  
43

44 CROSS-EXAMINATION BY MR. NEAVE ON BEHALF OF TASER  
45 INTERNATIONAL, continuing:  
46

47 Q So, Doctor, we were at Exhibit 141G, which is the

1 Dawes paper that I directed your attention to.  
2 Your evidence was, I believe that you did not  
3 review this in advance of drafting your opinion,  
4 correct?

5 A As far as I'm aware. I reviewed so many studies,  
6 it's -- but assume I didn't, yes.

7 Q Okay. And you would agree with me, Doctor, that  
8 this involves testing of human stress response,  
9 fair?

10 A Sort of.

11 Q And the authors conclude in their discussion, they  
12 say these things, on page 15:

13  
14 The acute stress response in humans is a  
15 neuroendocrine cascade initiated by the  
16 hypothalamus. The cascade has two  
17 components:...

18  
19 And they run through those.

20 A Where are you at?

21 Q On page 15 under item 4 "Discussion" on the right-  
22 hand column.

23 A I don't seem to have that.

24 Q Page 15?

25 A Oh, page 15, yes.

26 Q Are you with me, "Discussion", item 4?

27 A Yes.

28 Q That first paragraph.

29 A That's correct.

30 Q And then they -- are you with me now, Doctor?

31 A Yes.

32 Q Okay.

33  
34 The cascade has two components: the  
35 sympathetic-adrenal-medulla axis, and the  
36 hypothalamic-pituitary-adrenal axis. The SAM  
37 axis is responsible for the release of  
38 catecholamines, primarily epinephrine, from  
39 the adrenal medulla --

40

41 A Medulla.

42 Q Medulla, thank you.

43

44 -- chromaffin cells. These cells contain a  
45 pool of catecholamines that are available for  
46 immediate release. This axis is colloquially  
47 referred to as the "fight or flight"

1 response.

2

3

A Correct.

4

Q I've read that correctly. You would agree with that?

5

6

A Yes.

7

Q And then down, Doctor, to the last paragraph on the page:

8

9

10 Epinephrine release is the key end-result of  
11 the neuroendocrine cascade. It produces a  
12 number of adaptive physiologic changes in  
13 response to stress, including positive  
14 chronotropic and inotropic cardiac effects,  
15 increased systemic vascular resistance,  
16 increased arterial blood pressure, increased  
17 metabolism, and increased thermogenesis.  
18 However, it can also produce maladaptive  
19 physiologic changes including myocardial  
20 ischemia, cardiac dysrhythmias, reflex  
21 bradycardia (which can cause asystole),  
22 pulmonary edema, lactic acidosis, and  
23 hyperthermia.

24

25

Would you agree with that statement?

26

A I mean, he's pretty -- he's got everything including the kitchen sink in there, but I guess in general I would agree with that.

27

28

29

Q And then, Doctor, over to the column on the right-hand column, last paragraph on that page:

30

31

32

There are also in-custody death theories about the delayed clearance of catecholamines from the blood after the cessation of the stressor. Based on the work of Dimsdale et al, and others, Di Maio proposed...

33

34

35

36

37

38

And that's Dr. Di Maio who were speaking about.

39

A Right.

40

Q

41

...proposed that persistent circulating levels of catecholamines create a "period of peril" after the cessation of struggle. Catecholamines cause potassium to enter cells. This is thought to be protective during the "fight or flight" response as potassium leaks out of exerting muscle

42

43

44

45

46

47

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Cross-exam by Mr. Neave (for TASER International)

(cont'd)

1 tissue. However, once the exertion ceases,  
2 the persistent circulating catecholamines can  
3 cause a temporary hypokalemia.

4

5 Would you agree with that, Doctor?

6 A He's -- in general, that's another description of  
7 the hyperadrenergic state, if you like.

8 A Yes.

9 Q And then, Doctor, if I can take you to page 18,  
10 please. And I'm on the left-hand column, fourth  
11 full paragraph, that starts "In this study".

12 A Yes.

13 Q

14 In this study, the TASER X26 CEW was compared  
15 to other uses of force or an established  
16 painful stimulus. The defensive tactics  
17 drill resulted in the greatest change in  
18 salivary alpha-amylase at 10-15 min. with a  
19 change of 53.8 U/mL. O.C. was next with a  
20 change of 37.4. The CEW and cold-water tank  
21 immersion did not appear particularly  
22 activating of the sympathetic stress  
23 response. O.C. had the greatest change in  
24 salivary cortisol at 15-20 min. with a change  
25 of 0.5 mcg/dL. The CEW was next with a  
26 change of 0.38, and the defensive tactics  
27 drill after that with a change of 0.25. The  
28 defensive tactics drill had the greatest  
29 delayed change from baseline in cortisol with  
30 a change of 0.47. The cold-water tank  
31 immersion did not appear particularly  
32 activating of the HPA stress response. While  
33 statistical significance is limited by this  
34 data, it tends to suggest that exertion and  
35 O.C. may have the most important influence on  
36 these markers of stress when compared to the  
37 cold-water immersion tank or the TASER CEW.

38

39 And you'd agree, I've read that correctly?

40 A I disagree with this, what you've read, but you've  
41 read it correctly.

42 Q You'd agree that that was the -- that is the  
43 findings of Drs. Dawes, Ho and Miner in a peer-  
44 reviewed published scientific periodical?

45 A I think they've misrepresented what the study  
46 results show.

47 Q Doctor, you would agree with me that those were

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(cont'd)

1 the conclusions --

2 A Can I give you my reasons?

3 Q Doctor, you would agree with me that the  
4 conclusions are those of Drs. Dawes, Ho and Miner  
5 in a published and peer-reviewed periodical, fair?

6 A Yes.

7 Q Thank you.

8 THE COMMISSIONER: Do you want to give your answer now?

9 A Can I?

10 THE COMMISSIONER: Yes.

11 A I only had ten minutes to have a quick look at  
12 this, but I don't -- if I was an editor of a  
13 journal I would not publish this. Just a quick  
14 look at this would show that it's a volunteer  
15 study where people self-selected. If I take you  
16 to Table 1 -- do you want to have a look at Table  
17 1?

18 MR. NEAVE:

19 Q I just want your answer, Doctor.

20 A You'll see that there's a huge age group  
21 difference between the people that self-selected  
22 into the various types of treatment. Then if I  
23 take you to Table 2, and you look at the Amylase  
24 results at baseline, if you line up the age  
25 groups, you'll see that basically the baseline  
26 Amylase rates are age-dependent. So what you  
27 have, we call this rancid sampling. You have --  
28 you have people of different ages with different  
29 characteristics in each group.

30 Then if I take you to the results, which Dr.  
31 -- the authors are quoting, which Mr. Neave was  
32 just reading to us, this is on Table 3. And if  
33 you look, and he's saying that the greatest effect  
34 was in the -- I think he said the 10-15 minutes -  
35 sorry - in the defensive tactics group. First of  
36 all, it's not defined, so unreproducible, but  
37 secondly, and most importantly of all, what's very  
38 misleading here, if you look at the P-values in  
39 the third column, we have two issues. One is  
40 multiple comparisons that you have to adjust for.  
41 So a conservative way would be to say anything  
42 that is greater than .01 would be statistically  
43 non-significant. If you look at the P-value for  
44 what the authors are describing as a significant  
45 change, it's P-value is .51, it's basically no  
46 difference.

47 So what drives these studies, the reason we

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(cont'd)

- 1           have statistical significance is to tell us to  
2           what degree these results can be relied on as  
3           being not due to chance. Now, granted this is a  
4           pilot study, but the correct -- the correct  
5           conclusion the author should have drawn is there  
6           is no difference between these.
- 7       Q     Well, Doctor, they didn't draw that conclusion,  
8           did they. Fair?
- 9       A     Well, they ignored --
- 10      Q     Doctor, they didn't draw that conclusion, fair?
- 11      THE COMMISSIONER: No, please --
- 12      A     No, but I disagree with it.
- 13      THE COMMISSIONER: -- don't interrupt him.
- 14      A     I mean, you cannot publish a study, not reach  
15           statistical significance saying there's a  
16           difference. It's just not on. I mean, that's --  
17           so I don't know how they got it published. I  
18           notice, I tried to look up this *Forensic Science*  
19           *International*. I accept your fact that it's peer-  
20           reviewed, but it's printed in Ireland and  
21           relatively obscure, in my opinion.
- 22      MR. NEAVE:
- 23      Q     Doctor --
- 24      A     I don't think this article would be published in a  
25           top-level journal, not with those conclusions. So  
26           I discount this article.
- 27      Q     I understand that, Doctor. You would agree with  
28           me that the conclusions in the paper are as I've  
29           read them, fair?
- 30      A     And incorrect, yes.
- 31      Q     Did I read them -- did I read the conclusions  
32           incorrectly?
- 33      A     No, I think the authors have misinterpreted the  
34           results.
- 35      Q     I understand that.
- 36      A     Based on Table 3, based on the way that the  
37           baseline characteristics set up, and based on the  
38           way people self-selected in the groups, and based  
39           on the lack of statistical significance achieved  
40           by the results.
- 41      Q     Dr. Ho's evidence --
- 42      A     I don't -- I don't really want to comment further  
43           on a study that, you know, I personally don't  
44           think should have been published in its present  
45           form.
- 46      Q     I've read the conclusions correctly, fair?
- 47      A     Yes.

- 1 Q It's a peer-reviewed publication, fair?
- 2 A If you say so. I went online, I could not confirm  
3 that it was peer-reviewed.
- 4 Q They are conclusions you do not agree with, fair?
- 5 A I think most people in my field, I don't know  
6 anybody that would agree with it, yes, so I don't  
7 agree with it.
- 8 Q I'm asking your opinion, Doctor, not anyone  
9 else's.
- 10 A I don't agree with -- I don't agree with the  
11 conclusions, no.
- 12 Q Thank you. You're not aware of any other studies  
13 that contradict this finding, fair?
- 14 A That's correct.
- 15 Q And these findings actually contradict your  
16 opinion, fair?
- 17 A No, these findings do not contradict my opinion  
18 because the results, the rancid sampling, and the  
19 lack of statistical significance, they don't  
20 really give you any meaningful information on  
21 anything. This is -- this is a failed study, is  
22 what it is, in my opinion.
- 23 Q But you're not aware of any other study which  
24 contradicts this position?
- 25 A No.
- 26 Q In this paper? And you didn't consider it when  
27 you drafted your report?
- 28 A That's correct.
- 29 Q And you can't point to any publication in which  
30 the stress response that is outlined in your  
31 report is substantiated by any peer-reviewed human  
32 research?
- 33 A No.
- 34 Q Doctor, I'm showing you a chapter by Dr. Ross from  
35 his text that you had reviewed. You reviewed  
36 this, correct?
- 37 A The text?
- 38 Q Did you review this chapter?
- 39 A Most -- most -- no, not this chapter.
- 40 Q So you didn't review this chapter when you  
41 formulated your opinion, is that fair?
- 42 A That's fair.
- 43 Q And that's the Ross chapter in the Ross text that  
44 you've got beside you on your briefcase, fair?
- 45 A I scanned most of the chapters in that text, but  
46 this particular chapter, I don't think it was part  
47 of forming my opinion, no.

1 Q So this chapter -- this is Chapter 9 from the Ross  
2 text that we previously identified. It's entitled  
3 "Case Analysis of Restraint Deaths in Law  
4 Enforcement and Corrections" by Dr. Darrell L.  
5 Ross, correct?

6 A Correct.

7 Q If I can take you, sir, to page 145, please. This  
8 is what Dr. Ross is saying he's doing, under the  
9 "Methodology" heading:

10  
11 The present research provides an analysis of  
12 deaths in police or correctional custody.  
13 Previous research has not specifically  
14 included incidents occurring in detention  
15 facilities.

16  
17 Utilizing a content-analysis methodology, 145  
18 case reports of a sudden in-custody death  
19 after a violent restraint incident were  
20 examined.

21  
22 I've read that correctly, fair?

23 A Yes.

24 Q Then going down, Doctor, down the page one  
25 paragraph:

26  
27 Cases were considered for inclusion in the  
28 data set if they met the following definition  
29 adopted by Krosch et al, (26): --

30  
31 And they are, it's this.

32  
33 An unintentional death of an arrestee who  
34 exhibited violent and bizarre behaviour where  
35 physical force measures or equipment were  
36 used by the police to subdue the person.

37

38 And then:

39

40 The cases analyzed represent the following  
41 criteria...

42

43 And you will see then at the bottom of the page:

44

45 The objective of this analysis was to examine  
46 five research questions:

47

- 1                   1. What are the common decedent  
2                   demographics?  
3  
4                   2. What are the arrest circumstances  
5                   commonly associated with these deaths?  
6  
7                   3. What types of force measures are utilized  
8                   by the police in these arrests and, what  
9                   is the common location of death?

10  
11                   And then over the page to page 146:

- 12  
13                   4. What are common causes of deaths  
14                   attributed in these cases?  
15  
16                   5. What are the common risk factors and  
17                   descendant (sic) behaviours associated  
18                   with these deaths?

19  
20                   I've read that correctly?

21                   A     Yes.

22                   Q     You then see he's -- Dr. Ross then starts to  
23                   outline his findings, and I'm just going to touch  
24                   down briefly on the first table, those are the  
25                   "Decedent Characteristics". You'll see 145 is the  
26                   number of individuals involved. Firstly going to  
27                   survival time, 97 of those, or 67 percent of the  
28                   145 survived for less than an hour. Is that a  
29                   correct interpretation of that table?

30                   A     Yes.

31                   Q     And the median age of those persons is 33 years,  
32                   fair?

33                   A     Correct.

34                   Q     And then, Doctor, over to page 147, please. The  
35                   last line in -- and you'll see "Types of Drugs  
36                   Associated With the Death", and down to the last  
37                   sentence on that page:

38  
39                   Presence of any concentration of drugs was  
40                   absent in 45 cases.

41  
42                   Have I read that correctly?

43                   A     Hang on.

44                   Q  
45                   Presence of any concentration of drugs was  
46                   absent in 45 cases.

1 Have I read that correctly?

2 A We've got 149 people.

3 Q 145 people.

4 A 145, and 100 were on drugs, right?

5 Q Yes.

6 A Two-thirds, two out of three.

7 Q Yes. And I'm reading -- I'm reading the sentence  
8 on the last page of 147:

9

10 Presence of any concentration of drugs --

11

12 A But I'm reading Table 2.

13 Q Yes.

14 A The presence of drugs in 100 people.

15 Q Right. We'll come back -- we'll come to that in a  
16 second.

17 A Okay.

18 Q But let's stay on 147, please.

19

20 Presence of any concentration of drugs was  
21 absent in 45 cases.

22

23 Fair?

24 A Fair.

25 Q Okay. And then you see that on the table, right,  
26 on table 2 on the next page. It reflects -- now  
27 the number is reduced to 100, from 145.

28 A Right.

29 Q Fair? And then, Doctor, over to page 150, please,  
30 "Use of Force Measures", are you with me?

31 A Yes.

32 Q Okay. And then commencing at the bottom of that  
33 page, "Table 3" and I'll come back -- I'll come to  
34 that in a second:

35

36 Table 3 also shows the types of force  
37 measures police and detention officers used  
38 to control the subjects. All subjects were  
39 restrained with at least handcuffs after a  
40 violent struggle. In two-thirds of the  
41 incidents, leg restraints were also used.  
42 Empty-hand control techniques were attempted  
43 or used in each incident, but because of the  
44 violent struggle and strength of the  
45 individual, the police had to resort to other  
46 measures such as impact weapon/flashlight  
47 strikes, neck restraint, or taser. In the

1 cases involving the taser...

2

3 That's 30, and you can see that, Doctor, from  
4 Table 3, fair, the last line in --

5 A Yes.

6 Q -- Table 3, "Taser/stun gun 30", represents 21  
7 percent of the 145 cases, fair?

8 A Yes.

9 Q

10 ...the cause of death was determined to be  
11 unrelated to the use of the taser. There  
12 were 105 cases were an aerosol (pepper spray)  
13 was used. Autopsy reports revealed that the  
14 spray was a contributing factor in two  
15 deaths. The totals in Table 3 for force  
16 measures employed do not add up to 100% as  
17 the police utilized a combination of force  
18 measures in one incident. On the average,  
19 the force confrontation required four  
20 officers to subdue and restrain the  
21 individual --

22

23 Somewhat like this case.

24

25 -- ranging from three to six officers per  
26 incident. An additional restraining  
27 technique known as "hogtying" was used in 19%  
28 percent of the descendants (sic) because of  
29 the continued thrashing or kicking after the  
30 subject was handcuffed.

31

32 Have I read that correctly?

33 A Yes.

34 Q And then, Doctor, if I can take you over to page  
35 162, please, the third full paragraph on that  
36 page. "Third" -- are you with me?

37 A Yes.

38 Q

39 Third, a cardiac condition, particularly an  
40 enlarged heart,...

41

42 Would that be cardiomyopathy?

43 A It wouldn't have to be, no.

44 Q It could be though, right?

45 A Could be.

46 Q

47 ...was a significant risk factor associated

1 with custodial deaths. The mean heart weight  
2 of these decedents was 425 g. Diseased or  
3 enlarged hearts can be susceptible to sudden  
4 dysrhythmias when under physiological stress  
5 as occurs as occurs with violent struggle,  
6 drug toxicity, alcohol, and exhibited  
7 abnormal psychological states. Furthermore,  
8 psychological stress can induce fatal cardiac  
9 arrhythmias, particularly with vulnerable  
10 heart condition.  
11

12 Would you agree with that, Doctor?

13 A I think what they're implying here is a heart that  
14 weighs more than average. The 425, the mean heart  
15 weight of these was 425. They're talking about an  
16 enlarged, they're talking about a heavier heart, I  
17 believe.

18 Q The mean weight would have a range, fair?

19 A It would have -- it would have a range, but the  
20 mean --

21 Q Yes.

22 A The mean weight was 425. So I think what they're  
23 discussing in a large heart is a heavy -- a heavy  
24 heart.

25 Q Okay. You would agree with the statement?

26 A Yes.

27 Q And then, Doctor, over the page to 163, please.  
28 Second full -- or first full paragraph, starting  
29 with "The causes and" -- are you with me?

30 A Yes.

31 Q

32 The causes and contributory factors of these  
33 custodial deaths are varied and complex.  
34 Although there are numerous factors that must  
35 be considered prior to determining the cause  
36 or contributing elements of death, this  
37 research suggests there is strong evidence  
38 that drug abuse, components of psychosis, and  
39 the condition of the internal organs,  
40 particularly the heart, play significant  
41 roles in an unexpected custodial death. A  
42 detailed investigation must be performed and  
43 a thorough autopsy must be conducted that  
44 analyzes the totality of a person's history  
45 and the incident facts. In determining the  
46 cause and manner of death, the medical  
47 examiner is encouraged to analyze all of the

1                   circumstantial data, forensic information,  
2                   and all other available information  
3                   objectively.

4  
5                   Would you agree with that, Doctor?

6           A       Yes.  Mr.  --

7           Q       And is this the same --

8           A       Am I allowed to make some comments about this  
9                   chapter, or...

10          THE COMMISSIONER:  Yes, go ahead.

11          A       Thank you.  I'm just reading through this chapter  
12                   as it's being presented to me, but there's a  
13                   couple of issues here that I'd like to bring up,  
14                   which were kind of glossed over.

15                   The sample size is 145, but the inclusion  
16                   criteria are those that exhibited violent and  
17                   bizarre behaviour.  That's on page 145.  So the  
18                   real question of Mr. Dziekanski, does he fit into  
19                   this group or not, was -- I'm not sure he would be  
20                   included in this study, so this would be an  
21                   inappropriate chapter to actually review, violent  
22                   behaviour being one of the inclusion criteria.

23                   The second thing I'd like to point out is  
24                   that when you look at the characteristics, what  
25                   was glossed over is that most of these people of  
26                   the 145, 100 of them were high on drugs.  Many of  
27                   the others, I'm trying to see what other  
28                   characteristics they had, would have had other  
29                   problems that Mr. Dziekanski didn't have, and I  
30                   think what's most telling actually, if you  
31                   actually read the cases that are presented by  
32                   Darrell Ross in his chapter, you'll -- and then  
33                   you ask yourself, do these cases sound in any way  
34                   like Mr. Dziekanski?  So here's a 19-year-old  
35                   White man who consumed marihuana, Ritalin and a  
36                   bunch of stuff.  He was running through the  
37                   neighbourhood, violently fought with the two  
38                   police.  Case 2 is a 37-year-old White male who  
39                   fought five police officers and sent three of them  
40                   to the hospital.  Case 3, a call to individuals  
41                   fighting in a park, one became violent and fought  
42                   with the police, and so on.  I don't really find  
43                   this chapter, you know, Case 10 is a  
44                   schizophrenic.  I'm not sure this chapter is  
45                   really describing what we're dealing with Mr.  
46                   Dziekanski.

47

1 MR. NEAVE:

2 Q I'm not suggesting it does. I'm suggesting simply  
3 this. You didn't review it when you did your  
4 report and it deals with 30 Taser cases out of 145  
5 and makes some comments with respect to the manner  
6 in which those are to be assessed. Is that fair?

7 A The only comment here is that they, in this  
8 particular thing, they didn't find Taser  
9 responsible for the cause of death.

10 Q Yes.

11 A But the circumstances are very different. The  
12 subject population, it seems to me, are very  
13 different.

14 Q And that all available information is to be  
15 examined objectively. Fair?

16 A Yes.

17 MR. NEAVE: Mr. Commissioner, I believe this should be  
18 marked, as well.

19 THE COMMISSIONER: Well, yes, it will be marked, but as  
20 I cautioned before, some of the material that is  
21 being marked will have a somewhat limited view  
22 purpose, but it will be given an exhibit.

23 MR. NEAVE: Thank you, Mr. Commissioner, I appreciate  
24 that.

25 THE REGISTRAR: It will be marked as Exhibit 151.

26

27 EXHIBIT 151: Item entitled "Case Analysis of  
28 Restraint Deaths in Law Enforcement and  
29 Corrections" by Darrell L. Ross

30

31 MR. NEAVE:

32 Q And I just want to clarify, Doctor, this Dr. Ross  
33 is the same Dr. Ross that you did refer to, I  
34 believe, on page 12 of your report, is that fair?

35 A I referred to the textbook, yes.

36 Q Thank you. Doctor, I'm going to show you a paper  
37 published by Chris Butler from the Calgary Police  
38 Department along with Christine Hall. This paper  
39 was published as an article in a periodical  
40 entitled *Law Enforcement Executive Forum* in 2008.  
41 It's entitled "Police/Public Interaction:  
42 Arrests, Use of Force by Police, and Resulting  
43 Injuries to Subjects and Officers - A Description  
44 of Risk in One Major Canadian City", and that city  
45 is Calgary.

46 A Yes.

47 Q You're familiar with Dr. Hall and work that she is

1           doing with excited delirium, correct?

2       A     Yes.

3       Q     And you will see, Doctor -- did you consider this  
4           report when you drafted your opinion?

5       A     No, I haven't seen it before.

6       Q     This is published in 2008.

7       A     In a *Law Enforcement Executive Forum*?

8       Q     Yes.

9       A     I'm not aware of it.

10      Q     Okay. You didn't see the media attention about  
11           this article?

12      A     No.

13      Q     She -- the author starts on the first page:

14

15           The controversy surrounding the temporal  
16           association of subject death in custody with  
17           the use of the conducted energy weapon (CEW)  
18           by law enforcement officers has identified  
19           the critical need for research to document  
20           the operational risk profile of use of force  
21           modalities, including the CEW.

22

23           You would agree with that, fair?

24      A     Where are you right now?

25      Q     The first page under the authors' names.

26      A     Yes.

27      Q     Page 139.

28      A     Yeah, I agree with that.

29      Q     You would also agree -- well, let me ask you this:

30

31           While several police agencies and independent  
32           research bodies in the United States have  
33           released information that suggests that the  
34           appropriate use of the CEW reduces officer  
35           and subject injuries --

36

37           And there's a bunch of references that I'm not --  
38           I'm not going to read out loud.

39

40           -- there is no epidemiological research that  
41           either supports or refutes this conclusion  
42           within the Canadian policing experience.

43

44           Is that fair?

45      A     Yeah, I think what's missing in that comment is  
46           independent research.

47      Q     Okay.

- 1 A I think there's research going on, but I'm not  
2 sure it's independent.
- 3 Q All right. And that's epidemiological research?
- 4 A I think there's some stuff coming out of some of  
5 the police agencies. There's some, I think Dr.  
6 Bozeman did a study.
- 7 Q Yeah, I'm going to take you to Bozeman.
- 8 A Hmm?
- 9 Q I'm going to take you to Bozeman's in a minute.
- 10 A Yeah.
- 11 Q Okay.
- 12 A But there comes a question of how much population  
13 based or controlled studies or actually  
14 independent research or versus those -- opposed to  
15 those that are supported by industry.
- 16 Q Yes. So you would agree to the extent, if we were  
17 to include within the last line "there is no  
18 independent research".
- 19 A Yes.
- 20 Q Is that a fair characterization of your position?
- 21 A Yes. I think that is one of the issues, one of  
22 the problems.
- 23 Q And, Doctor, you will see, if I can now take you  
24 over to page 144, please, under "Arrest and Use of  
25 Force", are you with me?
- 26 A Yes.
- 27 Q
- 28 In the two-year study period, general  
29 police/public interactions were extremely  
30 unlikely to result in any use of force. In  
31 827,022 interactions, there were 562 use of  
32 force events, or 0.07% of all interactions.
- 33
- 34 Fair? I've read that correctly?
- 35 A Yes.
- 36 Q And then, Doctor, over to page 146, please. This  
37 is the breakdown of the -- of conducted energy  
38 weapons. Are you with me?
- 39 A I'm just trying to finish off this Figure 2, the  
40 condition of the subjects on arrest. But so where  
41 are you going now?
- 42 Q I'm on page 146.
- 43 A Yes.
- 44 Q "Conducted Energy Weapons" is the heading. Do you  
45 see that on the top of the page?
- 46 A Yes.
- 47 Q Under Table 1.

1                   Conducted Energy Weapons

2

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                  During the 562 use of force related arrests,  
                  officers utilized CEWs 48.2% --

                  And the number is 271.

                  -- of the time. The subject injury profile  
                  following the application of the conducted  
                  energy device is depicted in Figure 3.

                  And Figure 3 then sets out a pie chart with  
                  "None", so no injuries in 44.6%, "Minor" in 42.4,  
                  "Minor-outpatient" in 11.9, "Hospitalization",  
                  1.1, and "Fatal", 0.0; is that correct?

A                Yes.

Q                Now, Doctor, if I can now take you to the  
                  "Discussion" portion on 151, please. The authors  
                  conclude as follows:

                  The commonly held belief that the conducted  
                  energy weapon carries a significant risk of  
                  injury or death for the population of  
                  interest is not supported by the data.  
                  Within the force modality framework most  
                  commonly available to police officers, the  
                  CEW was less injurious than either the baton  
                  or empty hand physical control.

                  Have I read that correctly?

A                Yes.

Q                Do you agree with that?

A                No.

Q                Based on this data?

A                No.

MR. NEAVE:     May that be filed, please --

A                No, I don't agree with it.

MR. NEAVE:     I understand your position. May the  
                  document --

A                Can I -- can I explain?

THE COMMISSIONER: Yes, please.

A                What the author is, I think, suggesting is that  
                  the CEW is -- is safe, and this is to the subject,  
                  right? So you have a sample size of -- and I'm  
                  trying to catch up here very quickly with you, but  
                  what's -- how many CEW applications were there?

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(cont'd)

1 MR. NEAVE:

2 Q 562, I believe out of --

3 A Hmm?

4 Q If you go back, Doctor -- some assistance, if you  
5 go back to 146, during the 562 use of force  
6 related arrests, officers used the CEW 271 times.

7 A So it's -- we have a sample size of 271 that  
8 received CEWs.

9 Q That's right.

10 A So if the event rate was say 1:500, 1:1000, let's  
11 say they were dying at that rate, let's say the  
12 relative risk was 1:2000, 1:1000, I think as a  
13 society we'd still find that very -- we would not  
14 accept -- certainly when you talk about airlines  
15 and other areas, what society's tolerance for  
16 sudden deaths is, if they're preventable, we would  
17 be talking rates much higher than 1:272. So  
18 therefore I don't think the numbers that these  
19 authors have come up with have enough power really  
20 to make those conclusions that they're suggesting.

21 I guess the other issue, of course, is I  
22 don't believe this has been published in a peer-  
23 reviewed journal, so I haven't had enough time to  
24 really go over it in detail, but I'd be a lot more  
25 comfortable with what they're saying if -- if this  
26 -- if they had gone on to put this to a peer-  
27 reviewed journal.

28 Q Are you aware of any studies that contradict the  
29 findings of Mr. Butler and Dr. Hall, that are --

30 A No.

31 Q -- set out in this periodical?

32 A No.

33 MR. NEAVE: May it be marked, please, Mr. Commissioner.

34 THE COMMISSIONER: Yes.

35 THE REGISTRAR: Exhibit number 152.

36

37 EXHIBIT 152: Item entitled "Police/Public  
38 Interaction: Arrests, Use of Force by  
39 Police, and Resulting Injuries to Subjects  
40 and Officers - A Description of Risk in One  
41 Major Canadian City" by C. Butler and C. Hall  
42

43 MR. NEAVE: May the witness be shown Exhibit 139,  
44 please.

45 Q And, Doctor, before I turn to that exhibit, I just  
46 want to take you back briefly to the paper we just  
47 looked at, the Butler and Hall paper. You would

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Cross-exam by Mr. Neave (for TASER International)

(cont'd)

- 1 agree with me that there is no causal relationship  
2 between sudden death during restraint and Taser  
3 exposure that can be established by that study,  
4 fair?
- 5 A Correct.
- 6 Q Now, Doctor, you referred to the Bozeman piece  
7 before and his study. I'm going to -- this is  
8 Exhibit 139, already marked in these proceedings.  
9 This is a study entitled "Safety and Injury  
10 Profile of Conducted Energy Weapons Used by Law  
11 Enforcement Officers Against Criminal Suspects".  
12 This is by Dr. Bozeman. You're aware of his work,  
13 I expect?
- 14 A Yes.
- 15 Q He's done a study, in this case, of a multi-  
16 centre, observational trial to track consecutive  
17 case series on all conducted electrical weapons  
18 against criminal suspects at six U.S. law  
19 enforcement agencies. And for your ease of  
20 reference, Mr. Commissioner, I'm in the "Methods",  
21 in the block on the first page, on page 1 of the  
22 periodical. This is -- and, Doctor, you would  
23 agree, this is *Annals of Emergency Medicine*?
- 24 A Yes.
- 25 Q And that is a peer-reviewed paper, publication?
- 26 A Yes.
- 27 Q What are you looking at, Doctor?
- 28 A Hmm?
- 29 Q What are you looking at?
- 30 A I -- I've got the Bozeman study here and some  
31 notes, so...
- 32 Q Well, I'd like you to stay with the article,  
33 please.
- 34 A Okay.
- 35 THE COMMISSIONER: No, excuse me. Doctor, you can look  
36 at whatever you wish.
- 37 A Thank you.
- 38 MR. NEAVE:
- 39 Q You made notes on the Bozeman paper?
- 40 A Yes.
- 41 Q May I see them?
- 42 This is an e-mail to Mr. Vertlieb.
- 43 A That's correct.
- 44 Q On June 25th, 2008.
- 45 A That's correct.
- 46 Q And it reads as follows:
- 47

1 Art, there are a number --

2

3 And we're talking about the Bozeman paper, this  
4 paper, are we; is that correct?

5 A I think it was a presentation at that time.

6 Q Okay.

7 A I was asked to comment on the presentation.

8 Q [As read]:

9

10 Art, there a number of issues with this  
11 presentation, including calling it a "trial",  
12 which is misleading, as the study is not a  
13 trial and there is no control group. Obvious  
14 problems would occur --

15

16 Sorry.

17

18 -- would include how you define what is mild,  
19 when you don't have data on who fell and how  
20 hard, and when the agencies had control of  
21 the records.

22

23 The next paragraph [As read]:

24

25 More importantly, one can play with the  
26 numbers a bit and get a very different  
27 picture of what was presented. Of the 1,760  
28 discharges to 962 "participants", only 360  
29 were to the chest and a few (40) to the  
30 genital, face, neck and head. A theory  
31 presented earlier indicates that the real  
32 risk may be more related to chest  
33 "applications" and sensitive areas. Then we  
34 are really only talking about a small sample  
35 size of approximately only 400 discharges.  
36 Further, it is not the number of discharges  
37 that determines the sample size, but the  
38 number of subjects. The estimate is most  
39 likely close to 225 subjects, given their  
40 data. This is a rough guess using their 1.6  
41 to 1.8 shots average per participant (actual  
42 data should have been presented, but wasn't).  
43 Now, this was both stun and probe, so if we  
44 are interested only in probe, the adjusted  
45 number could be as low as 158 subject.  
46 Similarly they ignored the two deaths, which  
47 in my mind is inappropriate. A cardinal rule

1 is to usually include all adverse outcomes as  
2 we are never sure of the cause. Then we  
3 can't compare the outcomes to a comparison  
4 group to see who is possibly doing better.  
5 So the real comparison may be in the order of  
6 5 in 158 or approximately 3.2%, which appears  
7 to be very significant if the device is used  
8 a lot. It would be nice to know of the five  
9 with significant injuries how many were due  
10 to stun and how many were due to probe.  
11 Again the presentation does not supply this  
12 info. We also need to know the average  
13 number of discharges in the chest to the  
14 sensitive groups. It may be even worse if  
15 they received more than an average of 1.8  
16 discharges in terms of a small denominator.  
17 In summary, a concern is the possible loading  
18 of the denominator with those at low risk of  
19 a bad event and lowering the numerator to  
20 present an unrealistic estimate of risk.

21  
22 And that was sent on June 28th, 2008. Have I  
23 summarized your recollection of the document?

24 A Yes.

25 Q And those are your criticisms of the document?

26 A They were my thoughts at the time. It's been a  
27 while.

28 Q You reviewed this periodical in preparing your  
29 report, correct?

30 A By Bozeman?

31 Q Yes.

32 A I looked at it, yes.

33 Q And in this report, in the "Results" section, I'm  
34 still back on page 1, Dr. Bozeman in this peer-  
35 reviewed, and I take it this is the *Annals of*  
36 *Emergency Medicine*, you would categorize as one of  
37 the Class A medical journals, fair?

38 A It's a -- it's a good journal, yes.

39 Q Peer-reviewed?

40 A Yeah, it's a peer-reviewed journal.

41 Q You're not on the peer review committee, are you?

42 A Of this?

43 Q Yes.

44 A No.

45 Q The "Results" are as follows:

46

47 Conducted electrical weapons were used

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Cross-exam by Mr. Neave (for TASER International)

(cont'd)

1           against 1,201 subjects during 36 months. One  
2           thousand one hundred twenty-five subjects  
3           (94%) were men; the median age was 30 years  
4           (range 13 to 80 years). Mild or no injuries  
5           were observed after conducted electrical  
6           weapon use in 1,198 subjects --  
7

8           And he then provides:  
9

10           -- (99.75; 95% confidence interval 99.3% to  
11           99.9%). Of mild injuries, 83% were  
12           superficial puncture wounds from conducted  
13           electrical weapon probes. Significant  
14           injuries occurred in 3 subjects --  
15

16           And then he provides a percentage and confidence  
17           intervals around that:  
18

19           -- including two intercranial injuries from  
20           falls and 1 case of rhabdomyolysis. Two  
21           subjects died in police custody; medical  
22           examiners did not find conducted electrical  
23           weapon use to be causal or contributor in  
24           either case.  
25

26           Have I read that correctly?

27           A     Yes, you have.

28           Q     And those are -- those are the results in this  
29           peer-reviewed periodical, fair?

30           A     That's correct.

31           Q     And if I can go to page 3, Doctor, on the -- under  
32           the "Methods of Measurement" heading, you will see  
33           on the -- and I'm going to take you to the left-  
34           hand column, second-last paragraph on that page,  
35           "A study steering committee", are you with me?

36           A     Yes.

37           Q

38           A study steering committee composed of  
39           medical and law enforcement experts served as  
40           a data and safety monitoring committee during  
41           the course of the study. The committee  
42           advised investigators on study design and  
43           site selection. At 2 predefined enrolment  
44           intervals, the committee reviewed results of  
45           interim analyses to assess overall safety and  
46           consider early study termination if excessive  
47           risk was demonstrated.

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Cross-exam by Mr. Neave (for TASER International)

(cont'd)

1           Then:

2

3

4

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8

9

A       Yes.

10

Q       And then with respect to the two death cases, if I  
11 can take you to page 5, please, the right-hand  
12 column, last paragraph:

13

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40

41

42

I've read that correctly?

43

A       Yes.

44

Q       And then, Doctor, over to page 7, with respect to  
45 the in-custody death cases in this case, Dr.  
46 Bozeman and the other authors say this in the  
47 first full paragraph on the left-hand column:

1 Two in-custody deaths occurred after  
2 conducted electrical weapon exposure among  
3 the study cohort. These were judged to be  
4 unrelated to conducted electrical weapon  
5 exposure, excluding these cases from analysis  
6 according to a *priori* design decisions. Both  
7 subjects actively resisted arrest both before  
8 and after conducted electrical weapon use,  
9 and physical collapse occurred at least 5 and  
10 20 minutes after conducted electrical weapon  
11 exposure, making electrically induced fatal  
12 dysrhythmias unlikely. Both of these cases  
13 are consistent with previous reports of  
14 unexpected deaths in police custody, which  
15 commonly involve bizarre or combative  
16 behaviour, psychiatric disease, heart disease  
17 or drug use.

18  
19 I've read that correctly?

20 A Yes.

21 Q And then over the page, Doctor, to page 8, in the  
22 column on the left. First full sentence in that  
23 paragraph, "No study", are you with me?  
24

25 No study has demonstrated a pathophysiologic  
26 mechanism or effect that would account for  
27 delayed deaths minutes to hours after --  
28

29 A Where are you now, sorry?

30 Q I'm on page 8, left-hand column.

31 A Right.

32 Q Near the top, first full sentence.

33 A Oh, there, okay.

34 Q "No study", are you with me now, Doctor?

35 A Yes.

36 Q  
37 No study has demonstrated a pathophysiologic  
38 mechanism or effect that would account for  
39 delayed deaths minutes to hours after  
40 conducted electrical weapon exposure.  
41 Findings from independent investigations have  
42 been concordant with those performed with  
43 industry support. Collectively these data  
44 are broadly reassuring and constitute the  
45 current best understanding of the human  
46 physiologic effects of conducted electrical  
47 weapons.

1 Have I read that correctly?

2 A Yes.

3 Q Would you agree with that?

4 A It says "Findings from independent investigations"  
5 but it doesn't give any references. So until I  
6 had the references, how could I agree to that?

7 Q The -- are you aware of any studies in peer-  
8 reviewed literature which would be opposed to that  
9 finding?

10 A No, but what you're saying, what you're wanting me  
11 to agree to, is that this author, Dr. Bozeman, who  
12 I don't think is entirely doing independent  
13 research here, is making a claim that finding some  
14 investigations are concordant with the industry in  
15 terms of -- of not demonstrating a  
16 pathophysiological mechanism, and that's unclear  
17 to me.

18 Q On what basis do you assert that Dr. Bozeman is  
19 not doing independent research?

20 A Well, I'm not asserting that.

21 Q Well, you said that.

22 THE COMMISSIONER: No, he didn't say that.

23 MR. NEAVE:

24 Q Do you have any basis to suggest that Dr. Bozeman  
25 is not an independent researcher?

26 A No.

27 Q And then the next paragraph:

28

29 The possibility of direct cardiac effects is  
30 a common concern with conducted electrical  
31 weapons. Experimental studies in human  
32 volunteers have found no cardiac  
33 dysrhythmias, ischemia or necrosis after  
34 standard (5-second)\_or prolonged (15-second)  
35 conducted electrical weapon exposure.

36

37 Have I read that correctly?

38 A Yes.

39 Q And you've got no -- can you point me to any  
40 articles which dispute that that are peer-reviewed  
41 human research articles?

42 A No.

43 Q And then at the bottom of the -- and you  
44 considered this paper when you drafted your  
45 opinion, fair?

46 A Yes.

47 Q And you would agree with me that there is -- that

- 1 no causal relationship on the data in this paper  
2 can be established between sudden death during  
3 restraint and Taser exposure?
- 4 A Where are you reading now?
- 5 Q I'm asking, simply asking a question.
- 6 A Say it again?
- 7 Q Would you agree with me, Doctor, that based on the  
8 data in this peer-reviewed paper there is no -- no  
9 causal relationship between the Taser device  
10 deployment and sudden death?
- 11 A I don't think this study, as I understand it, has  
12 ruled that out.
- 13 Q Based on the data in this paper --
- 14 A This is a case series, which is a very weak  
15 design. I think there's a bunch of issues that I  
16 mentioned when I reviewed it. So it hasn't -- it  
17 hasn't ruled in anything, but I don't think it's  
18 of sufficient size or design to rule out risk due  
19 to Taser.
- 20 Q You've agreed with me, I think, when I take you  
21 back to page 8, that:
- 22
- 23 No study has demonstrated a pathophysiologic  
24 mechanism or effect that would account for  
25 delayed deaths minutes to hours after  
26 conducted electrical weapon exposure.
- 27
- 28 Fair?
- 29 A Yes.
- 30 Q And you'd agree with me, Doctor, that in this  
31 study there are no deaths attributed to the  
32 deployment of the Taser on a sample of 1,200  
33 reviewed files?
- 34 A Well, one of the issues in research design is a  
35 thing called under intention to treat. So if this  
36 was a true trial, you would have to include the  
37 two deaths in the Taser group. They got tasered.  
38 So in that sense, when he says a *priori* they  
39 decided who not to include, there's no description  
40 of what that criteria were. So I understand your  
41 point, that mostly likely those two deaths were  
42 not Taser-related, from the description --
- 43 Q Well, there's no -- there's indeed the paper is  
44 quite clear, they're not Taser-related.
- 45 A Research design is quite clear, under intention to  
46 treat they should be included in the outcomes, I  
47 mean that's in basic textbooks.

1 Q Dr. Bozeman says this:

2  
3 Two subjects died in police custody; medical  
4 examiners did not find conducted electrical  
5 weapon use to be causal or contributory in  
6 either case.

7  
8 Have I read that correctly?

9 A That's correct.

10 Q Thank you.

11 A If I could make a comment on this issue. One of  
12 the reasons we argue so hard for blinded  
13 controlled trials with comparison groups is for  
14 known and unknown treatment effects. I've been  
15 involved in a number of research studies, some of  
16 them involving up to 38,000 subjects, where all  
17 the basic science came along and said it's going  
18 to happen a certain way, and then when we actually  
19 randomized people to Group A and Group B and  
20 followed them for five to ten years, we found out  
21 that, no, there was -- we didn't quite understand  
22 the mechanism, but when we under intention to  
23 treat we found out that, you know, the group we  
24 thought would do well didn't do as well as they  
25 did. So in this sense, if you're talking about  
26 high-quality research design and how you should  
27 interpret them. under intention to treat the rule  
28 is those people should be included in your -- as a  
29 fatal event, regardless of the description from  
30 him.

31 Q And Dr. Bozeman's paper is published in a Class A  
32 peer-reviewed medical journal, fair?

33 A A peer-reviewed journal, yes.

34 Q Well, we described it previously as one of the  
35 Class A ones, you agreed with me on that point.

36 A You said Class A and I agreed.

37 Q Thank you. Doctor, just -- and I don't think you  
38 are, but if you've got the actual exhibit before  
39 you, I'd request that you not mark with a pen or  
40 anything.

41 A Sorry?

42 Q Don't -- or I would request that you don't mark  
43 any of the papers I'm putting to you.

44 A Okay.

45 Q Because others will likely look at them. Thank  
46 you.

47 Now, Doctor, I'm showing you a paper, it's a

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Cross-exam by Mr. Neave (for TASER International)

(cont'd)

1 paper entitled "Conductive Electrical Devices: a  
2 Prospective Population-Based Study on the Medical  
3 Safety of Law Enforcement Use". It's a paper by  
4 Dr. Eastman.

5 A Yes.

6 Q And it was published in the *Journal of Trauma*.  
7 Are you familiar with that journal, Doctor?

8 A I've heard of it, yes.

9 Q And this publication date, it was published in  
10 2008, correct?

11 A Yes.

12 Q Now, you can see in the "Methods", or, well, let's  
13 start at the "Background". The background was"

14

15 To examine police compliance with policies  
16 for the proper use of conductive electrical  
17 devices (CEDs) and, in turn, track any  
18 associated medical events following CED  
19 application.

20

21 Fair?

22 A Yes.

23 Q It's a 15-month study, correct?

24 A Yes.

25 Q You can see that in the "Methods". And it  
26 involves 426 consecutive CED applications between  
27 November 2004 and January 2006, correct?

28 A Yes.

29 Q I'm in the "Results" portion on the top of page  
30 1567.

31 A Yes.

32 Q And then you will see:

33

34 No suspect required further treatment except  
35 one who was later found to have severe toxic  
36 hyperthermia and how died within 2 hours of  
37 activation despite rapid on-scene  
38 intervention.

39

40 Correct?

41 A Yes.

42 Q Did you consider this paper, Doctor, when you  
43 drafted your opinion?

44 A I did review it.

45 Q And you'll see, Doctor, onto page 1569 under the  
46 "Results", on the left-hand column at the bottom  
47 of the page:

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(cont'd)

1                   During the inaugural 15-month period  
2                   (November 1, 2004 to January 13, 2006) of the  
3                   CED program, there were 426 consecutive field  
4                   applications of the Taser X26 by DPD  
5                   officers.  
6

7           A       Yes.

8           Q       And this is in Dallas. And then, Doctor, over to  
9                   page 1570:

10                           A single death (1 of 426 cases)...

11                           Are you with me?

12           A       Yes.

13           Q       ...occurred within the 12-hour observation  
14                   period. In this case, officers responded to  
15                   a disturbance call where they found a 23-  
16                   year-old male, wearing only underwear, waving  
17                   a knife, and yelling incoherently. As the  
18                   subject advanced towards officers with the  
19                   knife, they deployed the CED according to  
20                   policy and delivered two 5-second bursts.  
21                   The subject was then placed into custody and  
22                   restrained on his back with DFR paramedics  
23                   already standing by. During subsequent  
24                   patient transfer from the ground to the  
25                   ambulance, the subject became unresponsive,  
26                   and EMS rapidly transported the patient to  
27                   the closest hospital, treating him en route  
28                   with advanced life-support techniques. Upon  
29                   hospital arrival, the subject was noted to  
30                   have a core temperature of 107.4°...

31                           That's pretty high, right?

32           A       That's high.

33           Q       That's classic excited delirium kind of  
34                   temperature, isn't it?

35           A       That's one of the symptoms associated with excited  
36                   delirium is a very --

37           Q       Yes.

38           A       -- high temperature, yes.

39           Q       And indeed disrobing, in the facts, that's another  
40                   factor, fair?

41           A       I would agree.

42           Q       And yelling incoherently, that would be another  
43                   factor, fair?

44

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Cross-exam by Mr. Neave (for TASER International)

(cont'd)

1 A Yes.

2 Q And he had -- so he has a temperature of 107.4°  
3 Centigrade (sic). Normal is what, 98.6?

4 A Yes.

5 Q

6 ...and deteriorating hemodynamics. He died  
7 shortly after arrival, and the medical  
8 examiner subsequently reported very high  
9 levels of cocaine and its metabolites in the  
10 patient's bloodstream.

11

12 A Yes.

13 Q And those factors would be consistent with  
14 something called cocaine psychosis?

15 A High on cocaine, yes.

16 Q Yes. And then under the "Discussion":

17

18 The current study helps to corroborate the  
19 safety profile for CED use when a prescribed  
20 policy is followed. Considering that the  
21 weapons were not used capriciously and were  
22 only used for justifiable situations, the  
23 extremely low rate of morbidity and mortality  
24 encountered over hundreds of uses was  
25 striking, particularly when consider that it  
26 avoided the traditional use of otherwise  
27 deadly force in a significant percentage of  
28 cases.

29 Although one death did occur, it seems  
30 evident that the patient would have died  
31 regardless of the CED activation. First of  
32 all, without the availability of the CED, the  
33 suspect involved might have died simply  
34 because the officers under attack with a  
35 lethal weapon and may have likely used deadly  
36 force (firearms) as they would have in a more  
37 traditional scenario. Second, and most  
38 relevant to this discussion, the medical  
39 examiner detected deadly levels of cocaine in  
40 the suspect's bloodstream.

41

42 Have I read that correctly?

43 A Yes.

44 Q And then -- and then, Doctor, on the -- staying on  
45 page 1570 to the right-hand column, the last full  
46 paragraph on the page:

47

1           Although police officers are faced with  
2           unprecedented violence and resistance, police  
3           use of force has been placed under scrutiny  
4           for decades, particularly after racial and  
5           political demonstrations of the 1960s and  
6           subsequent televised arrests in which police  
7           were considered to have utilized overzealous  
8           force. Therefore, as new tools have entered  
9           the law enforcement arsenal, they have been  
10          scrutinized in most cases by both the public  
11          (generally relatives of those dying in  
12          custody) and the media at large acting as  
13          public advocates. Recognizing that the  
14          circumstances of the one death in this study,  
15          which was clearly attributable to lethal  
16          toxic syndrome, seems to be similar to other  
17          communities' reported experience with deaths  
18          following CED activation, there has been  
19          little concern and attention raised in the  
20          medical community. Also, because of the  
21          extremely infrequent incidence of such  
22          mishaps, such population-based, aggregate  
23          medical data have not been retrieved in most  
24          municipalities on a routine, methodical  
25          basis. Nevertheless, the value and utility  
26          of such data are emphasized by the findings  
27          from this formal registry that document both  
28          the overall safety of appropriate CED use and  
29          better define the cause of death.

30

31           Did I read that correctly, Doctor?

32          A     You read that correctly.

33          Q     And do you agree with those findings, Doctor?

34          A     If I could just comment, this seems to be  
35          something that's a repetitive thing, that what's  
36          missing in these studies, which I've said before,  
37          but I want to say again here, is that when we were  
38          doing, looking at rare events, and obviously these  
39          deaths are relatively rare events, to actually  
40          figure out what's going on, you need large sample  
41          sizes. The trial that I was involved in, as I  
42          said, was 38,000 people. So there's an order of  
43          size that you -- that you need, that these small  
44          studies, they're, you know, 426 -- is that sample  
45          size here? It's small, probably not large enough  
46          to really -- really support the claims that are  
47          being made in these articles. There's a lot of

1 claims that are being stated by the authors, but  
2 the actual size of the studies, I'm not sure  
3 justifies the claims.

4 Secondly, when I read this originally, one of  
5 the things that came to mind is the real need for  
6 independent research, because what you need to do  
7 is get control of the reporting and that requires  
8 an independent kind of a study. You can't have  
9 sort of the -- the people who are using the Taser  
10 with no sort of checks and balances about the  
11 reporting mechanism.

12 So I think that's worthwhile, rather than  
13 just agreeing with you wholeheartedly about  
14 everything that's said in there, I think those two  
15 provisos is that I'm worried about the sample size  
16 to be able to draw these conclusions, and I'm  
17 worried about the -- some of the quality of the  
18 studies that are coming out, especially what they  
19 do to controlling reporting.

20 Q You'd agree with me, Doctor, that there's no study  
21 of this sort that you're talking about which  
22 disputes these findings?

23 A That's correct.

24 Q And indeed what we have in the papers that I've  
25 put to you are a sample of a number of small  
26 studies, which you say lack power, there's a  
27 number of small studies that are conducted  
28 independently from each other that are reaching  
29 the same conclusion, fair?

30 A They are, yeah. Yeah, it's a bit worrisome,  
31 actually. There's an awful lot of small sample  
32 size research going on here that's highly  
33 underpowered, and the way the designs are set up,  
34 it's very difficult to ever do a systematic review  
35 and amalgamate the data in any meaningful fashion,  
36 which really argues for more cohesive research  
37 effort to find meaningful data.

38 Q And with respect to this study, the Eastman study  
39 that we've just looked at, the findings in that  
40 study don't support the contention of a temporal  
41 relationship between Taser deployment and death?

42 A No, and they don't rule it out, either. They  
43 don't really say much about it.

44 Q Well, except in the 426 applications the one death  
45 was attributed to a cocaine overdose, fair?

46 A That's -- that's true.

47 Q So in this study there are no deaths that are

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(cont'd)

- 1 attributed either by direct contribution or  
2 causally associated with a death?
- 3 A But again, if your sample size is below your event  
4 rate, you're not going to see it.
- 5 Q All right. I understand your point.
- 6 A And therefore you can't draw any conclusions one  
7 way or the other. You need -- you need a sample  
8 size of, you know, ten times this to be able to  
9 make any comment about how safe or ruling out the  
10 Taser as a cause. But in this 400, yes, you're  
11 right.
- 12 Q Thank you. May the witness please be shown  
13 Exhibit 141D. Now, Doctor, I'm showing you the  
14 abstract and not the full paper, which I  
15 understand has now been published by Dr. Ho et al,  
16 "Echocardiographic Evaluation of Human  
17 Transcutaneous TASER Application Along the Cardiac  
18 Axis".
- 19 A That's correct.
- 20 Q Have you see this before?
- 21 A Yes.
- 22 Q And in this finding you'll agree that Dr. Ho  
23 concludes that:
- 24
- 25 We were unable to reproduce the concerning  
26 tachycardia in humans that some researchers  
27 in this subject area have found using animal  
28 studies. A 15 second CEW application on  
29 human volunteers did not demonstrate any  
30 evidence of a dangerous arrhythmia.
- 31
- 32 Correct?
- 33 A Yes. But I would have to know how it was applied.  
34 First of all, you've got healthy volunteers. They  
35 have been -- were they standing and supported, or  
36 were they lying on a mat? They weren't -- I'm not  
37 sure if they were stressed or not. This is just  
38 not mimicking real world situations. But we know  
39 from some of the case reports that capture of the  
40 heart has occurred. We've seen that on pacemakers  
41 and on implantable defibrillators. So again --
- 42 Q Are you familiar with --
- 43 A -- it's always the same. You have 44 subjects in  
44 an ideal situation, it's not going to tell you, in  
45 my opinion, what you really need to know about  
46 what's going on in real world situations.
- 47 Q So in your view Dr. Ho's work in this area does

- 1 not conflict with your finding with respect to the  
2 physiological effects of the Taser, which you  
3 opine in your opinion, fair?
- 4 A I think Dr. Ho's doing very small sample size  
5 studies in a very special group of people, healthy  
6 volunteers, usually police officers, under a very  
7 controlled situation, and I'm not sure how you can  
8 extrapolate that out to what's going on in the  
9 real world.
- 10 Q Well, in this case, there's no evidence that there  
11 was a dangerous arrhythmia produced as a result of  
12 a 15-second CEW discharge, fair?
- 13 A In healthy volunteers who are tasered and under  
14 ideal study conditions, yes.
- 15 Q And that finding was an application of the Taser  
16 device across or along the cardiac axis, fair?
- 17 A Is this the study where we're not sure how the --  
18 these were electrodes placed on the chest.  
19 They're not -- there was no skin penetration.
- 20 Q That's right.
- 21 A So the ohm resistance would be very different than  
22 what happened in a true Taser incident, if I  
23 understand it correctly.
- 24 Q You would agree with me that this study stands for  
25 the proposition that a 15-second CEW discharge  
26 over the cardiac axis did not demonstrate any  
27 evidence of a dangerous arrhythmia, is that fair?
- 28 A Yes.
- 29 Q Now, when we're dealing with the ventricular  
30 fibrillation and ventricular tachycardia issues  
31 that are addressed by your paper --
- 32 A Oh, excuse me, sorry, just to come back to it.  
33 This is the study where -- which is sort of a  
34 failed study in a way, isn't it, because they have  
35 a huge number of subjects where they -- they  
36 couldn't demonstrate the sinus rhythm. So the  
37 last sentence:  
38
- 39 Sinus rhythm was not clearly demonstrated in  
40 16 subjects due to movement artifact...  
41
- 42 So, you know, your dropout rate is so high, I'm  
43 not sure what you can interpret out of a sample  
44 size of 44.
- 45 Q You can't, or can you point me to any peer-  
46 reviewed medical research, a study of this sort,  
47 in which an arrhythmia has been demonstrated

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(cont'd)

- 1 following or during the course of a CEW discharge?  
2 A No, but more importantly we have evidence that in  
3 the real world it has happened, from these couple  
4 of these cases.  
5 Q And that's two case reports, both involving, one a  
6 defibrillation device?  
7 A That's my understanding.  
8 Q And the other a pacemaker. That's your evidence?  
9 A Yes. Yeah.  
10 Q Now, with respect to the ventricular fibrillation  
11 and ventricular tachycardia issues that are  
12 summarized in your report, is it fair that your  
13 reliance is primarily on Dr. Kerr and somewhat on  
14 Dr. Tseng with respect to those two issues?  
15 A And to the animal studies.  
16 Q Yes.  
17 A And I think some of the human volunteer studies  
18 showed that there was -- there was some QT  
19 shortening -- or lengthening, sorry, wasn't there?  
20 Q But what I'm trying to get at, Doctor, is are you  
21 relying on Drs. Kerr and Tseng, and I should put  
22 those questions more properly to them, rather than  
23 to you with respect to the VT and VF issues in  
24 your report?  
25 A I would have read the literature on the risk of  
26 "V" -- let's take them, they're very separate,  
27 right.  
28 Q Yes.  
29 A You know, you're hitting -- you're hitting on the  
30 "T" on the repolarization phase, and if you -- you  
31 most likely get ventricular fibrillation if you  
32 hit there, and so that would have, from reading  
33 the literature, I don't think there's any  
34 argument. And I think then reading the events in  
35 my report, I say I don't think that's a likely  
36 possibility. The ventricular tachycardia, you  
37 know, that's -- or some other sort of salvos of  
38 ectopics that might cause a prolonged period of  
39 consciousness before it happens is a theoretical  
40 possibility that I discussed with Dr. Kerr, yes.  
41 Q Okay. All right. Well, let's try it this way.  
42 You're not a cardiologist, fair?  
43 A No.  
44 Q And because you're not a cardiologist, that's why  
45 you consulted Dr. Kerr primarily with respect to  
46 the cardiology issues that are outlined in your  
47 report.

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(cont'd)

- 1 A That's correct.
- 2 Q Is that fair?
- 3 A That's correct.
- 4 Q And to a lesser extent you relied upon Dr. Tseng
- 5 for the same purpose, because Dr. Tseng is an
- 6 electrophysiologist?
- 7 A That's correct.
- 8 Q And you're not aware of -- or are you, of any
- 9 peer-reviewed medical literature which suggests
- 10 that a Taser device can cause ventricular
- 11 tachycardia that lasts for between seven and nine-
- 12 and-a-half minutes?
- 13 A No.
- 14 Q And in the event that ventricular fibrillation is
- 15 caused by an external source, then -- let me start
- 16 that over. In the event that ventricular
- 17 fibrillation results from an externally applied
- 18 electrical cause, the person becomes essentially
- 19 unconscious and stops moving within about ten
- 20 seconds. Is that fair?
- 21 A That's my understanding, yes.
- 22 Q And in this case you'd agree that Mr. Dziekanski
- 23 continued to move well after this ten seconds that
- 24 we're speaking about?
- 25 A Yes.
- 26 Q And you would agree with me, Doctor, that there is
- 27 no issue of any ventricular fibrillation in this
- 28 case?
- 29 A I agree.
- 30 Q Now, with respect to ventricular tachycardia,
- 31 would, assuming that Mr. Dziekanski is
- 32 experiencing ventricular tachycardia, would he be
- 33 able to resist the police for the 90 seconds or so
- 34 that he fought with them, if the tachycardia
- 35 started before or during the fight?
- 36 A My understanding from consulting with Dr. Kerr and
- 37 to a lesser degree Dr. Tseng, is that, that if you
- 38 had another rhythm, such as a salvo of ectopics
- 39 that led to a fatal arrhythmia, or whether you had
- 40 V tachy that was -- would give you enough
- 41 hemodynamic pressure so that not every beat, but
- 42 the odd beat would -- you could probably keep your
- 43 blood pressure high enough to stay conscious and
- 44 resist for, you know, not hours, not minutes, but
- 45 maybe up to a minute, minute and a half. That's
- 46 my understanding.
- 47 Q And you're aware -- you're aware of the evidence

1 of Mr. Enchelmaier?

2 A Yes, I am.

3 Q And Mr. Enchelmaier, let me recall this for you,  
4 you say -- well, firstly, at -- commencing at page  
5 19 of your report, in the third paragraph on the  
6 page, "According" -- "According to the video tape  
7 and records", are you with me, Doctor?

8 A Yes.

9 Q You say this:

10

11 According to the video tape and records, Mr.  
12 Dziekanski appears to have collapsed and  
13 subsequently died within a minute or two of  
14 being tasered and physically restrained.

15

16 A Yes.

17 Q

18 This short period of a few minutes as opposed  
19 to hours is a strong argument for a likely  
20 causal relationship, considering an absence  
21 of other risk factors as described above.

22

23 Have I read that correctly?

24 A

25 Yes.

26 Q

27 Now, you're aware that Mr. Enchelmaier is a

28 trained first aid responder?

29 A

30 Yes.

31 Q

32 That he was a former volunteer ambulance operator

33 or officer in Australia?

34 A

35 Yes.

36 Q

37 And according to Mr. Enchelmaier, he says he  
38 monitored Mr. Dziekanski on three occasions, the  
39 first of which -- and the period that he did so  
40 was after the handcuffs were applied. And you've  
41 seen the video, you know when that occurred, fair?

42 A

43 Yes.

44 Q

45 And that's the handcuffs were applied after a

46 minute or two of being tasered and physically

47 restrained. Is that fair?

A

I think the -- yes, I think what is it, 90 seconds  
is what people are counting.

Q

And he then monitored him a second time during the

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(cont'd)

1 interval that he was unconscious, you're aware of  
2 that?

3 A According to his testimony, yes.

4 Q Well, according to his testimony.

5 A Yeah, I have no reason to --

6 Q Thank you.

7 A -- no reason to disagree.

8 Q And the last monitoring occurred about two minutes  
9 before the arrival of Richmond Fire.

10 A According to his testimony.

11 Q Yes. And that time span is in the seven to nine  
12 minute range somewhere.

13 A Yes.

14 Q Now, what he says he did is he checked Mr.  
15 Dziekanski's carotid pulse on each occasion. You  
16 don't take any issue with that, do you?

17 A No.

18 Q He used two fingers, including the index finger,  
19 to check the pulse on the carotid artery in the  
20 neck. You don't take issue with that?

21 A No.

22 Q On the first occasion he describes the pulse as  
23 being a "very strong fast pulse on the neck", like  
24 someone "had been running -- strong and fast".

25 A Correct.

26 Q Do you recall that evidence?

27 A Yes.

28 Q Did you consider that when you drafted your  
29 report?

30 A Yes.

31 Q So that's -- he does that after the handcuffs are  
32 on.

33 A Yes.

34 Q Feels a strong pulse, and describes then the  
35 second check as being:

36

37 It was more of a person who'd been at rest --

38

39 And I'm paraphrasing.

40

41 -- more of a person who'd been at rest, a  
42 slower pulse. And again felt a good pulse in  
43 his neck, in the carotid pulse, and breathing  
44 was clear...

45

46 And he describes it as:

47

1                   ...a person who had been sitting for a while,  
2                   quite a while. Nowhere near as fast as  
3                   before, but still a strong beat but not as  
4                   fast.

5  
6                   Do you recall that evidence?

7                   A     Yes.

8                   Q     And that would be well after your view in  
9                   paragraph 19 that he had:

10  
11                   ...subsequently died within a minute or two  
12                   of being tasered and physically restrained.

13  
14                   It's inconsistent with that finding, fair?

15                   A     It's inconsistent, yes.

16                   Q     And the third check Mr. Enchelmaier describes it  
17                   as:

18  
19                   ...a slow pulse, still a clear pulse there in  
20                   his carotid pulse...

21  
22                   You recall that, Doctor?

23                   A     Yes.

24                   Q     And that, too, would be inconsistent with your  
25                   statement on page 19?

26                   A     That's correct.

27                   Q     And it would be inconsistent with ventricular  
28                   tachycardia, because he's feeling a pulse.

29                   A     If he's actually feeling a pulse, yeah, I -- I  
30                   mean, you could make a case that you could have  
31                   sort of, you know, pulses alternans, or some other  
32                   rhythm, you might feel a slow pulse with a  
33                   ventricular tachycardia or some other arrhythmia.

34                   Q     And you're aware that's Dr. Tseng's theory,  
35                   because you've read his report.

36                   A     Yes.

37                   Q     But if Mr. Enchelmaier is actually feeling a  
38                   pulse, there's no issue here of ventricular  
39                   fibrillation or ventricular tachycardia.

40                   A     If he's actually feeling a pulse, there is no  
41                   issue, correct. But as I said, I think I  
42                   mentioned yesterday, there's a logical sequence  
43                   that bothers me, that somebody -- what you're  
44                   suggesting or what is being suggested is that he  
45                   goes unconscious, then sometime subsequent to that  
46                   he has the arrhythmia, and that's sort of against  
47                   the logical that usually you have the arrhythmia,

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(cont'd)

1 and that makes you go unconscious.

2 Q But not in all cases.

3 A Not in all cases, no.

4 Q Now, with respect to the Taser probe placement,  
5 where the probe struck Mr. Dziekanski, is it fair  
6 that you would be relying on Dr. Lee's  
7 examination?

8 A Yes.

9 Q Now, Doctor, if I can have you turn to page 20 of  
10 your report, please. The last sentence in the  
11 first paragraph:

12  
13 Further, the taser is known to have other  
14 identifiable and potentially fatal biological  
15 pathways that don't apply in the case  
16 physical restraint alone.

17  
18 Have I read that --

19 A Yes.

20 Q -- properly. And what peer-reviewed medical  
21 studies do you rely upon for that statement?

22 A I think there's several studies that show both the  
23 animal studies, I think one by Dr. Ho, which shows  
24 a rise in lactic acid after tasing in  
25 volunteers. So there's the acid, you know, change  
26 in the pH, studies. I think there's --

27 Q Let's move the animal studies aside.

28 A Mm-hmm.

29 Q For a moment. I don't --

30 A Sure.

31 Q We're not talking about pigs here. Now, let's  
32 deal with humans alone. So let's restrict your  
33 comment to humans. It's the Ho paper with  
34 acidosis, is that your recollection?

35 A I don't actually recollect right now the exact  
36 studies. I think there's two of them that were --  
37 there's a bunch of animal studies. I think that's  
38 a concern that's been raised.

39 Q And it's been answered by Dr. Ho's research, is  
40 that fair?

41 A Well, let's have -- have you got --

42 Q Well, let me just show you a paper, Doctor.

43 A Yes.

44 MR. NEAVE: It's 141I, please, Mr. Registrar.

45 Q Are you familiar with this paper, Doctor?

46 A Yes.

47 Q This is the exhaustion study.

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(cont'd)

1 A This is one of them.

2 Q Yes.

3 A There's others.

4 Q Not by Dr. Ho.

5 A I think by somebody else, but -- so this is  
6 another pilot study or a small sample volunteer  
7 study.

8 Q Yes.

9 A And on page -- the second page:

10  
11 Lactate increased from a median of 1.65 to  
12 8.39...immediately after exercise...

13

14 Q After exercise.

15 A And:

16

17 ...increased to 9.85...immediately after  
18 exposure.

19

20 Q And, Doctor, if I can take you then to page 417,  
21 are you with me?

22 A Yes.

23 Q Left-hand column, bottom of the page:

24

25 There was a significant increase in serum  
26 lactate that occurred after the exercise  
27 protocol.

28

29 A Mm-hmm.

30 Q And this is the exercise protocol where they put  
31 the subjects on a treadmill and ran them till they  
32 spun off the back. You're aware of that?

33 A Yes.

34 Q

35 This level increased a small but  
36 statistically significant amount after the  
37 CEW exposure and returned to baseline at the  
38 24-hour postapplication time.

39

40 A Correct.

41 Q Have I read that correctly. And then down -- down  
42 to the last of -- above the "Limitations", the  
43 last paragraph or so -- or last sentence or so on  
44 page 417, right-hand column:

45

46 Our study supports the idea that CEW use on  
47 agitated, dangerous, and exhausted

1                   individuals represents an acceptable method  
2                   of control that does not appear to worsen an  
3                   acidotic condition that is already present.

4  
5                   Have I read that correctly?

6           A        Yes.

7           Q        Do you agree with that?

8           A        Well, we're back to the same issue that this is a  
9                   pilot study, a very small sample size and it does  
10                   show in people who have already had their lactic  
11                   acid raise, further rise. So I mean, I would read  
12                   this as an area that needed further work and as a  
13                   potential mechanism, not as -- not to say this is  
14                   -- we can rule this out based on this study. So I  
15                   would probably draw a different conclusion.

16          Q        You're not aware of any peer reviewed human  
17                   research papers that contradict this finding?

18          A        No, but there is discussion in the literature  
19                   about the potential role of metabolic acidosis.

20   MR. NEAVE:    May the witness be shown Exhibit 79,  
21                   please.

22          Q        Doctor, Exhibit 79 is the expert report of Dr. Di  
23                   Maio.

24          A        That's correct.

25          Q        You understand he's a pathologist in the United  
26                   States.

27          A        That's correct.

28          Q        Page 6, please. Dr. Di Maio opines as follows on  
29                   page 6:

30  
31                   Based on the aforementioned information --

32  
33                   And he's reviewed the various pieces that he  
34                   looked at.

35  
36                   -- it is my opinion that death was due to a  
37                   cardiac arrhythmia secondary to the effects  
38                   of chronic alcohol abuse; alcohol withdrawal,  
39                   stress from both the emotional and physical  
40                   results of the withdrawal; the struggle with  
41                   law enforcement personnel and alcoholic  
42                   cardiomyopathy. The mechanism precipitating  
43                   the fatal arrhythmia was, in all medical  
44                   probability, a hyper-adrenergic state due to  
45                   elevated levels of catecholamines produced by  
46                   autonomic hyperactivity, psychomotor  
47                   agitation, anxiety, and the struggle,

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(cont'd)

1                   superimposed on increased catecholamine  
2                   levels observed in cardiomyopathies and  
3                   chronic alcohol abuse.

4

5                   Do you agree with that statement, Doctor?

6           A       No, I don't think I do, actually.  Where are you  
7                   now, which page?

8           Q       I'm on page 6 of Dr. Di Maio's report, first full  
9                   -- or second full paragraph on the page.

10          A       I agree that -- I agree with him that I think the  
11                   fatal arrhythmia was, in all medical probability a  
12                   hyperadrenergic state with elevated  
13                   catecholamines, autonomic hyperactivity, but --

14          Q       Well, let's take it --

15          A       -- I'm not -- I don't agree -- I don't know how a  
16                   pathologist, given the lack of a past history, you  
17                   know, I was in clinical practice for 20 years and  
18                   people who are severe alcoholics, they have --  
19                   they usually have a long trail of history behind  
20                   them, which is absent in this case.  I don't  
21                   understand how a pathologist could -- could make a  
22                   diagnosis of chronic alcohol abuse, given what we  
23                   know about Mr. Dziekanski.  In terms of alcohol  
24                   withdrawal, I don't see that on the video and I'm  
25                   not sure how a pathologist who hasn't got clinical  
26                   experience could come up with that, "stress from  
27                   the emotional and physical results of the  
28                   withdrawal".  And the "alcoholic cardiomyopathy" I  
29                   think is in question here, the risk due to cardio  
30                   -- even a cardiomyopathy.  We have a normal heart  
31                   weight, we have normal left ventricular thickness,  
32                   we have the microscopic, I understand, is  
33                   essentially normal.  So all -- and what I would  
34                   like to point out, and I'm not sure of -- I think  
35                   Dr. Di Maio, he is co-author of the book on  
36                   excited delirium, but what's really missing here  
37                   is anything -- any mention of the Taser as a risk  
38                   factor.  It's remarkable by its absence.  How  
39                   could something as profound as being tasered not  
40                   be considered by Dr. Di Maio, and at least  
41                   included in the list.

42          Q       Well, let's move to the next page, then.  In  
43                   fairness, with respect to this paragraph, you're  
44                   in general disagreement, is that fair?

45          A       I think -- I think he's listed a lot of issues,  
46                   and I think -- and I'm not sure that I agree that  
47                   he could make the diagnosis of chronic alcohol

1 abuse, alcohol withdrawal, and Taser missing, yes.  
2 So I disagree with it.

3 Q All right. Well, let's turn to the next page  
4 then, page 7. And you've read this before, you  
5 were provided it before you drafted --

6 A yes.

7 Q -- your opinion, fair?

8 A Yes.

9 Q Page 7, second paragraph:

10  
11 There is no evidence that use of the TASER  
12 caused the death. A TASER can be employed  
13 two ways as occurred in this instance. The  
14 most common way is as an Electro-Muscular  
15 Disruption (EMD) device to cause  
16 neuromuscular incapacitation or strong muscle  
17 contractions through the involuntary  
18 stimulation of nerves. In the drive-stun  
19 mode, it is a pain compliance devise (sic).  
20 The drive-stun mode does not incapacitate a  
21 subject but may assist in taking a subject  
22 into custody because of the induced pain. In  
23 neither mode does it interfere with  
24 respiration, as has been demonstrated by  
25 human experimentation. It has been estimated  
26 that approximately 750,000 law enforcement  
27 individuals have been voluntarily tasered  
28 with no deaths or fatal arrhythmias.

29  
30 Next paragraph:

31  
32 The only way a TASER could theoretically  
33 cause death directly would be by producing a  
34 fatal cardiac arrhythmia, i.e. by  
35 electrocution, and then only when employed as  
36 an Electro-Muscular Disruption (EMD) device.  
37 The arrhythmia produced would have to be  
38 ventricular fibrillation, the arrhythmia  
39 produced by electrocution. The arrhythmia  
40 would have to occur at the time he was last  
41 Tasered in the Electro-Muscular Disruption  
42 (EMD) mode as electricity does not accumulate  
43 in the body. Ventricular fibrillation would  
44 result in lose (sic) of conscious in 5-15  
45 seconds. Respiration may continue for about  
46 a minute. Neither of these occurred  
47 following the last use of the TASER in the

1 EMD mode. Following the last use of the  
2 Taser in the Electro-Muscular Disruption  
3 (EMD) mode, Mr. Dziekanski continued to  
4 struggle, was drive-stunned at least once,  
5 handcuffed and even then continued to  
6 struggle.  
7

8 Do you agree with any of that, Doctor?

9 A No, the crux of my report, what I actually -- the  
10 logic in it is that if I agree, which I do, that  
11 hyperadrenergic state is, if you take it in order  
12 of sequence, you know, electrical, fatal  
13 arrhythmia caused by -- electrical death caused by  
14 fatal arrhythmia, fatal arrhythmia caused by  
15 hyperadrenergic state, the next question is what  
16 can cause a hyperadrenergic state to suddenly  
17 accelerate to the point that arrhythmia occurs.  
18 Well, we know, you've already pointed out, that,  
19 you know, physical restraint is known to do this  
20 in very short order of time.

21 So what I'm suggesting and what, in my  
22 opinion, what I believe, is that Taser has at  
23 least that ability to do that. So I disagree with  
24 him that the only mechanism that Taser can cause  
25 death is by electrocution. I think it's -- I  
26 think it is likely that it could cause as much or  
27 more of an effect in terms of what physical  
28 restraint does on the hyperadrenergic state, and  
29 that's what I -- that's what I believe is going  
30 on.

31 Q And that's despite the Dawes paper and us looking  
32 at that issue.

33 A That's correct, for the reasons I said before.

34 Q And despite that you can't point to any literature  
35 which refutes the Dawes findings.

36 A That's correct.

37 Q Doctor, you'll see on the -- near -- in the last  
38 paragraph on page 7 Dr. Di Maio reviews the NIJ  
39 study in 2008.

40 A Yes.

41 Q The Interim Report, and then draws the conclusions  
42 from that report that are at paragraph on page 8,  
43 rather. And he says the conclusions from the  
44 report are as follows, and I'm going to ask you if  
45 you're going to agree with those conclusions.  
46 First:

47

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(cont'd)

1                   Although exposure to CED is not risk free,  
2                   there is no conclusive medical evidence  
3                   within the state of current research that  
4                   indicates a high risk of serious injury or  
5                   death from the direct effects of CED  
6                   exposure.

7

8                   Do you agree with that, Doctor?

9                   A        I agree, "a high risk" in my vocabulary means a  
10                  frequent --

11                  Q        Secondly:

12

13                                There is currently no medical evidence --

14

15                  A        -- a high incidence, yes. Okay. I agree.

16                  Q        Thank you.

17

18                                2. There is currently no medical evidence  
19                                that CEDs pose a significant risk for induced  
20                                cardiac dysrhythmia when deployed reasonably.

21

22                   Would you agree with that statement, sir?

23                  A        You'd have to define "reasonably", so I --

24                  Q        So you can't agree with that.

25

26                                3. There is no medical evidence to suggest  
27                                that exposure to a CED produces sufficient  
28                                metabolic or physiologic effects to produce  
29                                abnormal cardiac rhythms in normal, healthy  
30                                adults.

31

32                   Would you agree with that?

33                  A        I would agree.

34

35                                4. Research shows that human subjects  
36                                maintain the ability to breathe during  
37                                exposure to a CED.

38

39                   Would you agree with that, Doctor?

40                  A        I would agree.

41                  Q        And:

42

43                                5. Current medical research suggests that  
44                                CED deployment is not a stress of a magnitude  
45                                that separates it from the other components  
46                                of subdual.

47

1           Would you agree with that, Doctor?

2       A     No, I don't -- I don't see how you could draw that  
3           conclusion, based on what we know.

4       MR. NEAVE: Exhibit 80, please.

5           Commissioner Braidwood, I'm -- I expect I can  
6           finish in five or six minutes.

7       THE COMMISSIONER: I thought we were running out of  
8           studies.

9       A     I have hundreds here. We could go on for a month.

10      MR. NEAVE:

11      Q     Doctor, you've got Exhibit 80 now before you.

12           This is the expert report of Dr. Pollanen.

13      A     Yes.

14      Q     A forensic pathologist from Ontario. This was one  
15           of the documents that you were provided with in  
16           advance of your report, fair?

17      A     Yes.

18      Q     And if I can, Doctor, have you turn up page 10,  
19           please. What you'll see under -- under "Review of  
20           the postmortem examination" Dr. Pollanen says "My  
21           review of the histology", I'm midway through that  
22           paragraph, "My review" -- well, let me step back:

23

24           My review of the histology reveals marked  
25           macrovesicular steatosis (fatty liver),  
26           pulmonary hemorrhage, rare pulmonary fat  
27           emboli, and degeneration of the superior  
28           cerebellar vermis.

29

30           Do you agree with that?

31      A     Cerebellar vermis, yeah.

32      Q     Cerebellar vermis, pardon my pronunciation.

33      A     Yes, you're reading that correctly.

34      Q     And those are all features of chronic alcoholism,  
35           fair?

36      A     Usually.

37      Q     And he says -- well, are there other -- are there  
38           other factors which result in the type of brain  
39           damage and fatty liver demonstrations in this  
40           case, other than alcohol consumption?

41      A     Probably not.

42      Q     He -- and then the doctor says:

43

44           I could not confirm the presence of dilated  
45           cardiomyopathy.

46

47           Would you --

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(cont'd)

1 A So I agree, so --

2 Q You agree with that, all right.

3 A So they're saying that the heart is essentially  
4 normal.

5 Q No, he's not. He's saying I can't confirm the  
6 presence of dilated cardiomyopathy.

7 A Right.

8 Q It's the other way, it's not that it isn't there,  
9 he can't confirm that it is.

10 A Right. So on the benefit of the doubt, what we  
11 know from chronic alcoholism sudden death  
12 associated almost exclusively, the only literature  
13 is delirium tremens, and it would be due to a  
14 dilated heart. So if it's -- if the heart's not  
15 significantly damaged, you know, even the fact  
16 that somebody's got some changes due to alcohol, I  
17 wouldn't expect risk due to an arrhythmia due to  
18 their heart would be an issue.

19 Q And you're aware that the pathologist, Dr. Lee,  
20 found cardiomyopathy, fair?

21 A Found a dilated heart.

22 Q Yes.

23 A With normal microscopic. My understanding, if you  
24 have a significant cardio -- dilated  
25 cardiomyopathy, there's different kinds, you  
26 should see microscopic changes, fibrosis and other  
27 changes in the microscope.

28 Q Well, this is what he says in his report:

29

30 The autopsy also showed the presence of a  
31 severely fatty liver, atrophy of the  
32 cerebellar vermis, and a dilated  
33 cardiomyopathy.

34

35 Those are Dr. Lee's words.

36 A Well, if there is an actual cardiomyopathy it's --  
37 in my opinion it's relatively mild, and that's in  
38 consultation with the -- with Dr. Kerr.

39 Q And then staying with Dr. Pollanen's report, he  
40 says that "The medical and video", and I'm under  
41 the "Discussion", "Medicolegal issues".

42 A Yes.

43 Q That:

44

45 The medical and video evidence reveals at  
46 least five possible variables that need to be  
47 considered as putative causal factors in the

1 death of Robert Dziekanski:

2

3

1. Agitated state.

4

5

You'd agree with that?

6

A

Yes.

7

Q

8

2. Restraint in the prone-position.

9

10

Would you agree with that?

11

A

Physical restraint, yes.

12

Q

13

3. Effects of the taser.

14

15

A

Yes.

16

Q

17

4. Chronic alcoholism.

18

19

A

I don't think that's an issue.

20

Q

Okay.

21

22

5. Dilated cardiomyopathy.

23

24

A

And I don't think that's a significant issue, for the reasons I explained earlier.

25

26

Q

And he agrees with your view in the next paragraph:

27

28

I cannot confirm the presence of dilated cardiomyopathy; thus, I do not believe heart disease contributed to death.

29

30

31

32

You're *ad idem* with the doctor on that, fair?

33

A

Yes.

34

Q

35

Chronic alcoholism might have contributed to the agitated state, perhaps by alcohol withdrawal.

36

37

38

39

I expect you won't agree with that, is that fair?

40

A

Well, I think the following sentence:

41

42

There is little objective evidence to support or refute that proposition.

43

44

45

Q

Yes.

46

A

I mean, if somebody had, you know, a badly damaged cerebellar vermis, you know, you -- and they're an

47

1 alcoholic, I think we've all see them, that wide  
2 gait you'll see walking down the street from an  
3 alcoholic who's got severe brain damage, that  
4 wasn't evident on the video, in my opinion.

5 Q Okay.

6 A So -- so I'm -- I think there is -- and I don't --  
7 I think I agree with that there is little  
8 objective evidence to support or refute that  
9 alcohol withdrawal was an issue.

10 Q And then the doctor concludes:

11  
12 Thus, the main medicolegal issues for  
13 discussion are the influence of the agitated  
14 state,...

15  
16 You've agreed with that.

17 A Yes.

18 Q ...restraint position, --

19  
20  
21 You've agreed with that.

22  
23 -- and the effects of the taser.

24  
25 Fair?

26 A Yes.

27 Q And you'd agree with all of those.

28 A Yes. And then with respect to the "Effects of the  
29 taser" on page 11, the doctor says this:

30  
31 The video evidence clearly excludes a direct  
32 taser-related acute arrhythmic death.

33  
34 Would you agree with that statement?

35 A With one proviso, as in my report, that if the  
36 assesses by Enchelmaier who did the -- the pulse,  
37 if in fact the true sequence was he had the  
38 arrhythmia, went unconscious, so when you look on  
39 the video, it's the time he went flat is the time  
40 of the arrhythmia, then that doesn't totally rule  
41 out -- I still, as I've told you, think it's  
42 highly unlikely or it's unlikely, but it's -- but  
43 it doesn't totally rule out the direct effect of  
44 the Taser. But it's not my -- it's not what my  
45 end opinion is. I'm much more confident of the  
46 hyperadrenergic state as the cause.

47 Q Right. And the doctor goes on to say:

1           The main evidence for this conclusion is that  
2           Robert Dziekanski is seen to be alive, after  
3           successful deployment of the taser. Thus, I  
4           am satisfied that the 'temporal dissociation'  
5           is sufficient evidence to exclude a direct  
6           role of the taser discharge in causing death  
7           in this case.

8

9           Do you agree with that?

10          A       Given what I've just said, yes.

11          Q       And then he continues:

12

13                   However, does this imply that the taser was  
14                   not a co-factor in Robert Dziekanski's death?  
15                   The answer to this question has two  
16                   dimensions:

17

18                   1. It is possible to argue that death can be  
19                   explained entirely by the *excited*  
20                   *delirium/prone-position restraint concept*  
21                   without referring to additional causes.  
22                   It is a fact that most people who die in  
23                   this situation are not subject to a taser  
24                   deployment. Therefore, it is possible to  
25                   conclude that the taser need not be a  
26                   factor in death.

27

28                   Would you agree with that statement, sir?

29          A       Yes.

30          Q       Sorry, I think I spoke over you. Would you agree  
31                   with that?

32          A       For that whole...

33          Q       Number 1, yes.

34          A       Yes.

35          Q

36                   2. But if the *excited delirium/prone-*  
37                   *position restraint concept* is accepted as  
38                   an explanation for death, then any co-  
39                   factor that increases agitation or  
40                   induces additional stress should  
41                   exacerbate the mechanisms leading to  
42                   death. Stated alternatively, the taser  
43                   could have contributed to death through a  
44                   non-arrhythmogenic mechanism.

45

46                   Would you agree with that, Doctor?

47          A       That's getting closer to what my opinion is. But

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(cont'd)

1           when he talks about a non-arrhythmogenic, he's  
2           talking about direct heart capture, as opposed to  
3           a hyperadrenergic state causing an arrhythmia.

4       Q     So would you agree with point 2 or not?

5       A     I think up until the last sentence I agree, the  
6           mechanisms leading to death. And I think -- I  
7           think what the Dr. Pollanen's implying, though, is  
8           when the doctor is talking about a non-  
9           arrhythmogenic mechanism, I think we're talking  
10          about direct capture. That's my assumption, and  
11          if that's the assumption, yes, then I agree.

12       Q     Well, let me give you some assistance as to what  
13          he's actually saying. In the next paragraph,  
14          midway down, he says -- talks about the pig  
15          studies, and then continues:

16

17                   But, human studies have not revealed similar  
18                   findings. Although the data is conflicting,  
19                   I have an open mind to the possibility that  
20                   the taser discharge may have indirectly  
21                   contributed to death though a non-  
22                   arrhythmogenic mechanism. A simple line of  
23                   reasoning supports this conclusion. If a  
24                   theory is developed to explain death based on  
25                   excited delirium or an agitated state, it  
26                   seems difficult to argue (based on the video)  
27                   that Robert Dziekanski was not more  
28                   (dis)stressed or agitated after the  
29                   deployment of the taser. However, to be  
30                   entirely balanced on this point, knowledge is  
31                   evolving, both in the area of excited  
32                   delirium and the physiologic effects of the  
33                   taser (e.g. dose-dependency of metabolic  
34                   effects, species differences in taser  
35                   responses, lack of a suitable animal model of  
36                   excited delirium that can be studied using  
37                   taser discharges).

38

39                   So he informs what he's talking about --

40       A     Mm-hmm.

41       Q     -- in 2. Fair?

42       A     Fair. And then further down he -- I think he  
43           concludes, he takes out the word "arrhythmia"  
44           saying that:

45

46                   ...taser discharge may have played in  
47                   indirectly contributing to death, since Mr.

1                   Dziekanski appears more (dis)stressed and  
2                   agitated after the deployment of the taser.

3

4                   So if he's talking about indirectly contributing  
5                   to his death, yeah, then I -- then that's --  
6                   that's consistent with what I believe.

7                   MR. NEAVE: Okay. And then let's go to Dr. Swerdlow's  
8                   report, and I apologize, Mr. Registrar. Exhibit  
9                   104.

10                   I apologize, Mr. Commissioner, I am longer  
11                   than my indicated time. I've got two more reports  
12                   to go through in the same fashion, so I'm in your  
13                   hands.

14                   THE COMMISSIONER: Counsel have any comment?

15                   MR. MCGOWAN: Well, Mr. Commissioner, obviously Mr.  
16                   Neave will, you know, need to be given the time to  
17                   complete his cross-examination. I expect some of  
18                   my other friends may have questions. We're  
19                   running into a bit of a timing problem here,  
20                   unfortunately.

21                   THE COMMISSIONER: And you're suggesting 1:30?

22                   MR. MCGOWAN: Well, based on the canvassing that we had  
23                   taken, we anticipated the cross-examination of Dr.  
24                   Chambers would have been completed some time ago.

25                   I believe Mr. Rosenbloom and Mr. Butcher have  
26                   an issue they want to address with respect to Mr.  
27                   Fredericks, the video witness.

28                   We have Dr. Kerr lined up in Chicago by  
29                   telephone for 1:00 p.m. He is unavailable after  
30                   4:00 p.m. today. He's at a conference, which he's  
31                   actually absenting himself from to deal with us  
32                   for those three hours from one o'clock to four  
33                   o'clock.

34                   Unfortunately, we do have to finish Dr.  
35                   Chambers today because he's leaving the country,  
36                   so we have some --

37                   THE COMMISSIONER: Well, it looks as if we'd better get  
38                   both done. Shall we start at 1:00?

39                   MR. MCGOWAN: I'm in your hands, Mr. Commissioner. I  
40                   don't have any submission on that.

41                   THE COMMISSIONER: Well, I don't see anybody fainting  
42                   at that suggestion, so we'll start at 1:00 and,  
43                   I'm sorry, Doctor, but you see our dilemma. And  
44                   then when that's done, we'll come back.

45                   MR. MCGOWAN: I'm just wondering if it's realistic for  
46                   us to -- I don't know if Mr. Neave is able to give  
47                   us any indication as to how long he might be with

1 Dr. Kerr. If we can get any indication how much  
2 longer others might be with Dr. Chambers.

3 MR. HIRA: I need about ten minutes to look at the  
4 file, which I haven't had an opportunity to do, as  
5 it's been brought today and we've been sitting the  
6 entire time. And I need a few moments of  
7 consultation. *Ceteris paribus*, everything else  
8 being equal, I may be as short as five minutes or  
9 as long as 20 minutes.

10 A If I can help, can he look at the file over the  
11 break? That's fine with me.

12 MR. HIRA: Oh, I was hoping to do that.

13 THE COMMISSIONER: All right. Now, I know it's only 20  
14 minutes from now, but should we not start at 1:00  
15 and move over to the doctor that you mentioned,  
16 Kerr, was it, over the phone?

17 MR. MCGOWAN: I'm certainly content with that. I'm  
18 hopeful we can finish Dr. Chambers before  
19 commencing Dr. Kerr, but Dr. Kerr will be waiting  
20 and ready to start as soon as we're done with Dr.  
21 Chambers.

22 THE COMMISSIONER: But we can overhang further into  
23 today with Dr. Chambers, but can't do it with Dr.  
24 Kerr.

25 A Is Dr. Kerr available from 1:00 on up till 4:00?

26 MR. MCGOWAN: That's my understanding.

27 A So you could finish with me and then do Dr. Kerr  
28 after.

29 MR. MCGOWAN: If I might just have a moment.

30 THE COMMISSIONER: I'll leave it to counsel. We'll  
31 adjourn till 1:00.

32 MR. MCGOWAN: Thank you, Mr. Commissioner.

33 MR. ROSENBLOOM: Excuse me, Mr. McGowan, where does  
34 that leave Mr. Butcher and myself in respect to  
35 our matter? Are you sitting tomorrow?

36 MR. MCGOWAN: We had not -- no, the Commission is not  
37 sitting tomorrow. I don't know whether the  
38 Commissioner --

39 THE COMMISSIONER: I think we -- I know your problem,  
40 and I think it is essential that we have a ruling  
41 on your matter so you'll know how much money and  
42 effort to spend.

43 MR. ROSENBLOOM: Precisely.

44 THE COMMISSIONER: Indeed. I'm aware of that. What to  
45 do about it, I'm not certain. But I think what we  
46 must do is to finish these doctors and then see  
47 what happens, but I'm alive to your problem.

1 MR. ROSENBLOOM: Being alive to our problem, Mr.  
2 Commissioner, do you not wish us to speak to the  
3 matter so that there can be some rulings?  
4 THE COMMISSIONER: Well, of course, but I'm not saying  
5 when. I can't say when.  
6 MR. ROSENBLOOM: And by so indicating, does that mean  
7 it is unlikely to be this week?  
8 THE COMMISSIONER: No, it does not mean that at all.  
9 MR. MCGOWAN: Perhaps we could canvass the issue over  
10 lunch and see if we can come up with some  
11 solution.  
12 THE COMMISSIONER: And I might say I haven't studied  
13 that material, but what went through my mind if  
14 it's of any help, is my perceived difference, but  
15 it's very vague in my mind from years ago, as to a  
16 difference between the Supreme Court of Canada and  
17 the Supreme Court of the United States on the test  
18 for admissibility. One relating to whether or not  
19 it has to be accepted, and I'm not being -- my  
20 language is not too accurate here -- accepted  
21 expertise in the community as opposed to leading-  
22 edge expertise ion the community. Now, with that  
23 we'll adjourn till 1:00.  
24 THE REGISTRAR: The hearing is now adjourned till 1:00  
25 p.m.

26  
27 (WITNESS STOOD DOWN)

28  
29 (PROCEEDINGS ADJOURNED FOR NOON RECESS)  
30 (PROCEEDINGS RECONVENED)

31  
32 GORDON KEITH CHAMBERS, a  
33 witness, recalled.

34  
35 THE COMMISSIONER: Thank you. Mr. Neave.  
36 MR. NEAVE: Yes, I think we're ready for another bout  
37 here.

38  
39 CROSS-EXAMINATION BY MR. NEAVE ON BEHALF OF TASER  
40 INTERNATIONAL, continuing:

41  
42 Q Did you get some food, Doctor?

43 A I did, thank you.

44 MR. NEAVE: Excellent.

45 Mr. Commissioner, I neglected to mark the  
46 Eastman paper that I put to the doctor. Might  
47 that be the next exhibit, please.

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(cont'd)

1 THE COMMISSIONER: Yes.

2 THE REGISTRAR: Exhibit 153.

3

4 EXHIBIT 153: Item entitled "Conductive  
5 Electrical Devices: A Prospective  
6 Population-Based Study on the Medical Safety  
7 of Law Enforcement Use" by Alexander L.  
8 Eastman et al

9

10 MR. NEAVE:

11 Q Now, Doctor, do you have Dr. Swerdlow's report  
12 before you.

13 A I do.

14 Q Okay. If I can, that's Exhibit 104, can you turn,  
15 please, to the second page under "Summary and  
16 Conclusions".

17 A Yes.

18 Q And you're aware that Dr. Swerdlow is a cardiac  
19 electrophysiologist.

20 A That's correct.

21 Q In Los Angeles.

22 A That's correct.

23 Q And he concludes on page 2 under "Summary and  
24 Conclusions" firstly:

25

26 The pathophysiological mechanisms that caused  
27 Mr. Dziekanski's death cannot be determined  
28 with a high degree of certainty.

29

30 Do you agree with that statement?

31 A I think that's arguing against what Dr. Di Maio  
32 said and what I've said that the  
33 pathophysiological mechanism is a hyperadrenergic  
34 state causing a fatal arrhythmia, so I disagree  
35 with that.

36 Q Okay. Secondly:

37

38 The circumstances of Mr. Dziekanski's death  
39 are typical of the poorly-understood syndrome  
40 of sudden in-custody death, often occurring  
41 after restraint.

42

43 A I think we've gone over that a number of times,  
44 that what makes Mr. Dziekanski very unique from  
45 the typical sudden in-custody death is the lack of  
46 drugs, lack of heart disease, lack of mental  
47 illness, and -- and certainly lacking many of the

1 symptoms of excited delirium.

2 Q Am I correct, then, Doctor, that you would not  
3 agree with Dr. Swerdlow's second conclusion as  
4 I've just read it?

5 A That's correct.

6 Q Third:

7

8 There is no medical, scientific evidence to  
9 support the conclusion that CEW discharges  
10 contributed to Mr. Dziekanski's death.

11

12 Would you agree with that, sir?

13 THE COMMISSIONER: Just to interrupt. When this was  
14 given, I took "discharges" to mean "capture".

15 MR. NEAVE: No, discharges.

16 A No, that's firing.

17 MR. NEAVE: Firings.

18 A Just the firing.

19 MR. NEAVE: Application of the electrical force.

20 THE COMMISSIONER: Well, that's the literal reading of  
21 it.

22 MR. NEAVE: Yes. That's my assumption, and I can  
23 assist you, I think. Yeah, it's discharge of the  
24 weapon, and if I might, Mr. Commissioner, I can  
25 assist you with that. If you refer to page 3,  
26 "Diagnosis of Cardiac Arrest Proximate to TASER  
27 CEW Discharge", on page 3. So we're talking about  
28 -- I'm interpreting, and I think the doctor's  
29 evidence was talking about the discharge itself.

30 THE COMMISSIONER: All right.

31 MR. NEAVE: Thank you.

32 Q And, Doctor, with respect to --

33 A I would disagree with 3, as well.

34 MR. NEAVE: Thank you. Exhibit 108, please, Mr.  
35 Registrar, to the witness.

36 A Are we through with this...

37 Q We're through with --

38 A Could I make a comment about this? I was hoping  
39 we'd get to the page 9 of the report where Dr.  
40 Swerdlow gives the opinion that the death rate is  
41 around one in a thousand after CEW, and that he  
42 gives a sample size of -- he says it would be  
43 impractical to be proper trials because you'd need  
44 such a large sample size of 100,000 "to achieve  
45 meaningful power". I had Michael Schulzer, our  
46 Ph.D. statistician work out some numbers for me  
47 and confirm them, it's in my records. And those

- 1           -- the sample you require to get some answers to  
2           these questions would be much smaller than that,  
3           in the order of 20,000 to 30,000, 25,000. So it's  
4           certainly, in my experience, a very doable kind of  
5           piece of research.  
6           I just want to make that comment in case that  
7           came up later.
- 8           Q    Now, turning to Dr. Panescu's opinion, Doctor.  
9           You've got that before you now?
- 10          A    Yes.
- 11          Q    Dr. Panescu, and if I can take you to the second  
12          of 29 pages, please, to the summary of the  
13          "Opinions".
- 14          A    Take me to where, sorry?
- 15          Q    The summary of the "Opinions" on the second page.
- 16          A    Yes.
- 17          Q    Section 1.2 "Opinions", are you with me, Doctor?
- 18          A    Yes.
- 19          Q    Opinion number 2:
- 20  
21                    The voltage, current and charge delivered by  
22                    the TASER X26 device are, by a very wide  
23                    margin, significantly below thresholds known  
24                    to be capable of inducing ventricular  
25                    fibrillation. Electricity, including  
26                    currents from a TASER 26 CEW, cannot directly  
27                    trigger asystole or pulseless electrical  
28                    activity (PEA).  
29
- 30           Do you agree with that, Doctor?
- 31          A    I mean, that's sort of going against what we know  
32          from the few cases in real world situation where  
33          direct capture and ventricular tachycardia was  
34          noticed.
- 35          Q    And those are the cases that we were talking about  
36          before with respect to some sort of internal  
37          defibrillator device, or a pacemaker, fair?
- 38          A    That's correct.
- 39          Q    Other than those cases, would you agree?
- 40          A    Well, there's all of the swine literature that  
41          shows the potential possibility. There's the  
42          notion that some of the volunteer studies, they've  
43          got QT prolongation. You have the study by --  
44          with Tseng was a member of, that raises the  
45          question that maybe there is an increased death  
46          rate.
- 47          Q    Well, Doctor --

1 A So I guess, I can't -- the voltage, current and  
2 charge by the device, I'm not an expert in that  
3 area, but it's not fitting with what I know from  
4 the other literature.

5 Q So with respect to item 2 you cannot agree, is  
6 that fair?

7 A Sorry?

8 Q With respect to item 2 you cannot agree?

9 A Yes. Not until real world situation research is  
10 properly done.

11 Q Number 3:

12  
13 When applied to Mr. Dziekanski's body, only  
14 non-dangerous fractions, if any, of the  
15 voltage, current and charge generated by the  
16 TASER 26 CEW reached the heart. If any such  
17 fraction reached the heart, whether for 5, 6  
18 or 9 s[econds], the residual level was  
19 significantly below, by a very wide margin,  
20 scientifically accepted thresholds required  
21 for induction of VF.

22

23 Would you agree with that, Doctor?

24 A I can't agree or disagree. This is getting out of  
25 an area that I feel comfortable giving an opinion  
26 on.

27 MR. NEAVE: Mr. Registrar, I apologize, I don't have  
28 Dr. Ho's exhibit number for Dr. Ho's report. If  
29 you could put that to the witness, I would  
30 appreciate that. Thank you. 141A.

31 Q Doctor, this is the expert report of Dr. Ho.  
32 You're familiar with his research, we've talked  
33 about that today. If I can, Doctor, have you turn  
34 to page 17, please, the last paragraph on the  
35 page. Dr. Ho says this:

36

37 While there is not a clear existence of  
38 association between ECD use and SD, --

39

40 Which is sudden death.

41

42 -- there is a clear existence of association  
43 between a certain profile of person at risk  
44 for SD events. This has been demonstrated in  
45 several research studies and texts and RD --

46

47 "RD" is Mr. Dziekanski.

1                   -- is represented by this profile in several  
2                   ways including gender, BMI, underlying  
3                   cardiac disease, and behaviour at the time of  
4                   death. In this, RD had a pre-disposing,  
5                   underlying abnormal cardiac condition  
6                   (dilated cardiomyopathy, fatty infiltration  
7                   and cardiac perivascular fibrosis) that was  
8                   most likely brought about by his chronic  
9                   alcohol abuse.

10

11                   I expect, Doctor, you wouldn't agree with that.

12           A        Sorry?

13           Q        You wouldn't agree with that, I take it?

14           A        I'm curious about the cardiac perivascular  
15                   fibrosis. Was that reconfirmed in the report by  
16                   Dr. Lee?

17           Q        Yes.

18           A        Can you show that to me?

19           MR. NEAVE: Exhibit 77, please. Oh, sorry, no, 76, my  
20                   apologies.

21           A        No, no, not the original autopsy, I have that.  
22                   I'm talking about his report. My understanding is  
23                   he changed his opinion about the microscopic  
24                   findings.

25           Q        How -- how do you know --

26           A        Hmm?

27           Q        A report, you say? Have you been provided with  
28                   another report by Dr. Lee that follows this in  
29                   this case?

30           A        Or verbal communications, or something. My  
31                   understanding that he no longer thinks there was  
32                   perivascular fibrosis, and that --

33           Q        Well, tell us -- tell us about that. How do you  
34                   know that?

35           A        That's my understanding.

36           Q        From what?

37           A        From conversations with the Commission, I guess.  
38                   I could be -- I could be mistaken, or Dr. Butt, or  
39                   somewhere.

40           Q        You talked to Dr. Butt about this?

41           A        No, I haven't --

42           THE COMMISSIONER: I think it's Dr. Butt, if I remember  
43                   the evidence correctly. He --

44           A        I understood --

45           THE COMMISSIONER: He did a microscopic examination  
46                   only and didn't view the heart itself, and from  
47                   the microscopic examination he wasn't able to

1 confirm what you're speaking of.

2 A But I understood Dr. Lee then changed his opinion  
3 about the microscopic findings. Am I -- is that  
4 incorrect?

5 THE COMMISSIONER: I don't recall that.

6 A There's nothing in the report from Dr. Lee about  
7 that?

8 MR. NEAVE: You've got the report of Dr. Lee before  
9 you.

10 A Well, no, this is the -- this is the post -- the  
11 original post-mortem.

12 Q And that's the only document that I have.

13 A How about in the testimony?

14 Q That's not my recollection of the evidence.

15 THE COMMISSIONER: I don't recall that, either.

16 A Okay.

17 MR. NEAVE:

18 Q So you discussed this with Dr. Butt, I take it,  
19 before giving evidence today?

20 A No, I haven't discussed it with Dr. Butt. Maybe  
21 it was in the -- maybe I read it in the testimony  
22 and online, or something, or -- I had the distinct  
23 impression that Dr. Lee reviewed the microscopic  
24 findings and then changed his opinion about the  
25 microvascular fibrosis.

26 Q Have you reviewed all of the transcripts of the  
27 evidence filed in this before giving evidence  
28 today?

29 A No.

30 Q Well, let me just deal with Dr. Ho's report in  
31 this fashion, then. If I can just have you turn  
32 over to page 20, please, to the "Conclusions".  
33 And what --

34 MR. KOSTECKYJ: If I may just interrupt with respect to  
35 Dr. Lee, at his examination -- examination in  
36 chief by Mr. McGowan, at -- he did talk about the  
37 fact that when he did a microscopic analysis,  
38 confirming your findings of cardiomyopathy, he  
39 said -- this is at page 19 of his evidence, he  
40 said:

41

42 I was hoping that it would be confirmed by  
43 microscopic analysis, but the microscopic  
44 findings were minimal.

45

46 And then at line 7:

47

1 Q Okay. Is it often confirmed by microscopic  
2 analysis?

3 A Generally, yes.

4

5 And the question was:

6

7 Generally, yes, okay. And in this case, did  
8 your microscopic analysis confirm your  
9 finding of cardiomyopathy?

10

11 And the answer was:

12

13 Not really, no.

14

15 And it went on in the next question:

16

17 All right. To the extent your visual  
18 examination told you anything, tell the  
19 Commissioner about that.

20 A Again, the heart -- the ventricles, the  
21 chambers, lower chambers of the heart were  
22 dilated. Normally the chambers are fairly --  
23 fairly small in a resting heart. In this  
24 case, they were markedly enlarged and the  
25 wall of the heart was somewhat thinned.  
26 Again, there are a number of causes,  
27 potential causes of this, atherosclerosis  
28 probably the most common. But a significant  
29 number of chronic alcoholics do develop a  
30 dilated heart.

31

32 And he went on:

33

34 A number of other medications...

35

36 But that was the evidence, as I recollect it.

37 A Thank you very much. That's my recollection. And  
38 instrumental in that to say that the ventricle is  
39 thinned when it's 1.3 centimetres is -- that's a  
40 normal -- my understanding it's a normal width of  
41 a ventricle. And without microscopic findings, it  
42 would be very difficult to say that he had a  
43 significant cardiomyopathy. Which would bring us  
44 back to what you were -- Dr. Ho's opinion about  
45 the risk factor.

46

MR. NEAVE:

47

Q I understand. We're not going to debate Dr. Lee's

- 1 evidence, because he went --
- 2 A But we are debating Dr. Ho's evidence. You put it  
3 before me and I said, no, that's not my  
4 understanding, and I think it's been confirmed  
5 now. And that brings back the other risk factors  
6 that he's -- puts the other risk factors, he's  
7 saying or his description of this high-risk  
8 individual, puts it in question, in my opinion.
- 9 Q And we're talking about cardiac perivascular  
10 fibrosis as distinct from myopathy. And my friend  
11 just read to you about myopathy, and the issue on  
12 fibrosis was not addressed by that statement, as  
13 far as I can recall.
- 14 A If you have a dilated heart.
- 15 Q Yes.
- 16 A A cardiomyopathy, there's different types: one  
17 form is restrictive, one form is dilated. And  
18 when it's dilated, it means the muscles stretch.  
19 And one of the things you're looking for is  
20 fibrosis, perivascular fibrosis. So that would  
21 tell me that if Dr. Lee had seen those findings on  
22 examination and said, okay, visually, the heart's  
23 dilated, it's thinned, and when I look under the  
24 microscope I can see the muscles are damaged and  
25 there's this fibrosis, then I'd say, yes, he had a  
26 significant cardiomyopathy. But in this case --  
27 or, if he had a heavy heart. But in this case,  
28 the width of the ventricle is normal. He's  
29 described that. I think originally in his autopsy  
30 he said it was thickened, but on -- I think he, on  
31 reflection, I think it's -- my understanding is  
32 that's a normal width of a ventricle. That in the  
33 absence of microscopic findings, I think it's very  
34 difficult to make a diagnosis of a dilated  
35 cardiomyopathy, and I could be corrected by  
36 somebody who's more experienced in that field,  
37 such as Dr. Kerr or whoever.
- 38 Q And the difference between you and Dr. Lee is that  
39 he examined the heart, you didn't, fair?
- 40 A The difference between Dr. Lee and --
- 41 Q No, but --
- 42 A Yes, that's correct.
- 43 Q And he concluded, based on his gross examination  
44 of the heart that there was sufficient indicia in  
45 the heart to support his conclusion that there was  
46 cardio myopathy, fair?
- 47 A Based on visible inspection only.

Gordon Keith Chambers

Cross-exam by Mr. Neave (for TASER International)

(cont'd)

1 Q Yes.

2 A Yes.

3 Q And Dr. Lee in -- with respect to his microscopic  
4 description, says with respect to the heart:

5

6 Mildly increased, patchy interstitial and  
7 perivascular fibrosis;...

8

9 A That's on the original autopsy.

10 Q That's correct.

11 A Which the testimony has changed that. Is that  
12 correct?

13 Q No, it has not.

14 A Hmm?

15 Q It has not, but we're not going to debate that.

16 It's --

17 A Didn't we just hear from --

18 Q It wasn't the fibrosis issue. Let's move on.

19 What I'd like you to do, Doctor, is turn to  
20 page 20 of Dr. Ho's report. And he concludes in  
21 this fashion, under the "Conclusions", first  
22 paragraph under that heading:

23 Based on the available ECD human research and  
24 my review of the totality of the  
25 documentation listed above, as well as my  
26 professional education, experience and  
27 background, it is my opinion, to a reasonable  
28 degree of medical certainty or probability,  
29 that the use of the TASER ECD did not cause  
30 or contribute to RD's death.

31

32 You don't agree with that statement?

33 A I don't agree with that, no.

34 Q Next he opines:

35

36 It is also my opinion that RD's elective  
37 decision to resist the police (causing  
38 acidosis), his chronic abuse of alcohol  
39 (causing risk for withdrawal and subsequent  
40 agitation and acidosis) and his underlying  
41 cardiomyopathy put him at an elevated risk  
42 for a fatal cardiac arrhythmia.

43

44 I expect you don't agree with that, either.

45 A I don't agree with that either, no.

46 Q So lastly, Doctor, I've reviewed your file, and  
47 thank you very much for that. This appears to be

Gordon Keith Chambers

Cross-exam by Mr. Neave (for TASER International)

(cont'd)

Cross-exam by Mr. Hira (for Constable Kwesi Millington)

1 a set of handwritten notes, about a meeting with  
2 Dr. Kerr on the 26th of January, is that correct?

3 A Yes.

4 Q What year?

5 A It would be this year.

6 Q Now, if you don't mind I'll just look over your  
7 shoulder.

8 A Sure.

9 Q Can you read number 1, what number 1 says, please.

10 A "Possible", now, to make it clear, these are my  
11 personal notes. They're not -- they were stuff  
12 that I was writing at the time, not part of my  
13 opinion or report.

14 Q Yes.

15 A But at the time [As read]:

16

17 Possible direct effect could cause salvos  
18 and/or multifocal VT. So could take longer  
19 but less likely. Unlikely but possible.

20

21 Q Yes. And there's a time limit there?

22 A If -- but less likely if it was more than 15  
23 seconds. Yes.

24 Q And after -- after the less than -- if less than  
25 15 seconds, what are the next words, "Unlikely but  
26 possible"?

27 A "But possible".

28 Q Thank you.

29 A Mr. Commissioner, you must understand at the time  
30 I'm still in the process of trying to work my way  
31 through what I think has happened, so -- and these  
32 are personal notes.

33 THE COMMISSIONER: We've all been there.

34 A Okay.

35 MR. NEAVE: Thank you, Mr. Commissioner, those are my  
36 questions.

37 THE COMMISSIONER: Now, any other questions?

38

39 CROSS-EXAMINATION BY MR. HIRA ON BEHALF OF CONSTABLE  
40 KWESI MILLINGTON:

41

42 Q Doctor, My name is Ravi Hira, and I represent  
43 Constable Kwesi Millington. I have a few  
44 questions only of you.

45 First, have you given an opinion of this  
46 nature regarding any electrical device?

47 A No.

Gordon Keith Chambers

Cross-exam by Mr. Neave (for TASER International)

(cont'd)

Cross-exam by Mr. Hira (for Constable Kwesi Millington)

1 Q Second, your --  
2 A You mean prior to this?  
3 Q That is correct.  
4 A No.  
5 Q Thank you.  
6 A This is not my preferred career.  
7 Q One can understand why.  
8 A I didn't volunteer for this.  
9 THE COMMISSIONER: And some of us didn't mean to make  
10 it our career.  
11 MR. HIRA: Some of us just want to get out of here,  
12 believe it or not.  
13 A Okay, I'll be quiet, then.  
14 Q Second, Doctor, we've heard evidence that the  
15 Taser, when used in probe mode, causes  
16 electro-skeletal tetany.  
17 A Tetany.  
18 Q Forgive me.  
19 A Yep.  
20 Q Basically muscle, sort of skeletal muscle lockup,  
21 is that a fair statement by me?  
22 A I think it's a very powerful effect, yes.  
23 Q Thank you.  
24 A It's described as such.  
25 Q And you have assumed, as part of your opinion,  
26 that Mr. Dziekanski received the full effects of  
27 the Taser for 31 seconds?  
28 A I think there's -- when you -- certainly the Taser  
29 was fired over a period of 49 seconds. The  
30 printout shows us that, and 31 seconds of  
31 taser-ing. There was some debate that the third  
32 maybe didn't work or not, we'll never know. But I  
33 do understand that even if one lead comes off, if  
34 it's in touch with the ground, you can still have  
35 a complete circuit. So my assumption is this man  
36 was almost continuously tasered for over 49  
37 seconds, or 31 seconds in total.  
38 Q In probe mode.  
39 A No, I think the first three were in probe and the  
40 last two were in stun, that's my understanding.  
41 Q Fair enough. But almost continuously tasered for  
42 31 seconds.  
43 A Yes.  
44 Q All right. Lastly, Doctor, and I'm looking at  
45 page 20 of your report, and I just want to  
46 understand this last sentence of the first  
47 paragraph on that page, you write:

1 Further, the Taser is known to have other  
2 identifiable and potentially fatal biological  
3 pathways that don't apply in the case  
4 physical restraint alone.  
5

6 I've read that correctly?

7 A Yes.

8 Q And did I understand your evidence to be that you  
9 had read the studies of Dr. Bozeman, Dr. Eastman,  
10 and Dr. Ho, more specifically, Exhibits 153, 141  
11 and 145 --

12 A Yes.

13 Q -- prior to giving that opinion?

14 A Yes.

15 Q And that opinion is based on no peer-reviewed  
16 human studies?

17 A That's correct.

18 MR. HIRA: Thank you, those are my questions.

19 THE COMMISSIONER: Thank you very much. You've  
20 obviously put in an incredible amount of time and  
21 effort into this, and I must say I have totally  
22 enjoyed the things you had to say, and thank you.

23 A Thank you.

24

25 (WITNESS EXCUSED)

26

27 THE COMMISSIONER: Shall we adjourn for a bit?

28 MR. MCGOWAN: Yes, five minutes, perhaps to get the  
29 next telephone call organized.

30 THE COMMISSIONER: Thank you.

31

32 (PROCEEDINGS ADJOURNED)

33 (PROCEEDINGS RECONVENED)

34

35 (WITNESS VIA TELECONFERENCE)

36

37 CHARLES ROBERT KERR, a  
38 witness, recalled, warned.

39

40 THE REGISTRAR: Dr. Kerr, we've just brought the  
41 Commissioner in and counsel is now arriving. I  
42 just wish to remind you that you are still under  
43 oath.

44 A Yes, sir.

45 THE COMMISSIONER: Doctor, this is the Commissioner  
46 speaking. I thank you very much for being  
47 available like this. Yes, counsel.

1 CROSS-EXAMINATION BY MR. KOSTECKYJ ON BEHALF OF ZOFIA  
2 CISOWSKI:  
3

4 Q Doctor, it's Walter Kosteckyj, counsel for Zofia  
5 Cisowski.

6 A Yes, sir.

7 Q And I just have a couple of questions for you. It  
8 relates to the -- the medical reports that came  
9 from Poland. Now, there were two reports, and one  
10 was the report which was done by -- for Canada  
11 Immigration. Do you recollect seeing that?

12 A Yes, I do. I don't have them with me today.

13 Q Yeah, I can appreciate that. I'm going to just  
14 direct your attention to two parts of the report.  
15 The first one is found in Section C, "Examining  
16 Doctor's Findings". In that section, there's a  
17 blood pressure taken. That is Exhibit 102, for  
18 the record.

19 Now, Doctor, it shows a blood pressure of 125  
20 over 80. For a man of 40 years of age, what do  
21 you have to say about that blood pressure?

22 A First of all, I do recall reading that and it was  
23 in my notes. That would be entirely within the  
24 normal range.

25 Q In fact, in this document, I'll just remind you  
26 that it says for a person that's under 59, the --  
27 or less, 140 over 80 is within a normal range.  
28 Does that accord with your understanding?

29 A Well, yes. The upper numbers are coming down to  
30 try and reflect stricter control, but the 125 is  
31 well under what would now be considered the upper  
32 range of normal which would be 135 to 140.

33 Q The other thing that I was going to ask you about  
34 comes out of this information, comes out of the  
35 medical report, Section E, also out of the same  
36 exhibit 102. That's the chest X-ray report. Do  
37 you recollect seeing that as well?

38 A Yes, sir.

39 Q And that X-ray report, which is found under  
40 paragraph 3, it talks about chest X-ray  
41 interpretation. It talks about shadows and so  
42 forth and it indicates a normal heart from those  
43 X-rays. Do you recollect that?

44 A Yes.

45 Q Now, from those X-rays, can you make any  
46 determinations about the state of Mr. Dziekanski's  
47 heart?

- 1 A Well, from the report, what one could tell is that  
2 he is not likely to be in significant heart  
3 failure which is backing up of blood and pressure  
4 into the lungs from the heart, 'cause that would  
5 -- generally, if it was advanced, show some signs  
6 in the lungs.
- 7 The heart size is -- being within the range  
8 of normal is very -- I mean it's very -- I mean,  
9 it's very good -- it's good news, I mean, if  
10 there's not gross enlargement of the heart.  
11 Unfortunately, it's not a very sensitive way to  
12 pick up minor abnormalities. But it sounds like  
13 it was -- and I do recall reading that the X-ray  
14 suggested that it was normal.
- 15 Q Okay. Now, there was a previous medical that was  
16 done, and that was apparently done by a Dr.  
17 Jablonska. There were some -- there was a  
18 translated version of Dr. Jablonska's interview  
19 with -- with the RCMP and others. Do you  
20 recollect that? And it's -- just for the record,  
21 it's Exhibit 113 in these proceedings.
- 22 A I remember reading a translated document of his.  
23 I think it's the one you must be referring to.
- 24 Q Okay. Well, I'm just -- the reason I'm bringing  
25 this to your attention is that -- this has come up  
26 a number of times in these proceedings. Dr.  
27 Jablonska indicates - and this is found at around  
28 question 138 in the material - the fact that he  
29 had what she describes as a borderline -- he had a  
30 borderline blood pressure of 140 over 90. Do you  
31 recollect that?
- 32 A Yes, I do.
- 33 Q And that she --
- 34 A I'm not sure I recollect it from that or from  
35 other documents I've seen, but yes, I recall that.
- 36 Q Is 140 over 90 still within the range -- or on the  
37 borderline?
- 38 A It's on the borderline. It would be -- it would  
39 be what I would call the yellow flag, blood  
40 pressure that you'd want to keep an eye on. We  
41 never really would rely on a single reading. We  
42 would want them to monitor it a little more  
43 frequently to make sure it's not reflective of  
44 early high blood pressure, but we would not  
45 probably jump in and treat it at that time.
- 46 Q Now, we do know that the doctor gave him -- I  
47 think it was 25 milligrams of a beta-blocker,

1           although I don't recollect the name of the beta-  
2           blocker.

3           A     It's Metoprolol, I believe.

4           Q     Yes. Now, that dosage, that was a relatively  
5           small dosage, was it not?

6           A     Yes, it was.

7           Q     And the doctor talked about she thought he had a  
8           slightly quickened heartbeat so "I gave him a  
9           meta-blocker (sic) to tune him up a little, a wee  
10          bit." She thought that he -- she went on to say  
11          it may have been a stressful situation, having the  
12          blood pressure taken and so forth.

13          I'm just -- do you find that patients, when  
14          they're in the doctor's office, can have a higher  
15          blood pressure than they might otherwise?

16          A     They can. It's certainly very well described, the  
17          so-called "white coat syndrome". To me it's  
18          always a flag that you've got to watch the blood  
19          pressure and repeat it again.

20          Q     In your report, you found that Mr. Dziekanski's  
21          heart was of a normal size?

22          A     Well, I -- I'm interpreting the pathologist's  
23          report.

24          Q     Right.

25          A     By weight, it was normal weight, 370 grams, which  
26          is normal for a man his size.

27          Q     All right. You didn't find anything particularly  
28          unusual in any of the medical evidence that you  
29          reviewed with respect to Mr. Dziekanski's heart --  
30          heart?

31          A     By medical evidence, you mean the actual heart  
32          evidence by the pathologist and the pre -- the  
33          pre-examinations in Poland?

34          Q     Yes.

35          A     Well, the only statement was that the heart was  
36          slightly dilated. That's very difficult to  
37          quantify post mortem, and especially after being  
38          through the trauma that he had. But that's the  
39          only flag one has that suggests he could have had  
40          a mild cardiomyopathy, but having been through the  
41          episode going on for the preceding half hour or so  
42          before he died, it's very difficult to tell.

43          The heart, when it -- when it -- post mortem,  
44          it will actually go into a contracted state, so  
45          quantifying the size of the heart is somewhat --  
46          you know, it's somewhat difficult. But it does  
47          suggest the possibility of a mild cardiomyopathy,

Charles Robert Kerr

Cross-exam by Mr. Kosteckyj (for Zofia Cisowski)

Cross-exam by Mr. Neave (for TASER International)

1 but would have to be very mild. If it were long-  
2 standing and more severe, one would have expected  
3 the weight to have increased.

4 Q And so your conclusion, as I recollect, it was if  
5 he did have one, it was a very mild -- a mild  
6 case.

7 A Yes, sir.

8 MR. KOSTECKYJ: Thank you.

9 MR. HIRA: Again, Mr. Commissioner, it might be more  
10 efficient if Mr. Neave were to go before me.

11

12 CROSS-EXAMINATION BY MR. NEAVE ON BEHALF OF TASER  
13 INTERNATIONAL:

14

15 Q Dr. Kerr, it's David Neave, counsel for TASER  
16 International.

17 A Yes, sir.

18 Q We spoke after you gave your evidence in chief and  
19 I had requested, with your permission, to send you  
20 some documents including the evidence of Mr.  
21 Enchelmaier and certain academic papers.

22 A Yes, sir.

23 Q And did you have the opportunity, Doctor, to  
24 review those?

25 A Yes, there was a lot there to review, but I tried  
26 my best to go through them.

27 Q My apologies. I trust it's raining in Boston, so  
28 you had lots of time.

29 A I'm not going to tell -- not going to answer that  
30 one.

31 Q Doctor, I've got your opinion from the 5th of May,  
32 2009. That's Exhibit 129 in the proceeding. Can  
33 you tell me, sir, if there were any draft reports  
34 of this document that you prepared?

35 A No, I didn't. There are none. I drafted it  
36 directly onto my computer.

37 Q And the sense I have, Doctor, is you were retained  
38 to review the submission of Dr. Chambers to the  
39 Commission, and particularly to comment upon the  
40 cardiologic aspects of that report, the evidence  
41 and interpreting that evidence to assist Dr.  
42 Chambers' analysis; is that fair?

43 A That was my understanding. I, you know, extended  
44 that a little bit to give my opinions based on the  
45 information that was obtained in that report and  
46 other information I was given in the -- in the  
47 circumstances.

- 1 Q And from the sense of what you're saying, am I  
2 correct, Doctor, that the information that you  
3 received was the information that was in Dr.  
4 Chambers' report coupled with the so-called  
5 "Circumstances" document, about a 12-page  
6 document.
- 7 A That's correct.
- 8 Q Did you -- did you review any other documents in  
9 drafting your opinion?
- 10 A I don't -- no, I did not.
- 11 Q Okay.
- 12 A Just (indiscernible) -- the only ones I reviewed  
13 are the ones that you sent me.
- 14 Q Okay. And am I correct, Doctor, that from your --  
15 and the sense I had from your evidence in chief  
16 was with respect to your work with respect to the  
17 effect of Taser devices on humans, that that had  
18 been restricted to reviewing various literature on  
19 human research; is that fair?
- 20 A Human and animal research. I've reviewed as much  
21 as I could, but I've not had any issue -- I've not  
22 had a circumstances where I've actually been  
23 involved in seeing somebody being, you know,  
24 tasered, or doing experimental work myself with  
25 Tasers.
- 26 Q Right. Thank you. Now, I understand that, at  
27 some point in time, there was a telephone call  
28 between yourself and Dr. Tseng with respect to  
29 certain rhythm strips?
- 30 A No. A telephone conversation did not take place.
- 31 Q Okay. Was there a meeting?
- 32 A There was an e-mail exchange.
- 33 Q Oh, okay. And what was the issue that was being  
34 addressed in the e-mail exchange, Doctor?
- 35 A Well, it was just one e-mail that I sent, and that  
36 was in response to an interpretation of the  
37 initial ECGs from the -- that were recorded -- or  
38 electrical recordings from the AED on site during  
39 the attempt at resuscitation.
- 40 Q Okay. And did that deal with the asystole issue?
- 41 A Yes.
- 42 Q And did it also address whether there was any  
43 indication on the rhythm strips of the heart being  
44 in either ventricular tachycardia or ventricular  
45 fibrillation?
- 46 A I gave my opinion about -- my interpretation was  
47 that it was asystole with -- what -- some

- 1 possibility of intermittent electrical activity.  
2 There was also a lot of artifact on it which often  
3 is the case in these acute circumstances, making  
4 it difficult to be sure there was not a  
5 ventricular arrhythmia. But my interpretation was  
6 that it was -- was asystole with occasional --  
7 what I -- what we call agonal -- or possible  
8 intermittent agonal electrical signals which are a  
9 sign of -- you know, very wide electrical signal  
10 -- a sign that the heart is generating very slow  
11 conduction through, if any, electrical activity at  
12 all.
- 13 Q And these rhythm strips, from my recollection,  
14 were obtained on the LifePak 12 during the time  
15 that CPR is being administered to Mr. Dziekanski.  
16 Is that your -- is that your belief?
- 17 A My recollection is that there were two, and I  
18 believe one was the initial strip through the AED  
19 and the other was during the -- was during the  
20 resuscitation efforts, yes.
- 21 Q And does -- does the application of CPR -- or can  
22 it cause an electrical artifact to appear on, for  
23 example, a Lifepak 12 rhythm strips?
- 24 A It can cause an artifact.
- 25 Q Yes.
- 26 A Whether it's an electrical one or whether it's --  
27 it just actually causes deflection of the -- I  
28 mean, if you take an electrode and you jiggle it,  
29 it will cause a deflection on the screen.
- 30 Q Right. Now, Doctor, when you provided your  
31 opinion, did you have the transcript of Mr.  
32 Enchelmaier's evidence with respect to his  
33 monitoring?
- 34 A No, I did not.
- 35 Q And you would agree from -- and you've had an  
36 opportunity to review that, Doctor?
- 37 A Yes, I did.
- 38 Q And, in essence, what -- and I'm going to  
39 summarize that. You're now aware that Mr.  
40 Enchelmaier is a person with Level 1 first aid  
41 training, correct?
- 42 A According to -- yes, according to the transcript,  
43 yes.
- 44 Q And he was a current -- at the time of this  
45 matter, he was current with CPR?
- 46 A According to -- I don't know what Level 2 -- Level  
47 1 is, but I imagine that it is consistent with

- 1 CPR.
- 2 Q Okay. He was a Level 1 first responder. He was a  
3 former volunteer with the -- a former volunteer  
4 ambulance officer in Australia. You now  
5 understand that?
- 6 A I do, sir.
- 7 Q And he was also received some training as a  
8 lifeguard in California, fair?
- 9 A Yes.
- 10 Q And his evidence, to summarize it, is that between  
11 the period from the -- the application of the  
12 handcuff to Mr. Dziekanski to approximately two  
13 minutes before the arrival of Richmond Fire - and  
14 that duration is in the seven to nine minute range  
15 - that he checked the carotid pulse of Mr.  
16 Dziekanski on three separate occasions. You've  
17 seen that in the transcript; is that fair?
- 18 A Yes.
- 19 Q And the first check, he described it -- I'm  
20 paraphrasing his evidence for convenience, but he  
21 described it in this fashion, as a "very strong  
22 fast pulse on the neck, like someone had been  
23 running," and describes it again as "strong and  
24 fast." You'll recall that from reviewing the  
25 transcript, fair?
- 26 A Yes.
- 27 Q The second check was some minutes later, although  
28 it's uncertain as to when that exactly occurred,  
29 but he describes it in this fashion, and I'm  
30 paraphrasing again. "It was more of a person  
31 who'd been at rest, a slower pulse," and again  
32 felt a good pulse in his neck in the carotid  
33 pulse, and then he says with respect to the  
34 breathing, "The breathing was clear." Then he  
35 further describes the pulse as being as such -- in  
36 this manner, "A person who had been sitting for a  
37 while, quite a while, nowhere near as fast as  
38 before but still a strong beat but not as fast."  
39 Do you recall that evidence, Doctor?
- 40 A Yes, I do.
- 41 Q And then the third check, and the third check was  
42 approximately two minutes before Richmond Fire  
43 arrives, and Mr. Enchelmaier describes the pulse  
44 as a low pulse, still a clear pulse in his carotid  
45 pulse. You recall that from your review, Doctor?
- 46 A Yes.
- 47 Q And in these -- in this case, then, if Mr.

1 Enchelmaier is -- is, as he says, monitoring the  
2 pulse and obtaining a pulse and observing that Mr.  
3 Dziekanski is breathing, does that rule out that  
4 his heart was in ventricular fibrillation during  
5 that period?

6 A If the observations are accurate, and it certainly  
7 sounds from his description that that was the  
8 case, I -- the only first-hand observation I have  
9 is on the video where he took the pulse for the  
10 first time.

11 Q Yes.

12 A And I did not -- there was no obvious evidence  
13 that he was observing respiration, but he was off  
14 of the video within about ten seconds.

15 Q Right.

16 A So I can only comment on that; I don't know about  
17 the others. One would normally want to monitor  
18 for longer than that. I don't -- we don't know  
19 the actual rates, according to his testimony. I  
20 don't think any logs were kept about that. But it  
21 certainly -- if he's accurate, it would suggest  
22 that had some -- that he had some circulation at  
23 that time.

24 Q And would -- would it also, Doctor -- and on the  
25 assumption that he is actually feeling the pulse,  
26 as he says, and monitoring the breathing in the  
27 manner that he says he monitored it, rule out that  
28 Mr. Dziekanski was in a state of ventricular  
29 tachycardia during the period up to and including  
30 his last monitoring?

31 A Again, if it were -- you know, if the monitoring  
32 were accurate, yes.

33 MR. NEAVE: Thank you. Thank you, Doctor, those are my  
34 questions.

35 MR. HIRA: I have no questions.

36 THE COMMISSIONER: Doctor, once again, thank you very  
37 much for your time, and good luck with your  
38 endeavours in Boston.

39 A Okay, sir. Thank you very much.

40  
41 (WITNESS EXCUSED)

42  
43 THE COMMISSIONER: Now, I understand the next order of  
44 business is the motion with reference to the  
45 admissibility and I -- do I understand counsel  
46 have to be notified?

47 MR. MCGOWAN: They do, Mr. Commissioner.

Submissions by Mr. Rosenbloom (for Government of Poland)

1 THE COMMISSIONER: Well, we'll break awaiting that.

2 MR. MCGOWAN: Thank you.

3 THE REGISTRAR: The hearing will now recess.

4

5 (PROCEEDINGS ADJOURNED)

6 (PROCEEDINGS RECONVENED)

7

8 SUBMISSIONS BY MR. ROSENBLOOM ON BEHALF OF THE

9

GOVERNMENT OF POLAND:

10

11 MR. ROSENBLOOM: Thank you, Mr. Commissioner. I appear  
12 to speak to the matter of the admissibility of the  
13 report of Mr. Grant Fredericks.

14

15 First of all, the history behind this report.  
16 I can speak for myself and I believe I can speak  
17 for Mr. Kosteckyj, and I assume for most of the  
18 other counsel in this room. I knew absolutely  
19 nothing about the initiative of my learned friend,  
20 Mr. Butcher, to seek out this report, to seek out  
21 a report from an individual in the field of  
22 forensic video analysis until I received the  
23 report in the afternoon of Monday of this week.

24

25 Now, appreciating that fact, that I  
26 certainly, as one party, knew nothing about it and  
27 I stand corrected from Mr. Butcher if somehow or  
28 another an e-mail slipped by me, but I know if it  
29 did, it slipped by my friend, Mr. Kosteckyj, too.  
30 No notice whatsoever was given that this  
31 initiative was being taken over the weeks leading  
32 up to its service on Monday. I need not inform  
33 you that the Inquiry had intended to conclude its  
34 oral testimony, I believe, today or tomorrow, and  
35 we were scheduled to proceed towards written and  
36 final argument.

37

38 That being the history of this, I want to  
39 state very clearly to you, Mr. Commissioner, that  
40 I recognize that in an inquiry of this sort, the  
41 customary rules of evidence do not apply, that  
42 there are liberties afforded to you and, indeed,  
43 to all counsel that would not prevail in a court  
44 of law. I also recognize, Mr. Commissioner that  
45 you have made rulings throughout this hearing to  
46 accommodate counsel in situations which, again,  
47 would not -- would not meet the test in the normal  
judicial proceedings in a court.

48

49 Recognizing the fact that you have the  
liberty to relax the rules of evidence, I do not

1           oppose the admissibility of this report on the  
2           basis of the timing issue, albeit that I am  
3           concerned about it. I think it was avoidable. I  
4           think that there could have been courtesies to  
5           counsel to inform counsel that such an initiative  
6           was underway so that we, at our end, could have at  
7           least started investigating what experts might be  
8           available in the field and might have at least  
9           prepared ourselves, to some extent, to meet the  
10          case that might have been advanced in a report  
11          from Mr. Butcher's end.

12           In spite of these remarks, I do recognize  
13          that the rules are not as we would normally  
14          practice them in court, and I do not oppose the  
15          admissibility on the issue of proper notice. I  
16          oppose the admissibility of the report on other  
17          issues altogether.

18           The first one is this: It relates to whether  
19          or not this gentleman, who holds himself out as a  
20          forensic video analyst, is an area of expertise  
21          that should be recognized in our courts, and  
22          whether, as a result, the report can be tendered  
23          as expert opinion. Having said that, you are in a  
24          difficult position, Mr. Commissioner, 'cause I  
25          think in normal legal process, you would have the  
26          benefit of having the expert before the court and,  
27          in this case, it would be Mr. Butcher who would  
28          make application to qualify the expert as an  
29          expert in the field of forensic video analysis.

30          THE COMMISSIONER: As I understand, though, your first  
31          point is not his expertise, but rather the field  
32          he's in is the subject matter of expertise.

33          MR. ROSENBLOOM: That is correct, if I didn't  
34          articulate that satisfactorily.

35           So the point I make is that, in a normal  
36          process, you would have the benefit of the witness  
37          in the stand. There would be a qualification  
38          process taking -- that would take place by counsel  
39          tendering the evidence. Then, of course, other  
40          counsel could cross-examine on that issue, and  
41          there would then be a ruling.

42           We don't have that luxury here for obvious  
43          reasons. So we are -- unfortunately have to  
44          support our positions based upon the report and  
45          the resumé of expertise as is set out by Mr.  
46          Fredericks in the first two pages of his report.

47           Now, to that end, I --

Submissions by Mr. Rosenbloom (for Government of Poland)

1 MR. BUTCHER: I would say on the c.v. as well.

2 MR. ROSENBLOOM: I'm sorry, what -- what am I missing  
3 here?

4 MR. BUTCHER: Tab 2.

5 MR. ROSENBLOOM: And when did that come to  
6 (Indiscernible - no microphone)

7 MR. BUTCHER: This morning.

8 MR. ROSENBLOOM: Oh, I see. Well --

9 MR. BUTCHER: On your desk (indiscernible - no  
10 microphone).

11 MR. ROSENBLOOM: Well, what was served on me -- yes,  
12 what was served on me as of Monday was this resumé  
13 that is page 1 and 2, and my friend draws to my  
14 attention, and I -- he dropped this off in front  
15 of us this morning, late morning, is now indeed a  
16 c.v. at Tab 2.

17 I wouldn't mind a moment, if I may, in just a  
18 quick review to make -- before I make the  
19 following points. Thank you.

20 Now, in respect to this man's background,  
21 firstly I want to speak to the issue of whether  
22 this area of which my friend wishes to qualify the  
23 witness as an expert is an area of expertise that  
24 has been accepted in the courts. My friend has  
25 provided cases that clearly show that it has been  
26 accepted in the courts.

27 The question I have for my learned friend -  
28 and he can respond - is in any of the cases he  
29 cites, was there a challenge to the issue of  
30 expertise leading to a ruling by the court that  
31 this area of expertise should be recognized by the  
32 court and that the evidence should then be  
33 admissible.

34 The -- Mr. Justice Sopinka in the Supreme  
35 Court of Canada decision of *Mohan, Her Majesty the*  
36 *Queen v. Mohan*, and I believe cases have been  
37 photocopied for me and can be circulated to the  
38 parties. Or have they already been circulated?

39 THE COMMISSIONER: I don't see *Mohan* here.

40 MR. ROSENBLOOM: You have the *Mohan* case?

41 THE COMMISSIONER: I do not see *Mohan* here.

42 MR. ROSENBLOOM: I see.

43 MR. BUTCHER: It's not in my book.

44 THE COMMISSIONER: At Tab what?

45 MR. BUTCHER: It's not in my book.

46 MR. ROSENBLOOM: No, it -- I've had it photocopied by  
47 the Commission and it will be circulated at this

1 time. I'll wait for its circulation.

2 The facts of this case relate to evidence of  
3 a psychiatric nature and whether the expertise  
4 invited on the court was appropriate. And if you  
5 would be good enough to turn to page 6 -- excuse  
6 me, actually, on this issue, turn to page -- page  
7 8 down at the bottom, paragraph 28 under the  
8 heading "A Properly Qualified Expert".

9 Let me stop first and say this: I may be the  
10 only one in the room, but I had never heard of the  
11 area of photogrammetry until Monday of this week.  
12 Maybe others have. It was certainly novel to me,  
13 and I suggest to you it is clearly a new areas of  
14 purported expertise.

15 THE COMMISSIONER: The counting of pixels.

16 MR. ROSENBLUM: Pardon me?

17 THE COMMISSIONER: The counting of pixels.

18 MR. ROSENBLUM: Yes. Bur I believe it's more than  
19 just the counting of pixels. It's the question of  
20 mathematical calculations that apply after the  
21 count of those pixels.

22 In any event, Mr. Justice Sopinka, speaking  
23 at paragraph 28 says, I quote -- or said, and I  
24 quote:

25  
26 In summary, therefore, it appears from the  
27 foregoing that expert evidence which advances  
28 a novel scientific theory or technique is  
29 subjected to special scrutiny to determine  
30 whether it meets a basic threshold of  
31 reliability and whether it is essential in  
32 the sense that the trier of fact will be  
33 unable to come to a satisfactory conclusion  
34 without the assistance of the expert. The  
35 closer the evidence approaches an opinion on  
36 an ultimate issue, the stricter the  
37 application of this principle.

38  
39 I hope that may be of some assistance to you in  
40 reviewing this matter.

41 I secondly suggest that the -- what this man  
42 does, Mr. Fredericks, as I read his report, is he  
43 takes the Pritchard video and he does a frame-by-  
44 frame examination of it, much as we have done here  
45 in these proceedings, and he then applies this  
46 area of photogrammetry to establish an opinion  
47 which I will come to a little further on in this

1 report. But you will see that he speaks of taking  
2 the area of photogrammetry and applying this area  
3 of -- he calls it scientific analysis -- to come  
4 up with the conclusions as set out in his opinion.

5 Now, the situation is in my review of his  
6 c.v., and I of course saw the only -- looked at  
7 the most recent one in the book moments ago, but I  
8 look at his education and it is limited to a B.A.  
9 in Broadcast Communications. I see nowhere, and  
10 my friend will correct me, especially with respect  
11 to Tab 2, but certainly in the c.v. that is  
12 attached as pages 1 and 2 to the report served on  
13 us on Monday, I see absolutely nothing about a  
14 background in photogrammetry with the exception of  
15 the fact that he speaks of teaching a course at  
16 the University of Indianapolis where that is part  
17 of the course. I don't see any educational  
18 achievements in the area of photogrammetry, and  
19 yet I suggest to you that the report and its  
20 conclusion is founded upon the applying principles  
21 of photogrammetry to the Pritchard video.

22 Now, I want to come to the last of my points,  
23 which is, in my opinion, the most significant in  
24 terms of the responsibility that you, Mr.  
25 Commissioner, have in making a ruling on the  
26 admissibility of this report. I'm going to  
27 suggest to you that there is very, very little  
28 probative value to this report. I know my friends  
29 can respond by saying the issue of the probative  
30 value of a report can go to weight at the  
31 conclusion of a hearing. But I suggest in the  
32 circumstances that we're facing here with a report  
33 that was served on us on a Monday, for a hearing  
34 that was to conclude by Friday, that it is within  
35 your mandate, Mr. Commissioner, to assess the  
36 probative value of the report and weigh it against  
37 the prejudicial effects that ruling in favour of  
38 the admissibility of the report would put on  
39 certainly myself and Mr. Kosteckyj, for our  
40 representations, in having to go out at such a  
41 late date and find people that would be able to  
42 provide opinions and acquire these opinions within  
43 a reasonable period of time.

44 Firstly, speaking to the probative value of  
45 the report, I want to speak first to the latter  
46 part of the report, and Mr. Commissioner, I don't  
47 know whether you have read the report yet or not.

1 THE COMMISSIONER: Not to any intense degree.

2 MR. ROSENBLOOM: Thank you. The latter part of the  
3 report, as I read it, speaks to the issue of  
4 whether Corporal Robinson placed his knee on the  
5 head of Mr. Dziekanski.

6 Now, let me first say I maybe missed this in  
7 the proceedings, but I never heard anyone  
8 suggesting, in terms of the evidentiary base of  
9 these proceedings, that someone was suggesting  
10 that Corporal Robinson placed the knee on the  
11 head. I believe the issue was whether it was  
12 placed on the neck and whether it was placed on  
13 the back of Mr. Dziekanski.

14 But in this report, Mr. Fredericks goes  
15 through a series of slides and concludes -- and I  
16 -- and concludes that Mr. -- that Corporal  
17 Robinson did not place the knee on the head.

18 There are two points I want to make about it.

19 THE COMMISSIONER: Just a minute, now. Are you able to  
20 show me that --

21 MR. ROSENBLOOM: Yes, I am.

22 THE COMMISSIONER: -- page? Where?

23 MR. ROSENBLOOM: Yes. Page 20, mid-paragraph [as  
24 read].

25  
26 Dziekanski's jacket colour is visible on the  
27 right side of Corporal Robinson's right leg.  
28 This image helps to show that the Corporal's  
29 leg is to the left of Dziekanski's head and  
30 not on his head.

31  
32 Now, I have two points to make. Firstly, I  
33 say it's of no probative value because nobody, I  
34 don't believe, has suggested that there -- that  
35 the knee is on the head. But secondly, and more  
36 importantly -- and I'm going to be proven wrong by  
37 my friend if he can satisfy, I guess, you of this.  
38 I don't see where there is any science applied  
39 whatsoever to that portion of the report. I don't  
40 see anything about video analysis other than what  
41 you or I or anybody else could do and have been  
42 doing throughout these proceedings by looking at  
43 frames on the screen here in the hearing room.

44 I do not see in the analysis that I have made  
45 of this man's report that he brings any science to  
46 that aspect of his report, that he doesn't use  
47 even the area of photogrammetry in analyzing the

1 situation. He does nothing more than with his  
2 naked eye view the frames as you and I or anyone  
3 else has the ability to do.

4 So, on probative value, I say there is no  
5 probative value to the latter part of his report  
6 as it deals with the -- Corporal Robinson's  
7 conduct after Mr. Dziekanski has hit the ground.

8 I'd now like to speak to the earlier part of  
9 the report which deals with Mr. Fredericks'  
10 application of photogrammic techniques, and he  
11 concludes in his report - and I'm speaking here  
12 at, first of all, page 11, three lines down from  
13 the top [as read]:

14  
15 For the next three seconds --

16  
17 And he's speaking of the three seconds preceding  
18 the deployment of the Taser. Mr. Fredericks says:

19  
20 -- Dziekanski takes three distinct steps  
21 forward towards Corporal Robinson and  
22 Constable Rundel.

23  
24 And then, in his summary at the end, he repeats  
25 just that, and I will give you the page. It's  
26 page 22 where he says, second paragraph, last  
27 sentence:

28  
29 Giving consideration to this science --

30  
31 THE COMMISSIONER: Okay. Let me get it. Page 22?

32 MR. ROSENBLOOM: Twenty-two, last page of the report.

33 THE COMMISSIONER: Yes/

34 MR. ROSENBLOOM: Giving -- second paragraph, second  
35 sentence, line 3:

36  
37 Giving consideration to the science and to my  
38 observations of the stabilized version of the  
39 pre-Taser events, I have formed the opinion  
40 that Dziekanski took three distinct steps  
41 towards the officers while he held the  
42 stapler in his right hand.

43  
44 Now, I say, Mr. Commissioner, that even that  
45 opinion is of very little probative value to this  
46 proceeding. What does that mean, "three distinct  
47 steps"? He does not say he took three normal

1 steps, which would normally be, what, 30 inches  
2 per step, who knows. But there is no suggestion  
3 that, in reading this, that these are normal steps  
4 forward. "Distinct steps", what does that mean?  
5 It means, presumably, some movement with a foot in  
6 front of the other foot. But it gives you, Mr.  
7 Commissioner, absolutely no sense of whether the  
8 supposed advance by Mr. Dziekanski on these  
9 officers is anything more than a shuffle back and  
10 forth or whether it is a true attack on these  
11 officers that would cause them to believe that  
12 they were in some form of danger.

13 THE COMMISSIONER: Just a moment now. It would seem to  
14 me that any movement forward by Dziekanski towards  
15 the officers would be something that's relevant.

16 MR. ROSENBLOOM: Would be something...?

17 THE COMMISSIONER: That is relevant.

18 MR. ROSENBLOOM: I'm not suggesting it's not relevant.

19 I'm suggesting in terms of probative value. If  
20 you are not informed through this opinion that  
21 these steps are significant steps of normal  
22 advancement, if you follow my point, towards an  
23 attack, I say it's of little probative value.  
24 It's relevant, and I don't suggest otherwise. But  
25 the issue is how probative it is in terms of  
26 assisting you in having to make a decision on what  
27 was the perception of the officers on the day in  
28 question.

29 If, Mr. Commissioner, this expert provided an  
30 opinion to you that Mr. Dziekanski took three  
31 normal steps, a distance of eight feet, seven  
32 feet, towards the officers, that obviously is not  
33 only relevant but of probative value. But where  
34 the opinion is nothing more than "he took three  
35 distinct steps", I suggest to you that does not  
36 assist you within a country mile of coming to a  
37 conclusion as to whether such an advancement was  
38 -- could be interpreted as being dangerous to the  
39 officers.

40 To that end, where I'm now speaking of  
41 probative value and -- in the context of  
42 admissibility of the report, I want to go back to  
43 the Supreme Court of Canada decision in *Mohan*.

44 THE COMMISSIONER: Just before you do that, now, do you  
45 wish to make any comment as to how he reaches that  
46 conclusion?

47 MR. ROSENBLOOM: Do I want to make any comment on it?

1 He reaches that conclusion by applying -- doing an  
2 analysis of the video using a technique called  
3 photogrammetry to determine whether or not Mr.  
4 Dziekanski's body has shrunk in size between the  
5 first second and the third second of his analysis.

6 He has done measurements on a frame -- on a  
7 frame he uses. He has photograph A and photograph  
8 B. Photograph A is at one second, commencement of  
9 one second, photograph B, I believe is at the  
10 conclusion of three seconds. He analyzes those  
11 three seconds.

12 THE COMMISSIONER: Do we know whether or not the camera  
13 is in the same place as --

14 MR. ROSENBLOOM: Whether the what is?

15 THE COMMISSIONER: Do we know whether or not the camera  
16 taking these shots is in the same place when these  
17 pictures are taken?

18 MR. ROSENBLOOM: We do not. Nor does this gentleman  
19 suggest that he knows that. He does not indicate  
20 in the report that, indeed, the camera lens has  
21 been stable and stationary throughout the  
22 photographing of this incident. We have that  
23 factor.

24 We have other factors in terms of the  
25 analysis done by this gentleman that the -- Mr.  
26 Dziekanski's body is of a lesser image at the  
27 three-second period than at the one-second period,  
28 which leads him to conclude that Mr. Dziekanski is  
29 moving away from the camera.

30 In doing that, he has measured the collar,  
31 the top of the collar of Mr. Dziekanski to a fixed  
32 position on the top of the counter and done a  
33 measurement with image A and then image B. And he  
34 concludes that there is a diminished distance in  
35 measurement between A and B, and therefore  
36 concludes that there's been a diminished image of  
37 Mr. Dziekanski in that time.

38 I don't know if this is the time to argue  
39 these kind of things. Mr. Dziekanski can be  
40 leaning forward and that will of course bring a  
41 diminishment in the measurement. There are all  
42 kinds of variables that I will suggest to you  
43 affect the analysis that is done in determining  
44 whether there has or has not been a diminishment  
45 in image between the two frames.

46 THE COMMISSIONER: Or likewise in the first frame was  
47 he leaning towards the camera.

1 MR. ROSENBLOOM: That too. There are -- I could go on  
2 with all kinds of variables that speak to this  
3 issue. Another one that's of interest is that in  
4 image 1, the -- the -- Mr. Fredericks does his  
5 distance from the collar of Mr. Dziekanski down to  
6 the counter, but when he does the analysis on  
7 image 3 -- excuse me, image B, Mr. Dziekanski has  
8 moved to his left -- or to his right, I can't  
9 remember which it is -- and again, so he does his  
10 analysis from the top of the collar to the  
11 counter, but not at the same line of longitude  
12 because Mr. Dziekanski has moved. So the axis has  
13 moved.

14 Well, that would be all well and good if Mr.  
15 Pritchard was filming this at a 90-degree angle  
16 head on. But it's obvious from viewing the video  
17 that Mr. Pritchard is filming at an angulation, at  
18 an angle. That being the case, when there are  
19 measurements being taken that are not at exactly  
20 the same point -- and I appreciate why they  
21 weren't is because Mr. Dziekanski didn't remain  
22 immediately stationary.

23 The fact is, this kind of variable affects  
24 the result as to many, many other things from his  
25 body being flexed, his body being extended and so  
26 on.

27 Now, I don't know how far to go in respect --  
28 THE COMMISSIONER: Is there any evidence that the  
29 counter is straight rather than curved, or whether  
30 the counter is at right angles to Dziekanski's  
31 back?

32 MR. ROSENBLOOM: I doubt there is evidence that the  
33 counter is right angles to Mr. Dziekanski's back  
34 because we all know Mr. Dziekanski, like anybody  
35 in a dynamic situation --

36 THE COMMISSIONER: I'm speaking of the counter, not  
37 him.

38 MR. ROSENBLOOM: The counter, I don't know. Just from  
39 viewing it, it's difficult to say. There may be  
40 something in evidence that I didn't hear in that  
41 regard.

42 But going back to the issue of the probative  
43 value of this evidence, the Supreme Court of  
44 Canada in the very decision I cited previously,  
45 the *Mohan* case is of some assistance in giving  
46 you, Mr. Commissioner, the authority to consider  
47 the probative value in the context of prejudice.

1 And the prejudice here, of course, would be that  
2 this is an area where there are very, very few  
3 experts. It would obviously be a matter of cost  
4 to the parties. It delays the proceedings from  
5 your scheduled conclusion of evidence this week,  
6 and things of that sort.

7 The page I want to refer to in Mr. Justice  
8 Sopinka's decision is at page 6, paragraph 18, if  
9 you have that in front of you. Again, page 6,  
10 paragraph 18 down at the bottom of the page. His  
11 Lordship said, and I quote:

12  
13 Relevance is a threshold requirement for the  
14 admission of expert evidence as with all  
15 other evidence. Relevance is a matter to be  
16 decided by a judge as question of law.  
17 Although *prima facie* admissible if so related  
18 to a fact in issue that it tends to establish  
19 it, that does not end the inquiry. This  
20 merely determines the logical relevance of  
21 the evidence. Other considerations enter  
22 into the decision as to admissibility. This  
23 further inquiry may be described as a cost  
24 benefit analysis, that is "whether its value  
25 is worth what it costs."  
26

27 And he refers to *McCormick on Evidence*, third  
28 edition.

29  
30 Cost in this context is not used in its  
31 traditional economic sense but rather in  
32 terms of its impact on the trial process.  
33 Evidence that is otherwise logically relevant  
34 may be excluded on this basis, if its  
35 probative value is overborne by its  
36 prejudicial effect, if it involves an  
37 inordinate amount of time which is not  
38 commensurate with its value or if it is  
39 misleading in the sense that its effect on  
40 the trier of fact, particularly a jury, is  
41 out of proportion to its reliability.  
42

43 Now, I say, Mr. Commissioner, that in this  
44 particular matter, especially where you have a  
45 liberty that a judge wouldn't have, and that is to  
46 be more liberal in the approach to admissibility  
47 of evidence, that in weighing the probative value

Submissions by Mr. Rosenbloom (for Government of Poland)

Submissions by Mr. Kosteckyj (for Zofia Cisowski)

1 of this evidence, I'm going to suggest, as I have,  
2 that the probative value is small in value, yet  
3 consider it weighted against the inconvenience to  
4 these proceedings, having gotten this report when  
5 we did, requiring the Commission to sit additional  
6 days well beyond the date you intended to conclude  
7 oral testimony, the inconvenience to certainly Mr.  
8 Kosteckyj and myself in putting together  
9 information, learning more about the area that  
10 I've certainly never heard of, being in a position  
11 to cross-examine this individual and, if  
12 necessary, to file rebuttal reports.

13 So there is the balance that has to be  
14 considered, and it is my submission that, in  
15 weighing that balance between probative value and  
16 inconvenience, not only to the two parties over on  
17 this side, but to the entire Commission, that the  
18 convenience -- the probative value is outweighed  
19 by the inconvenience to the parties, and I make  
20 application that this report be ruled  
21 inadmissible. Thank you.

22  
23 SUBMISSIONS BY MR. KOSTECKYJ ON BEHALF OF ZOFIA  
24 CISOWSKI:

25  
26 MR. KOSTECKYJ: Mr. Commissioner, Walter Kosteckyj,  
27 counsel for Zofia Cisowski. I join with my friend  
28 in his submissions, and I go somewhat further with  
29 respect to this issue of my complaint. I tell you  
30 that in my submission, the problem with this is  
31 that this expert is telling you what you're  
32 seeing. That is -- this is outside the area that  
33 this expert has been qualified in before, from  
34 what I can determine. I can say that I received  
35 this material Tuesday morning while we were in the  
36 hearing. So I have had very little opportunity to  
37 review with care. But I am reviewing the case  
38 authority that has even been provided by my  
39 learned friend.

40 Generally speaking, what this expert does is  
41 provide enhancement. My understanding is that  
42 what that means is if there is a video film that  
43 is not clear, he can make it clearer.

44 THE COMMISSIONER: Well, I didn't understand that to be  
45 it. I didn't understand that we're looking at  
46 clarity.

47 MR. KOSTECKYJ: Yes, but --

1 THE COMMISSIONER: I thought we were looking at  
2 measurements.

3 MR. KOSTECKYJ: And that's exactly right. From what I  
4 can tell from any of the case authority, he's  
5 never been qualified by any court to provide that  
6 assistance. I'm taking a look at the cases which  
7 are found at the materials provided by learned  
8 counsel. Starting at Tab 4 of the material, this  
9 is **R. v. Brown**.

10 MR. BUTCHER: No. Tab 4 is a summary provided back --

11 MR. KOSTECKYJ: Yes.

12 MR. BUTCHER: -- to -- provided to me by the lawyer in  
13 Alberta.

14 MR. KOSTECKYJ: All right. And this was talking about  
15 -- none of it had to do with measurement. If you  
16 take a look at the second full paragraph, it tells  
17 you what the purpose of the expertise was and it  
18 really had to do with an enhancement of the  
19 quality of the video.

20 The **Gill** case was a similar case which is  
21 found at the next tab where it was considered.  
22 This talks about admitting the enhanced videotape.  
23 This was, once again, a question of enhancing a  
24 document so that it could be -- it was clearer for  
25 the viewer. But once again, he was not making a  
26 determination, telling you what you were seeing.

27 In paragraph 29 -- and I find this citation  
28 interesting, the **R. v. Nikolovski**.

29  
30 ...a videotape can and should speak for  
31 itself...

32  
33 And that's what the court had decided in that  
34 case, and that's essentially part of what I'm  
35 arguing to you today.

36 This is different from breaking down the  
37 video frame by frame. This is different from  
38 providing different forms of slow motion, all of  
39 which nobody is complaining about and which have  
40 been done in this case. This is about an entirely  
41 different type of expertise, for which this expert  
42 has never, as far as I know, been qualified.

43 When I look through the remainder of the  
44 cases, it's the same type of thing. I look at the  
45 British Columbia case of -- which is found at Tab  
46 8, **Her Majesty v. Phillip Thompson Cooper**, and it  
47 talks about the forensic video evidence at page 12

1 of 25. And they talk about "Constable Fredricks"  
2 (sic), who I believe is who we're talking about  
3 here:

4  
5 ...including digitization and analysis of  
6 video.

7  
8 This was, once again, about enhancing videos so  
9 that you would be able to see what was on the  
10 images, not to deal with measurement.

11 The two cases that I would take you to are  
12 ***Her Majesty The Queen v. J-L.J.***, respondent, a  
13 Supreme Court of Canada case and specifically to  
14 page 7 where it talks about subject matter of the  
15 inquiry. It discusses the ***Mohan*** case in paragraph  
16 30, and my friend has already gone through that  
17 with you. Then it talks about novel scientific  
18 theory or technique and it talks about the test in  
19 Canada as opposed to the United States. It talks  
20 about the reliable foundation test and where it  
21 differs from our own, and:

22  
23 ...whether the theory or technique can be and  
24 has been tested.

25  
26 In this case, my friend has already gone  
27 through with you all the various variables that he  
28 has concerns with and which I join him in. I say  
29 that the relevance that, of course, this area has  
30 never been opined before by this expert, to my  
31 knowledge, and my friend may correct me on that.  
32 There's no evidence that it's been subjected to  
33 peer review and publication that I'm aware of.  
34 From what little I understand about it, this is in  
35 fact an area that has been pioneered by this  
36 particular gentleman, Mr. Fredericks.

37  
38 ... the known or potential rate of error or  
39 the existence of standards.

40  
41 Well, we already know that there are so many  
42 variables as to whether Mr. Pritchard was standing  
43 still, whether he was moving in any way. In my  
44 respectful submission, it fails on that test, and  
45 I would take you to page 9 'cause it starts  
46 talking about approaching the ultimate issue.  
47 This is what I say about the fact that this is an

1 opinion not in the general sense, like a medical  
2 opinion, but it's actually telling you what you  
3 are seeing, replacing your view. And of course  
4 the point is the closer the evidence approaches an  
5 opinion on the ultimate issue, the stricter the  
6 applications of the principle of whether or not  
7 this evidence should be allowed in.

8 I found the summary in the **Taylor v. Liung**  
9 case, which I've also handed up to you, to be  
10 useful to me in reviewing the case authority and,  
11 in particular, at page 9, the legal test for  
12 admissibility is broken down. A review is done of  
13 all the modern authorities and a review of the  
14 **Mohan** decision. It talks about the admission of  
15 expert evidence is based upon the four bases  
16 there: relevance, necessity, absence of  
17 exclusionary rule, properly qualified expert.

18 When you're talking about relevance, as you  
19 read through the determination of these cases,  
20 relevance goes to the issue of reliability. There  
21 is, in relevance, a large determinant and that is  
22 reliability. I say that's missing here.

23 That is set out in the discussion at  
24 paragraph 60 in the discussion of the **Mohan** case  
25 where they talk about polygraphs. At paragraph  
26 61, it talks about once again in the novel test in  
27 that -- in that large paragraph under paragraph 21  
28 where it's quoting the **Wolfen v. Shaw** case. If  
29 you look just past where the **Merrill Dow**  
30 **Pharmaceuticals Inc.** case is talking about, it  
31 talks about:

32  
33 ...in favour of a reliability and relevance  
34 test. The general acceptance test has never  
35 been accepted in Canada but has been used pre  
36 **Mohan...**

37  
38 It goes on to talk about, towards the bottom,  
39 after the **Offshore Petroleum** case:

40  
41 Consideration of whether the PET scan is  
42 'novel' is undertaken here not to determine  
43 admissibility but to decide whether a  
44 stricter scrutiny of the evidence through a  
45 threshold test of reliability should apply,  
46 usually within a *voir dire*. In this sense,  
47 the concept of 'novel' is used to distinguish

1 evidence...The object...is to prevent the  
2 trial becoming a "medical or scientific  
3 convention with an exchange of highly  
4 speculative points of view".  
5

6 That's what happens when you have so many  
7 different variables that one has to take into  
8 account with whether or not, for example, the  
9 camera was moving.

10 It talks, in paragraphs 63 and 64, that of  
11 course the dangers are greater in circumstances  
12 where you have a judge and a jury trial. But  
13 nonetheless, in the place that I previously  
14 discussed with you, *R. v. J and L* (sic), that was  
15 a judge alone criminal matter from what I can  
16 determine from looking at the last paragraph. And  
17 in that case, the science was not allowed -- or  
18 the expert opinion was not allowed.

19 Just taking you back to that decision at  
20 paragraph 13 of that decision -- or, sorry, page  
21 13, paragraph 56, *Mohan* is once again quoted, and  
22 Mr. Justice Sopinka -- and it goes on to quote  
23 from *Davie v. The Magistrates of Edinburgh* on the  
24 role of expert witnesses.

25 THE COMMISSIONER: Excuse me, 56?

26 MR. KOSTECKYJ: Yes, paragraph -- I've taken you back,  
27 sorry.

28 MR. BUTCHER: Sorry, which case are we in?

29 MR. KOSTECKYJ: *J and L* (sic), the first case that I  
30 cited to you. I was reminded of a point there  
31 that I wanted to take you back to. It's page 13.

32 The point that I'm making and want to make  
33 there, is:

34  
35 Their duty is to furnish the Judge or jury  
36 with the necessary scientific criteria for  
37 testing the accuracy of their conclusions, so  
38 as to enable the Judge or jury to form their  
39 own independent judgment...  
40

41 And it goes on:

42  
43 The purpose of expert evidence is thus to  
44 assist the trier of fact by providing special  
45 knowledge that the ordinary person would not  
46 know.  
47

1 And I'm saying to you that this is trying to  
2 replace your viewing of the tape with the  
3 interpretation of the viewing by the expert.

4 In the *Taylor v. Liang* case, which is the  
5 second case I cited to you, at paragraph 66, the  
6 *J-L.J.* case is cited once again. In that case, as  
7 I say, it was a judge sitting alone.

8 I join with my friend in the argument that  
9 has been raised which is that the prejudicial  
10 value of this information, coming at the time when  
11 it does, it is to be remembered that in this  
12 report it appears that this expert was working on  
13 this report for a number of months. I'm looking  
14 at the first page of the report -- sorry, the  
15 second page.

16  
17 Earlier this year, I was contacted...

18  
19 Very bottom of page 2. And there appears -- my  
20 friend has provided a letter to me this -- just  
21 before we started --

22 THE COMMISSIONER: Just a minute. I can't find what  
23 you just read.

24 MR. KOSTECKYJ: I'm looking at the -- this is the  
25 actual evidence of Grant Fredericks, page 2 at the  
26 very bottom.

27  
28 Earlier this year, I was contacted by Mr.  
29 David Butcher...

30  
31 Mr. Butcher has provided me, at least with an e-  
32 mail that was sent to this witness as of February.  
33 The first notice that Mr. Rosenbloom and I have of  
34 what this evidence is about, or that even this  
35 kind of witness is going to be called, was as of  
36 Monday or Tuesday of this week.

37 Now, this is significantly different in two  
38 respects from the previous evidence that has gone  
39 in. The first is all the previous evidence that  
40 has gone in has been medical evidence. It could  
41 be easily anticipated that there was going to be  
42 medical evidence which was going to be put in.  
43 This, and all of the previous evidence, was  
44 evidence which was generated by Commission. This  
45 is a piece of evidence which was generated by one  
46 of the parties here.

47 I say that in the weighing of the probative

Submissions by Mr. Kosteckyj (for Zofia Cisowski)

Submissions by Mr. Butcher (for Constable Bill Bentley)

1 value, all of those things have to be measured --  
2 be measured. But, at the end of the day, the  
3 danger with this evidence is, as my friend  
4 indicates, that it purports to do something that  
5 you can do yourself by viewing the tape. It goes  
6 in a different direction than what this expert has  
7 done in the past.

8

9 SUBMISSIONS BY MR. BUTCHER ON BEHALF OF CONSTABLE BILL  
10 BENTLEY:

11

12 MR. BUTCHER: By way of introduction, I will respond as  
13 follows: Firstly, the principle concern for you,  
14 Mr. Commissioner, at this point in the hearing is  
15 to ensure that these officers receive the full  
16 benefit of procedural fairness. That has to  
17 include the right to have evidence called that  
18 they seek to have called, no matter when it is  
19 produced.

20 THE COMMISSIONER: Why is it so late when you gave  
21 notice to your two friends.

22 MR. BUTCHER: Well, I'll go through that in just a  
23 minute. The second is that this is an eminently  
24 qualified expert. The third is that we have been  
25 asking since February the 6th that Commission  
26 counsel call this witness.

27 THE COMMISSIONER: No, but I'm talking about your two  
28 friends. I'm not talking about Commission  
29 counsel.

30 MR. BUTCHER: Well, on March -- well, can I take you to  
31 Tab 2, and I'll take you through the history of --

32 THE COMMISSIONER: They say they knew nothing about  
33 this until Monday. Not a scrap, nothing.

34 MR. BUTCHER: On -- there is a collection of material  
35 at Tab 2. We were placed on an undertaking at the  
36 commencement of this proceeding to not distribute  
37 any material to anybody, including experts. The  
38 next document --

39 THE COMMISSIONER: What's that got to do with telling  
40 your friends?

41 MR. BUTCHER: Well, we -- it's a history, Mr.  
42 Commissioner. I told Commission counsel on March  
43 the 30th that I wanted to call Mr. Fredericks. We  
44 asked Commission counsel at the outset to call  
45 this witness. They took some time to consider the  
46 matter. They said no.

47 In early March, we approached the RCMP for

1 funding to retain experts. That took a short  
2 time, not a particularly long time. I then asked  
3 Commission counsel to deliver a copy of the  
4 original Pritchard video to Mr. Fredericks. There  
5 was then a batting backwards and forwards between  
6 Commission counsel and the coroner's office as to  
7 who was responsible for the custody of this item.  
8 In early April, very early April, I thought I  
9 had an agreement that the tape would be provided,  
10 the memory stick would be provided by Commission  
11 counsel --

12 THE COMMISSIONER: What's that got to do with this type  
13 of evidence and what's that got to do with telling  
14 your friends?

15 MR. BUTCHER: Well, in this proceeding, every counsel  
16 has communicated through Commission counsel. So I  
17 told Commission counsel on March the 30th that I  
18 wanted this man called.

19 THE COMMISSIONER: This man called for what purpose?  
20 To give this type of evidence?

21 MR. BUTCHER: Yes.

22 THE COMMISSIONER: Well, I'll see what Commission  
23 counsel says.

24 MR. BUTCHER: Well, to give -- what I will say,  
25 forensic video analysis. I don't --

26 THE COMMISSIONER: What does that mean? Forensic --  
27 we've had all kinds of forensic video analysis.

28 MR. BUTCHER: No, not really.

29 THE COMMISSIONER: Well, in my opinion we have.

30 MR. BUTCHER: No. With respect, what we've had --  
31 we've had nobody come forward and give evidence as  
32 to how these tapes are produced, what the content  
33 of the tapes are, how they're measured or anything  
34 if you want to talk about the counting of pixels.

35 THE COMMISSIONER: No, let's be accurate about it. The  
36 nub of this report, from my point of view, is  
37 three steps forward.

38 MR. BUTCHER: Correct.

39 THE COMMISSIONER: Did you tell Commission counsel or  
40 your learned friends you were going to call expert  
41 opinion evidence on that point?

42 MR. BUTCHER: No, because I didn't have it until last  
43 Saturday.

44 THE COMMISSIONER: Did you tell them you were trying to  
45 do it?

46 MR. BUTCHER: I told Commission counsel that. I did  
47 not tell my friends.

1 THE COMMISSIONER: Be accurate. You told Commission  
2 counsel you were trying to get expert opinion  
3 evidence on --

4 MR. BUTCHER: With respect to video evidence.

5 THE COMMISSIONER: -- the fact that an expert will say  
6 he took three steps forward.

7 MR. BUTCHER: And how would I have known that he was  
8 going to say that until we got his report?  
9 Because he was not -- he was asked to look at that  
10 area. He was not asked to come to that  
11 conclusion.

12 THE COMMISSIONER: No, but you must have instructed him  
13 as to a generalized view of this matter. You're  
14 not just talking about clarity the way some of the  
15 cases speak of it. Because there's an issue of  
16 clarity here, but that's not what we're talking  
17 about.

18 MR. BUTCHER: Well, it's really a question of clarity  
19 and interpretation. Bear in mind that throughout  
20 this proceeding, expert reports have been  
21 delivered late without notice on a variety of  
22 issues.

23 THE COMMISSIONER: No, I disagree with you there too.  
24 There was an original notice went out with a list  
25 of doctors on it. Also, nearly every one of these  
26 doctors had given evidence in phase 1 of these  
27 proceedings. That, coupled with the notice given  
28 in the early letter, could reasonably lead people  
29 to believe what the problem was. We certainly  
30 have had nothing where the evidence was presented  
31 on a Monday before it was to be called immediately  
32 thereafter.

33 MR. BUTCHER: With respect, on several occasions we've  
34 had changed evidence, changed opinions and new  
35 opinions from completely new experts.

36 I -- if I had been retained on this file six  
37 months ago instead of three days before the  
38 hearing, there's no doubt that this material would  
39 have been obtained and distributed to everybody.  
40 But that hasn't been our circumstance in this  
41 case. You have to be aware, as well, of some  
42 procedural issues that have arisen over the course  
43 of this hearing that make this evidence absolutely  
44 critical for our clients. Some of those  
45 procedural issues have arisen fairly recently.

46 I say that we've done what we can to try to  
47 get this evidence prepared and get it out. He may

1 not have had any relevant evidence to give. Until  
2 the report was prepared, there was nothing that we  
3 could do other than tell Commission counsel this  
4 person was on the list of people that we wanted to  
5 have called. So even if it's late, and even if  
6 your unhappy with those circumstance --

7 THE COMMISSIONER: Oh, I can get over my unhappiness.

8 MR. BUTCHER: -- it doesn't change the admissibility of  
9 this evidence. If I can turn my attention to  
10 that. I think I'll begin, if I may, with the  
11 witness's background.

12 You'll see on page 1 that he's currently a  
13 member of the faculty of the University of  
14 Indianapolis teaching forensic video analysis  
15 there. He has worked in this field in private  
16 practice since the year 2000. He has been  
17 providing teaching in various institutions since  
18 1998. He was in fact a police constable in  
19 Vancouver between 1988 and 2000, so he has 12  
20 years of law enforcement experience.

21 Before that, he was a television cameraman,  
22 producer and director, and he has a B.A. degree in  
23 Broadcast Communications from Gonzaga University.  
24 He's a member of related professional  
25 organizations. He sits on an advisory board  
26 advising the International Association of Chiefs  
27 of Police. He has given evidence in the United  
28 States before government organizations including  
29 in senate hearings. Those are set out on the  
30 bottom of the second page.

31 He has given media commentary about video  
32 issues, received awards, and most importantly of  
33 all, on the beginning of the bottom of page 4, and  
34 this goes in reverse chronology, he has given  
35 evidence of this kind -- and I can't speak to the  
36 precise issue raised by my friends. Have you  
37 given evidence with respect to measurement of  
38 pixels, because I haven't asked him that question.

39 But you will see that he has given evidence  
40 numerous times in the United States on these  
41 issues. To our knowledge, he last gave evidence  
42 in this jurisdiction in a case which Mr. Hira  
43 prosecuted - it's at the bottom of page 4 - known  
44 as **R. v. Rajinder Benji**. It was a first-degree  
45 murder case and he gave evidence with respect to a  
46 videotape, a surveillance videotape seized at the  
47 Waterfront Centre, if I remember correctly.

1           Then page 5 contains a number of other  
2 American cases. Page 6 at the very bottom  
3 contains a case from Manitoba. Page 7 contains a  
4 case involving -- a case at the top that's simply  
5 described as **R. v. RCMP**. I'm not sure why it's  
6 described that way. It's in the Yukon Territory  
7 court.

8           The -- about three-quarters of the way down  
9 the page, there's a case called **R. v. Bhatti**. I  
10 expect that that is the trial of the co-accused of  
11 **Benji**, as there certainly was a co-accused in that  
12 case with that name.

13 THE COMMISSIONER: I've heard of that case.

14 MR. BUTCHER: Sorry?

15 THE COMMISSIONER: I've heard of that case.

16 MR. BUTCHER: Yes. It in various ways went to the  
17 Supreme Court of Canada, on one issue went to the  
18 Supreme Court of Canada on the direct indictment  
19 issue, and indeed on other issues.

20           There is a case on page 8, about three from  
21 the bottom, called **Trans North Turbo Air Ltd. v.**  
22 **North 60 Petro Ltd.**, which is a case I'll come to  
23 in a moment. It's a case from the Yukon Territory  
24 Supreme Court, but was considered -- that case was  
25 appealed. It concerned a -- it's a civil case  
26 involving, I think, a \$5 million loss on a fire in  
27 Whitehorse. And then getting -- going back to  
28 pages 9, 10 and 11, we go back to the period in  
29 time where this man was working for the police in  
30 Vancouver, and was giving evidence much more  
31 frequently in the Provincial Courts here with  
32 respect to this kind of matter.

33           He -- there are several important points to  
34 be drawn from that resumé. One is lengthy and  
35 extensive experience in the area. Two is there is  
36 nothing new or novel now about this kind of  
37 expertise. It's been around for ten years.  
38 Three, it's been regularly accepted in the courts  
39 here. I was referred today to a prosecutor in  
40 Alberta who was kind enough to -- who apparently  
41 has some expertise in this area who was kind  
42 enough to send me an excerpt from a paper that  
43 he'd written about some of the Canadian cases that  
44 he had dealt with, that deal not just with this  
45 expert, but many others in this field. I included  
46 that at Tab 4 because I thought it might be  
47 helpful to set out the range of cases that the --

1           that the -- this area of expertise has been used  
2           in.

3           I do want, as well, just to touch - before I  
4           go to the cases themselves - a case that this  
5           expert told me he has been involved in. It is  
6           referenced at Tab 6. There are two or three  
7           excerpts from the British press with respect to a  
8           murder conviction that was -- in which the only  
9           issue was identification. The identification came  
10          from one -- it's on the very first page of the  
11          first -- first of those media excerpts:

12  
13                   A former homicide detective in Las Vegas  
14                   enhanced a tiny CCTV image to show Miss  
15                   Garsztko --

16  
17          Who was the victim.

18  
19                   -- wearing a shoulder bag which she took  
20                   everywhere with her.

21  
22          That case has been overturned by the English  
23          Court of Appeal and sent back for a new trial.  
24          The second document makes reference to -- the  
25          second and third documents are the newspaper  
26          reports of that case in which the Court of Appeal  
27          considered fresh evidence from four witnesses, new  
28          experts that were considered potentially credible,  
29          and I'm told that that was forensic video evidence  
30          criticizing the first report that led to the  
31          conviction, or that was so important in the  
32          conviction, and that Mr. Fredericks was one of  
33          those experts.

34          So I've put that in there as an example of  
35          the critical importance that this kind of evidence  
36          can have in ensuring that justice is done in a  
37          proceeding. Unfortunately, I couldn't find the  
38          Court of Appeal case. I suspect that the English  
39          authorities take those decisions off the publicly-  
40          available websites when there's a new trial, but  
41          don't know that.

42          If I can take you to the case at Tab 5, this  
43          is a decision of our Court of Appeal, and take you  
44          to page 8 of 9. One of the issues on this appeal  
45          from 2004 -- it's a decision of your former  
46          brother Judge Donald. Says this: The appellant  
47          -- the enhanced videotape was admitted.

1           The appellant argues that by admitting the  
2           enhanced videotape the jury could have been  
3           easily confused between what the  
4           neighbour...Gill, saw and what was depicted  
5           on the videotape. It has not been  
6           demonstrated to my satisfaction how such  
7           confusion might arise.

8  
9           It is further argued --

10  
11          And this is really one of the points that my  
12          friends have made.

13  
14           It is further argued that although it has  
15           been held by the Supreme Court of Canada in  
16           **Nikolovski**...that a videotape can and should  
17           speak for itself, this was with reference to  
18           a videotape which was clear and of high  
19           quality. Here the original videotape was of  
20           poor quality and had to be enhanced. The  
21           appellant argues it was enhanced by a person  
22           whose expertise was not satisfactorily  
23           established.

24  
25           As to the latter issue I find myself in  
26           respectful agreement with the view taken by  
27           the trial judge in his ruling on the  
28           admissibility of the enhanced tape.

29  
30           The Crown tenders Mr. Walker as an  
31           expert in the area identified by Crown  
32           as forensic video analysis.

33  
34          And that's really all we're seeking to identify  
35          him in. It may have various aspects to it,  
36          including the measurement of pixels, but it's one  
37          broad area of expertise.

38  
39           Essentially, Mr. Walker has been asked  
40           to view an analogue, surveillance  
41           videotape, taken on the evening of the  
42           incident and to see if he could enhance  
43           that...transferring it from the analogue  
44           format to the digital format...

45  
46          And so on and so on. The trial judge said this:  
47

1 I recognize that this --

2  
3 Page -- paragraph 3 at the bottom of the page:

4  
5  
6 I recognize that this area is a developing  
7 area of technology, and I also recognize, on  
8 the basis of the evidence before me, that  
9 people are acquiring whatever expertise they  
10 can offer in this area in what might be  
11 termed less traditional ways; that is, there  
12 is not a particular university course that  
13 would qualify one as a...video [expert]...

14  
15 And then this was the only real summary of  
16 the law on experts that I was going to take you to  
17 because I think it's really quite well understood  
18 and fairly trite.

19  
20 The only requirement for the admission of  
21 expert opinion is that the "expert witness  
22 possesses a special knowledge and experience  
23 going beyond that of the trier of  
24 fact"...Deficiencies in the expertise go to  
25 weight, not admissibility. As stated by  
26 Sopinka --

27  
28 In the text:

29  
30 "The admissibility of [expert] evidence  
31 does not depend upon the means by which  
32 that skill was acquired. As long as the  
33 court is satisfied that the witness is  
34 sufficiently experienced in the subject-  
35 matter at issue, the court will not be  
36 concerned with whether his or her skill  
37 was derived from specific studies or by  
38 practical training, although that may  
39 affect the weight to be given to the  
40 evidence."

41  
42 That answers Mr. Rosenbloom's comment about there  
43 being no mathematical Ph.D. behind this person's  
44 qualifications. That answers, in my submission,  
45 any other concerns that there may be about the  
46 expertise.

47 The court went on to uphold the trial judge's

1 findings that the evidence was admissible.

2 Tab 7 I have included -- it's a case that I  
3 was defence counsel in. It's the only time I've  
4 used this witness before. It involved a -- one of  
5 the areas of concern in the case involved an  
6 alleged assault by a police officer upon a woman  
7 at a booking-in counter. The camera in the  
8 booking-in counter was pointing into a bright  
9 light. The image was seriously over-exposed. As  
10 a result of this expert giving evidence in this  
11 case being qualified by Judge Owen-Flood, the  
12 judge was able to find, at paragraph 68, although  
13 he doesn't reference the witness, he says that he  
14 was able to find that it was the plaintiff who had  
15 thrown the punch at the police officer, not the  
16 other way around. Again, an example of how  
17 important this kind of evidence is.

18 The case at Tab 9 is a criminal trial before  
19 Mr. Justice Hood. It was a robbery case and Mr.  
20 Justice Hood, at paragraph 54 on page 12 of 25 set  
21 out this:

22  
23 Constable G. Fredricks was qualified as an  
24 expert in forensic video productions,  
25 including digitization and analysis of video.  
26 His expertise was accepted by Mr. McMurray,  
27 subject to his right to argue that the  
28 witness' evidence was not admissible.  
29

30 And then there is a summary of what the witness  
31 did. He digitized the videotape, fed it into the  
32 computer and received clearer or interpret --  
33 images capable of interpretation out from the  
34 other end of the computer if I can summarize it in  
35 a crude way.

36 Mr. Kosteckyj did not take you to paragraph  
37 74 on page 17 where the issue of the admissibility  
38 of this witness's evidence was canvassed.  
39

40 Mr. McMurray submitted that the Constable's  
41 evidence was not admissible because it does  
42 not fall within the parameters of  
43 admissibility discussed by the Supreme Court  
44 of Canada in *Nikolovski*...There the facts  
45 were similar to those in the case at Bar,  
46 including the fact that the eye witness clerk  
47 in *Nikolovski* could not identify the robber

1 from the photograph line-up. Counsel  
2 submitted that the case stands for the  
3 proposition that a Trial Judge can only  
4 compare the original video tape to the  
5 Accused, and then make his determination on  
6 whether or not he is satisfied beyond a  
7 reasonable doubt that the person on the video  
8 is the Accused. At pg.416, Mr. Justice Cory  
9 ...pointed out that the video tape in that  
10 case had not been altered or changed, and  
11 that it depicted the scene of the crime, and  
12 therefore was admissible and relevant  
13 evidence.

14  
15 Counsel submitted that *Nikolovski* does not  
16 contemplate what happened in the case at Bar.  
17 Here he says that the format of the images on  
18 the video tape were altered in order to  
19 permit the use of the computer software to  
20 enhance the quality of the images. A portion  
21 of the stills were blown up, which can only  
22 be done when the image is digitized. The  
23 format also --

24  
25 And that's really all that Fredericks has  
26 done is blown them up so that -- as far as I  
27 understand it, so that you can identify the  
28 individual pixels and take measurements not of  
29 feet and inches but of measurements between the  
30 pixels to illustrate movement. And I might add -  
31 and I'll come to this in a minute in the report -  
32 he's then gone on to say, "I've compared that with  
33 a fixed object in the room to make sure that I am  
34 -- the measurements that I'm taking have a  
35 comparison to validate the measurements that I'm  
36 making."

37  
38 The format also --

39  
40 This is at the top of page 18.

41  
42 The format also allowed specific portions of  
43 the video images to be isolated and the  
44 lighting to be altered. In doing so the  
45 witness suggests that the quality on the  
46 video tape was not sufficient, and needed to  
47 be better. Hence, the format of the original

1 video tape was changed, and cannot be put  
2 into evidence.

3  
4 Mr. Ruttan submitted that the work done  
5 by...Fredricks does not amount to alteration  
6 or tampering with the original video...within  
7 the meaning of the words [suggested] used by  
8 Cory, J.  
9

10 And there's no tampering in this case. It's  
11 simply a development of an image that can be  
12 interpreted.

13 In the bottom of paragraph 77, the witness --  
14 Mr. Justice Hood concluded:

15  
16 Accordingly I find that Constable Fredricks'  
17 video slides and other work product are  
18 admissible into evidence.  
19

20 The case at Tab 9 is the case that I  
21 mentioned of the fire in the hangar at the  
22 Whitehorse Airport. I've only included -- this  
23 was a very long trial decision and I've included  
24 the index and the introduction to the case, but  
25 then gone straight to the issue of the  
26 surveillance evidence. There was -- this is at  
27 paragraph 98 at the bottom of page 35.  
28

29 On January 18, 1999, a black and white Delco  
30 Dome camera was located on the northwest  
31 corner of the Whitehorse airport terminal  
32 building, which is located --  
33

34 Near a hangar. Paragraph 99:

35  
36 Grant Fredericks was qualified as an expert  
37 in forensic video analysis, including  
38 photograph comparisons.  
39

40 And then it sets out some of his history  
41 which allowed the trial judge in this case to  
42 accept his evidence as an expert. And then he  
43 reviewed in his evidence on page 37 the images  
44 that he had looked at and was particularly  
45 concerned, as it happens, if you go to paragraph  
46 105, to an image number 2082. What the trier of  
47 fact was trying to determine was the cause of the

1 fire and whether there'd been evidence -- I think  
2 was whether or not there was evidence -- well, the  
3 question was whether or not the people had been  
4 using oxyacetylene torches on the roof had caused  
5 the fire. So one of the issues was when was there  
6 some evidence of flashing or fire or smoke shown  
7 on the surveillance video.

8 There is, at the top of page 39, there is  
9 reference to an expert who was called by the other  
10 side, the defence expert, who was a Dr. Rudin, a  
11 forensic expert with impressive academic  
12 background as well as video analysis experience,  
13 and his evidence is summarized. I don't think it  
14 matters for the purposes of this argument, but it  
15 is apparent to me that Fredericks evidence was  
16 accepted over that of the defence expert, and  
17 certainly the plaintiff was successful in the  
18 trial.

19 I've included the Court of Appeal ruling at  
20 Tab 10 in that -- of the binder just to point out  
21 that, in paragraph 18 on page 7, the Court of  
22 Appeal simply made reference to the video  
23 surveillance evidence.

24 If I can turn now to the issue of the report  
25 itself.

26 THE COMMISSIONER: I'd like to know what he did to  
27 reach his conclusion.

28 MR. BUTCHER: Well, I think, then, that we're going to  
29 have to go through report in --

30 THE COMMISSIONER: Well, it seems to start at the top  
31 of page 11.

32 MR. BUTCHER: Well, there's -- I think really you need  
33 to go back to page 4 because the first thing he  
34 says, about three-quarters of the way down the  
35 page:

36  
37 In order to conduct an accurate and reliable  
38 examination of the video images, I transcoded  
39 the MPEG-1 file into an uncompressed .AVI  
40 file using VirtualDub with the brightness  
41 value at +19% and the contrast set at +12%.  
42 This file was then imported into the Avid  
43 Media Composer Forensic Video Analysis  
44 System. The Avid System assists in the  
45 examination of motion video and provides a  
46 valuable demonstrative tool for the court.  
47 The Avid System is also used to stabilize

1           shaky video in order to make the video easier  
2           to view and comprehend, while still  
3           maintaining the accuracy of the images.

4  
5           And that is the first thing that he tells me he  
6           has done. He has stabilized the images that we  
7           have all seen.

8           And you have to bear in mind --

9           THE COMMISSIONER: That's stabilizing the images that  
10          were taken.

11          MR. BUTCHER: Yes. And you have to bear in mind as  
12          well, the moment that I'm most interested in where  
13          the officers have given evidence that Mr.  
14          Dziekanski moved forward, the camera is zooming  
15          out throughout that period.

16          So that's the first thing he's done. He's  
17          fed the data into a computer system. Then he has,  
18          on page 11, begun the description of what he has  
19          done. Particularly if we go to the -- he comments  
20          generally on the video and then says this in the  
21          second paragraph:

22  
23                 The camera operator is 'hand-holding' the  
24                 camera and the appearance of the video is  
25                 shaky. Also, at the beginning DZIEKANSKI'  
26                 movement, the camera operator zooms out. The  
27                 camera motion makes it difficult to detect  
28                 DZIEKANSKI' movement. In order to overcome  
29                 the camera motion, the images were stabilized  
30                 using the Avid Media Composer. Due to the  
31                 significant motion, the stabilization was  
32                 done manually using 'Key Frame' adjustments.  
33                 The Key Frames are used to lock the video  
34                 images to reduce camera motion in three  
35                 dimensions:

36  
37                 X, Y and Z, side to side, up and down and in and  
38                 out.

39                 Just dealing with that point alone, Mr.  
40                 Commissioner, that's the kind of assistance that I  
41                 say would be very helpful to you.

42          THE COMMISSIONER: I still can't detect how he reached  
43          his conclusion about the steps.

44          MR. BUTCHER: Well, then we're going to have to carry  
45          on.

46  
47                 [This] The stabilized result, included as a

1 video attachment to this report, locks non-  
2 moving objects within the field of view of  
3 the camera so they retain relatively still --  
4

5 That should be "remain", I think.  
6

7 -- even [when] while the camera is in motion.  
8 The stabilized result allows the viewer to  
9 see the movement of each of the people in the  
10 scene without the distraction of the up and  
11 down and in and out motion of the camera.  
12

13 And then he describes what he is seeing, and  
14 that description goes on and then he goes to page  
15 13.  
16

17 The images from the camera provide a two-  
18 dimensional perspective of the scene.  
19 Reverse Projection/Photogrammetry assists  
20 with a scientific analysis of positional  
21 changes by assessing the relationship between  
22 DZIEKANSKI and the fixed objects in the  
23 scene. As DZIEKANSKI moves forward, toward  
24 the wall in the background, he moves further  
25 away from the camera and therefore becomes  
26 smaller in the image.  
27

28 And by the way, My Lord, if -- sorry, Mr.  
29 Commissioner, if you could be given Exhibit 44.  
30 This is to respond to a question that you asked  
31 Mr. Rosenbloom. In the time that I've had since  
32 this -- this plan as well, that I don't know the  
33 exhibit number. I just refer you to that because  
34 you asked a question about what we know about the  
35 other side of that counter. That was one of the  
36 images that came to my mind.

37 Getting back to the report, he says:  
38

39 As DZIEKANSKI moves forward, toward the wall  
40 in the background, he moves further away from  
41 the camera and becomes smaller in the image.  
42 However, since the camera is at approximately  
43 the same level as the back of DZIEKANSKI'  
44 head...objects in the background at head  
45 level will remain at head level (the horizon)  
46 making it difficult to assess small changes  
47 in distance as he moves forward. Objects

1 near his waist will change slightly more in  
2 relation to DZIEKANSKI's position, but only  
3 if he moves significantly closer to the wall.  
4 Small movements of a few steps make it  
5 difficult to observe without conducting  
6 Photogrammetric measurements.  
7

8 That's probably a key sentence.  
9

10 Also, since the camera is zooming outward,  
11 providing a wider image while DZIEKANSKI is  
12 in motion, the movement naturally makes him  
13 to appear smaller.  
14

15 In order to determine if DZIEKANSKI is  
16 actually in motion, a calculation showing the  
17 percentage of change in his size compared to  
18 the percentage of change in the size of the  
19 fixed counter will help to show whether  
20 [he's] DZIEKANSKI is actually moving away  
21 from the counter or if he is simply adjusting  
22 his weight from side to side.  
23

24 Each of the images in the video has 640  
25 pixels from left to right...and 480 pixels  
26 from top to bottom...A pixel is a Picture  
27 Element.  
28

29 I take it, Mr. Commissioner, you know what a pixel  
30 is. When I first did this, I didn't.

31 THE COMMISSIONER: Well, I do.

32 MR. BUTCHER:  
33

34 There are 307,200 pixels in each image. The  
35 pixels are like dots in a photographic image  
36 and make up each finite point in the images.  
37 Each finite pixel is described as [an] X  
38 position and [a] Y position.  
39

40 The image on the --  
41

42 And then -- so what he is doing, as is shown, is  
43 he's used another program called Adobe Photoshop,  
44 a program that I'm told by the expert has been  
45 around for 20 years, to give each pixel position a  
46 unique identifier, and it's really a position on  
47 the grid, I think. Then he goes, at the top of

1 page 14, to identify where the -- how he has  
2 assessed the movement of Dziekanski by reference  
3 to fixed images and where they have moved  
4 according to the number of pixels that they have  
5 moved.

6 So that is set out on page 14 showing how  
7 the --

8 THE COMMISSIONER: I understand it. I got it.

9 MR. HIRA: David, he also does a second analysis, top  
10 of page 15 --

11 MR. BUTCHER: Yes.

12 MR. HIRA: -- in order to test the methodology.

13 MR. BUTCHER: There's -- and there is a control, if you  
14 like, with respect to this testing, and that is  
15 referenced at the top of page 15.

16  
17 In order to test this methodology, a second  
18 fixed area within the image was measured  
19 between Image A and Image B...a line on the  
20 wall in the ground (sic) [behind] above  
21 DZIEKANSKI head is visible running left to  
22 right from the light reflected advertising  
23 sign to the green post to his right.

24  
25 So, in other words, what he does is look for  
26 something that is fixed in all of the images and  
27 measures the movement in comparison to that fixed  
28 image to test whether his mathematical  
29 measurements of pixels are correct. He goes on to  
30 say, just towards the bottom of page 15, that the  
31 margin of error is less than 1 percent.

32 This kind of analysis is clearly not  
33 something that you or anybody in this room can do  
34 unassisted. It is clearly the kind of evidence  
35 that requires expert assistance.

36 THE COMMISSIONER: All right. I think you've made your  
37 point.

38 MR. BUTCHER: Thank you.

39 THE COMMISSIONER: Any other counsel?

40 MR. MCGOWAN: Mr. Commissioner, perhaps just before my  
41 friend sits down, I wonder if it might be helpful  
42 if he would identify for the record, the area in  
43 which he'll seek to have the witness qualified.  
44 Sorry, if I put you on the spot.

45 MR. BUTCHER: I was going to have him broadly qualified  
46 in forensic video analysis, frankly. But if there  
47 -- if Commission counsel or others want me to

Submissions by Mr. Butcher (for Constable Bill Bentley)  
Submissions by Mr. Harris

1           qualify him in a more narrow area, I'm content to  
2           do that. I see this as very much part of a broad  
3           range of skills that this witness has and would  
4           bring to any particular problem.  
5

6           SUBMISSIONS BY MR. HARRIS ON BEHALF OF CORPORAL MONTY  
7           ROBINSON:  
8

9           MR. HARRIS: Mr. Commissioner, it's Reg Harris, counsel  
10          for Monty Robinson. I will try and be very brief.  
11          I support and join my friend, Mr. Butcher, in the  
12          application. I have a few very brief comments.

13                 First of all, I echo what Mr. Rosenbloom so  
14          eloquently stated that, as you are aware, this is  
15          not a trial process, this is an inquiry process,  
16          and the traditional rules of evidence are somewhat  
17          laxed (sic). Given the very important and the  
18          notice -- or not notice, but the potential for  
19          finding a misconduct, this evidence is extremely  
20          important.

21                 As well, I would expect that Mr. Kosteckyj  
22          and Mr. Rosenbloom, given their strong vigorous  
23          and expert cross-examination of these police  
24          officers --

25          THE COMMISSIONER: I don't think you'll get any  
26          argument on that point.

27          MR. HARRIS: Once -- Mr. Rosenbloom will not argue with  
28          me on that. But both of these counsel put to  
29          these officers, challenging them to show on the  
30          video where Mr. Dziekanski was backing up and  
31          reversing. That makes it a very live and relevant  
32          issue on --

33          THE COMMISSIONER: There's no question it's relevant.

34          MR. HARRIS: All right.

35          THE COMMISSIONER: The question is the cost benefit,  
36          and that goes to weight and relevancy. The weight  
37          could be overwhelmed by prejudice.

38          MR. HARRIS: Well, with respect to your comments, no  
39          question it's relevant, it has a significant high,  
40          high degree of relevancy, and in my respectful  
41          submission, that carries a strong, strong weight.

42                 In terms of cost, in my respectful  
43          submission, this evidence -- we've had complex,  
44          complex medical evidence that we've managed with  
45          experienced counsel to get through it in an  
46          efficient fashion. In my respectful submission,  
47          this can be got through in an efficient fashion.

Submissions by Mr. Harris (for Corporal Monty Robinson)  
Reply by Mr. Rosenbloom

1                   There was another comment I had. The other  
2                   comment I had was with respect to -- the further  
3                   point of relevancy was similar to your commentary  
4                   about whether or not the camera was physically  
5                   moving at certain point in times (sic). The **R. v.**  
6                   **Gill** case touches on that and how this type of  
7                   evidence is of assistance. While I'm mindful that  
8                   there is some difficulties for Mr. Rosenbloom and  
9                   Kosteckyj, given the timing of this, it was not  
10                  designed to occur that way. It did occur that  
11                  way, and it would be most unfortunate to come this  
12                  far and fall short of receiving what is very  
13                  relevant and important evidence. Thank you.  
14        THE COMMISSIONER: Is there any reply?  
15        MR. HIRA: I'm happy to address timing issues although  
16                  I suspect I might be going into a hornet's nest.  
17        THE COMMISSIONER: No, I don't need to hear about that.  
18        MR. HIRA: I could tell you that I first saw this at  
19                  12:20 Sunday morning, that's a.m.  
20        THE COMMISSIONER: Well, that's sooner than your  
21                  friends did. Anyway, any reply?  
22  
23        REPLY BY MR. ROSENBLOOM:  
24  
25        MR. ROSENBLOOM: At least Mr. Hira had it 24 hours  
26                  before I did then.  
27                  I listened carefully to my learned friend,  
28                  Mr. Butcher. I didn't hear him explain to you,  
29                  Mr. Commissioner, why there wasn't at least the  
30                  courtesy of communication to the parties, to  
31                  myself, to Mr. Kosteckyj, and to the Commission  
32                  that indeed a report was being prepared and was  
33                  coming late, and that we should anticipate it by a  
34                  certain date.  
35        THE COMMISSIONER: Too bad I can't order costs.  
36        MR. ROSENBLOOM: Indeed. But I didn't hear an  
37                  explanation for that. I hear from Mr. Butcher  
38                  about problems in securing --  
39        MR. HIRA: I was prepared to provide a bit of that,  
40                  but --  
41        MR. BUTCHER: And, with respect, the process here has  
42                  always been counsel communicate with Commission  
43                  counsel and Commission counsel distribute  
44                  materials. That's the process that we've set up  
45                  and everybody has abided by it.  
46        THE COMMISSIONER: Yes, I heard that.  
47        MR. ROSENBLOOM: I agree with that. I agree with that,

1 Mr. Butcher. The question is not the distribution  
2 of the report. The report in fact came to  
3 Commission counsel, as I understand it, Monday  
4 morning or late Sunday night by e-mail and was  
5 distributed efficiently to the parties Monday of  
6 this week.

7 THE COMMISSIONER: Gentlemen, I want you to go on to  
8 your next point.

9 MR. ROSENBLUM: Thank you. The second point is in  
10 reviewing the cases that Mr. Butcher makes mention  
11 of, I don't see this witness, Mr. Fredericks,  
12 being qualified in the area of measurement of  
13 movement, and I stand corrected, from what I'm  
14 reading, but he appears to have been accepted, and  
15 again I made the point earlier that I don't know  
16 if it was ever challenged in any of these cases,  
17 but he's accepted in the field of forensic video  
18 analysis where he's comparing one video format to  
19 another. He's converting one video system to  
20 another and things of that sort.

21 This is a very different matter. This is a  
22 matter of the analysis of movement by way of  
23 measurement, which is through this area of  
24 photogrammetry. I just don't see it in the cases  
25 that he has indeed testified and been given --  
26 granted expert status to give an opinion in  
27 respect to that matter. Those are my remarks.  
28 Thank you.

29 THE COMMISSIONER: Because of the importance of this  
30 matter, I'm going to attempt to deal with it.  
31 I'll adjourn, and I'll let counsel know within the  
32 next short while whether or not I'm capable of  
33 giving a decision. So stand by.

34  
35 (PROCEEDINGS ADJOURNED)  
36 (PROCEEDINGS RECONVENED)

37  
38 THE COMMISSIONER: Because of the pressure of time, my  
39 reasons are going to be short. I begin by saying  
40 that it is unfortunate indeed that proper notice  
41 was not available. But I am of the opinion,  
42 nonetheless, that this witness can be called.  
43 He will be called a forensic video analysis  
44 expert. It remains to be seen what special  
45 expertise he possesses relative to the opinion set  
46 forth. Ultimately, it may well be that all of  
47 these matters will be a question of weight to be

1 attached to the opinion.

2 The evidence may be quite relevant to the  
3 interests of the officers and this overbalances  
4 the problem of lateness of this evidence coming  
5 forward. Accordingly, that will be my ruling.

6 Now, when will we commence?

7 MR. BUTCHER: I am not aware of what schedule has been  
8 set for the witnesses.

9 MR. MCGOWAN: Mr. Commissioner, we have, in addition to  
10 Mr. Fredericks, two witnesses remaining. There's  
11 a Dr. Janke, who is a psychiatrist. He is  
12 available Thursday of next week, and I'm going to  
13 suggest that we resume on that date to hear from  
14 him. At this point, we are attempting to arrange  
15 for Mr. Nickel, who is a use-of-force expert who  
16 has been proposed by Mr. Kosteckyj. We're trying  
17 to arrange him for Friday. I understand he's out  
18 of town but may be available by telephone Friday  
19 of next week. I'm going to suggest that we  
20 commence again on Thursday and attempt to continue  
21 through Friday with Mr. Nickel.

22 Then the matter remaining to be determined is  
23 when we hear from Fredericks who I understand may  
24 only be available on the 29th of this month.

25 MR. BUTCHER: No. Since I last addressed that issue,  
26 he is giving evidence in New York next Friday and  
27 anticipates being available the following week,  
28 which I think is the week commencing the 25th, and  
29 I think the 25th is an American holiday, so on  
30 days convenient during that week, I think.

31 THE COMMISSIONER: Now, this is a narrow point and I'm  
32 not going to allow it to interfere with the  
33 schedule we've previously set forward as to the  
34 time that the arguments are to be exchanged and  
35 the time within which we're going to hear verbal  
36 evidence.

37 However, with reference to one thing at a  
38 time here, I'm suggesting, then, that Thursday we  
39 hear the evidence as mentioned, and Friday you're  
40 saying the use-of-force -- what was that chap's  
41 name?

42 MR. MCGOWAN: It was Mr. Nickel.

43 THE COMMISSIONER: Mr. Nickel?

44 MR. MCGOWAN: Yes. Orv Nickel.

45 THE COMMISSIONER: Now, what is the date --

46 MR. BUTCHER: If I may, I will speak to him to see if  
47 he's available Monday or Tuesday of the following

1 week.  
2 THE COMMISSIONER: There's no chance of either the  
3 Thursday or the Friday of next week?  
4 MR. BUTCHER: No, he's -- he's giving evidence in New  
5 York on those days.  
6 THE COMMISSIONER: Now, this is short notice for you,  
7 Mr. Rosenbloom.  
8 MR. ROSENBLOOM: Yes. Firstly, Mr. Butcher, I'm sorry,  
9 are you -- I'm confused here. Are you saying that  
10 your witness is available Monday and Tuesday?  
11 What date, please? Can you give me the date?  
12 MR. BUTCHER: I think it's 25 and 26.  
13 MR. ROSENBLOOM: So we're talking about Monday, the  
14 25th and Monday (sic) the 26th of May, correct?  
15 MR. BUTCHER: Monday and Tuesday of that --  
16 THE COMMISSIONER: That's a week this Monday?  
17 MR. BUTCHER: Yes.  
18 MR. ROSENBLOOM: The 25th is an American holiday.  
19 THE COMMISSIONER: Well, what's that got to do with --  
20 MR. ROSENBLOOM: Yes, it is, Memorial Day.  
21 MR. BUTCHER: Yes.  
22 MR. ROSENBLOOM: So are you saying that in spite of  
23 that fact, you believe the witness will be  
24 available on the 25th. So it's the 25th and 26th  
25 which leads to the following: Obviously if this  
26 witness is to be called, we want the opportunity  
27 to retain counsel (sic) for rebuttal report, and  
28 that being the case, it is likely that in that  
29 situation, we will also be calling oral testimony  
30 if indeed we acquire a rebuttal report. So I want  
31 to make sure that the timing is there for both Mr.  
32 Fredericks' evidence and for any witness that we  
33 might come forward with for rebuttal. I can  
34 assume, I hope, that we can do it on those same  
35 dates, assuming witnesses are available.  
36 THE COMMISSIONER: All right. I think that that's a  
37 sensible plan. The report that we just considered  
38 has an awful lot of information in it. And you  
39 realize I haven't had the time to go through and  
40 say what is relevant and what is not. I'm  
41 focusing on the three steps, and it does appear to  
42 me that the rest of it, anybody can look at it and  
43 see.  
44 MR. BUTCHER: I wouldn't disagree with that with  
45 respect to much of the report, although it would  
46 be my submission that there may be other small  
47 pieces of the report that may be of assistance;

1           for example, with respect to the position of  
2           Robinson's lower limbs. But there is much in  
3           there that is narrative and commentary.

4       THE COMMISSIONER: Yeah, there's no doubt about that.

5       UNIDENTIFIED SPEAKER: I'm just wondering if --

6       THE COMMISSIONER: All right, then. We're going to  
7           adjourn until -- will ten o'clock do it?

8       MR. MCGOWAN: Unless there's some indication that that  
9           time might be insufficient, I think we should  
10          start at 10:00.

11       THE COMMISSIONER: Well, I'm going to hope that 10:00  
12          will do it.

13       MR. MCGOWAN: Next Thursday.

14       THE COMMISSIONER: So ten o'clock next Thursday. I  
15          don't have the date.

16       MR. MCGOWAN: And I'll wait to hear from Mr. Butcher  
17          and Mr. Rosenbloom as to the specifics of the  
18          availability of their witnesses and we'll  
19          communicate with other counsel.

20       MR. ROSENBLOOM: Yes. And also I'm not speaking for  
21          Mr. Butcher who -- Mr. Kosteckyj who had to leave.  
22          I'm assuming that he's going to be available on  
23          the 25th of May, although I can't speak to that.

24       MR. PARHAR: I haven't spoken to him about that either,  
25          and I'll find out, but I assume that that should  
26          be fine.

27       MR. MCGOWAN: Thank you.

28       THE COMMISSIONER: All right, then. Counsel, thank you  
29          for your expedited arguments.

30       MR. ROSENBLOOM: The hearing is now adjourned until  
31          Thursday, May 21st at 10:00 a.m.

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33                               (PROCEEDINGS ADJOURNED TO MAY 21, 2009 AT  
34                               10:00 A.M.)

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