

**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.

April 27, 2009

PROCEEDINGS AT
HEARING (DAY 42)

COPY

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Commissioner:	T.R. Braidwood, Q.C.
Commission Counsel:	A. Vertlieb, Q.C.
Associate Commission Counsel:	P. McGowan
Counsel for Zofia Cisowski:	W. Kosteckyj, S. Whiteley, S. Parhar

(ii)

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Counsel for Vancouver Airport Authority:	D. Stewart, C. Friesen, B. Ergun
Counsel for B.C. Civil Liberties Association:	G. Pastine, S. Dubinsky
Counsel for Government of Poland:	D. Rosenbloom
Counsel for Corporal Benjamin Robinson:	R. Harris
Counsel for Constable Gerry Rundel:	T. Beaubier
Counsel for Constable Bill Bentley:	D. Butcher
Counsel for Constable Kwesi Millington:	R. Hira, Q.C.
Counsel for Public Service Alliance of Canada:	C. Buchanan, B. Matthews
Counsel for City of Richmond:	J. Goulden, M. Kleisinger, G. Trotter
Counsel for TASER International, Inc.	D. Neave
Registrar:	L.N. Giles
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Transcriber:	D. Rochfort

Vancouver, B.C.
April 27, 2009

1
2
3
4 THE REGISTRAR: The hearing is now resumed.

5 THE COMMISSIONER: Good morning.

6 MR. VERTLIEB: Good morning, Mr. Commissioner. This
7 morning -- today we have Dr. Lee and Dr. Martz.
8 Dr. Lee is the pathologist who did the autopsy,
9 and Dr. Martz is on the toxicology. We expect
10 that that evidence can be completed in a good
11 session this morning.

12 Tomorrow we have Dr. Swerdlow and Panescu,
13 and they will be on video conference. Wednesday
14 we're continuing with this. Thursday we have Dr.
15 Ho, and he's going to be a bit fragmented, it
16 seems. He's having trouble finding some time to
17 be able to deal with his evidence for us. We
18 hoped to call Superintendent Rideout on Thursday,
19 but that won't be possible. We may need to speak
20 to you about the Superintendent. Ms. Roberts may
21 wish to make some submissions about that, but I'm
22 not sure.

23 That's more or less the week, and I think
24 we're continuing to make good progress.

25 THE COMMISSIONER: All right. Thank you.

26 MR. MCGOWAN: Mr. Commissioner, the first witness today
27 is Dr. Charles Lee.

28 THE REGISTRAR: Good morning, sir.

29 DR. LEE: Good morning.

30 THE REGISTRAR: Before you're seated, do you wish to be
31 sworn or affirmed?

32 DR. LEE: I'll affirm.

33 THE REGISTRAR: You'll affirm?

34
35 CHARLES LEE, a witness,
36 affirmed.
37

38 THE REGISTRAR: Would you state your full name, please?

39 A Charles Lee.

40 THE REGISTRAR: Thank you. You may be seated.
41 Counsel?

42 MR. MCGOWAN: Mr. Commissioner, I'm going to take the
43 witness briefly through his qualifications and
44 medical history. I'm sure there's no debate that
45 this witness has some expertise in the area of
46 forensic pathology.

47 THE COMMISSIONER: Yes.

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Charles Lee
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1 MR. MCGOWAN: And will be offering opinions in that
2 area.
3

4 EXAMINATION IN CHIEF BY MR. MCGOWAN:
5

6 Q Dr. Lee, you are currently a member of the
7 Forensic Pathology Department at the Vancouver
8 General Hospital?

9 A Yes.

10 Q And in fact you are the pathologist who was
11 designated to perform autopsies with a forensic
12 component; is that correct?

13 A Yes.

14 Q You're presently the only forensic pathologist who
15 performs forensic autopsies at VGH?

16 A Yes, but that's only because my colleague is off
17 on maternity leave.

18 Q Okay. And you've held your present position for a
19 number of years and were in the same position at
20 the time you performed the autopsy on Mr.
21 Dziekanski?

22 A Yes.

23 Q And at the time you performed the autopsy on Mr.
24 Dziekanski, were there other forensic pathologists
25 who performed forensic autopsies?

26 A Yes. I believe at the time there was another
27 colleague, Dr. Grey, who also worked at Vancouver
28 General Hospital.

29 Q Okay. Just the two of you at that point?

30 A Yes.

31 Q Where did you obtain your medical degree, Doctor?

32 A At the University of Alberta in Edmonton.

33 Q And what year did you graduate?

34 A 1994.

35 Q Okay. Did you do a residency after that?

36 A Yes, I did a residency in anatomic pathology at
37 Vancouver General Hospital.

38 Q Okay. And following that?

39 A I did a forensic pathology fellowship in
40 Albuquerque, New Mexico.

41 Q And you completed that in the year 2000?

42 A Yes.

43 Q Following which you returned to British Columbia?

44 A I worked for a year in Toronto before returning to
45 British Columbia.

46 Q Okay. And upon your return to British Columbia,
47 you went straight to Vancouver General Hospital

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1 where you've been since that time?
2 A Yes.
3 Q Approximately how many autopsies have you
4 performed?
5 A Approximately 2500, 2500 to 3000 so far.
6 Q And can you estimate how many of those had a
7 forensic component?
8 A The majority of those were of a forensic
9 component, probably about one to 200 were of
10 hospital cases, hospital autopsies.
11 Q I wonder if you'd just take a brief moment, sir,
12 and explain to the Commissioner what forensic
13 pathology is and what forensic pathologists do?
14 A Forensic pathology is the study of death, I
15 suppose. As a forensic pathologist, I perform
16 autopsies on people who die suddenly or in
17 suspicious circumstances, and through the use of
18 the autopsy, I try and determine a cause of death.
19 Q Now, I take it that an autopsy has a number of
20 components, the most obvious would be the -- well,
21 I guess your examination has a number of
22 components. The most obvious would be the autopsy
23 on the body; is that correct?
24 A Yes. An autopsy is composed of an external and an
25 internal examination of the body.
26 Q Okay. And in the course of performing an autopsy
27 and ultimately coming to conclusions, you also, on
28 occasion, consulted external material, external to
29 your examination?
30 A Yes.
31 Q And that would be information provided either --
32 in most cases, by the coroner's office or in some
33 cases by police forces?
34 A Yes.
35 Q Okay. In this case, I take it, you were chosen to
36 perform the autopsy simply because it was your
37 turn or you were on duty?
38 A I believe so, yes.
39 Q The autopsy was performed on the 16th of October,
40 2007?
41 A Yes, that's correct.
42 Q We're speaking about an autopsy on Mr. Dziekanski.
43 That's who you knew it be at the time?
44 A Yes.
45 Q Fair enough. Who was present at the time of the
46 autopsy, sir?
47 A There were a couple of police officers and an

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In chief by Mr. McGowan

1 attendant, an assistant for myself.
2 THE COMMISSIONER: Yes, Mr. Neave?
3 MR. NEAVE: Thank you, Mr. Commissioner, David Neave,
4 for the record. I have no difficulty with Dr.
5 Lee's qualifications. It would be my submission
6 that he be qualified formally to give an expert
7 opinion and the areas in which he's entitled to
8 opine be outlined for the purposes of the record
9 before we get into the facts. I'm not sure if any
10 of my other friends take issue with Dr. Lee's
11 qualifications, but I thought I would put that on
12 the record.
13 THE COMMISSIONER: Yes, thank you. I think that's just
14 about to happen.
15 MR. MCGOWAN: Yes. Well, perhaps now would be an
16 appropriate time, then, Mr. Commissioner. He's an
17 expert in forensic pathology and entitled to give
18 opinions in that area.
19 THE COMMISSIONER: No comment? Yes, he will be so
20 qualified.
21 MR. MCGOWAN:
22 Q All right. So I was asking you about the autopsy.
23 You were present?
24 A Yes.
25 Q Obviously. You had an assistant present?
26 A Yes.
27 Q The other two persons present were both police
28 officers?
29 A Yes.
30 Q It's an Officer Christiansen, who is an ident --
31 identification officer?
32 A Yes.
33 Q And that officer was present for the purposes of,
34 I presume, taking photographs and perhaps
35 gathering other evidence that might need to be
36 gathered?
37 A Yes, that's correct.
38 Q Okay. There was also an Officer Hoivik present?
39 A Yes.
40 Q And you understood him to be a member of the
41 investigating force as well?
42 A That's correct.
43 Q Okay. And did you understand that he had a
44 particular role at the autopsy or reason for being
45 there?
46 A I believe he is simply attending to view the
47 autopsy as well as ensure that any evidence

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1 collected is -- that there is an unbroken chain of
2 custody for the evidence.
3 Q Did either Officer Hoivik or Officer Christiansen
4 provide you any information about Mr. Dziekanski
5 or his involvement with the police?
6 A One of them provided me a copy of the -- of the
7 video of the event. Other than that, neither one
8 had sufficiently more information than what was
9 already given to me by the coroner at the time.
10 Q Okay. So let's talk about the information you
11 had. There was the video. Now, this is the video
12 we've all come to know as the Pritchard video?
13 A Yes, that's correct.
14 Q It's the one that's been shown on the news a
15 number of times showing the police interacting
16 with Mr. Dziekanski?
17 A Yes, that's correct.
18 Q Okay. And did you watch -- did you -- you
19 received it on a CD or a DVD?
20 A Yes.
21 Q And did you watch it in its entirety prior to
22 performing the autopsy on Mr. Dziekanski?
23 A I skipped certain parts in the beginning and
24 watched when the police arrived on scene until the
25 end.
26 Q Okay. And did you watch the portion afterwards,
27 after he was handcuffed and on the ground or
28 after --
29 A Yes.
30 Q -- or during the time he was being handcuffed?
31 A Yes, I did.
32 Q Okay. Did you watch any of the video prior to
33 doing the autopsy of the time leading up to the
34 police arriving?
35 A I watched bits and pieces of it before the
36 autopsy.
37 Q Did you view the videos again after the autopsy?
38 A Yes, I did.
39 Q Okay. In their entirety?
40 A Yes, I did.
41 Q Okay. And did you watch each of the three clips
42 of the Pritchard video?
43 A Yes, I did.
44 Q Okay. Aside from handing you the DVD, the
45 officers Hoivik and Christiansen told you nothing
46 else about the incident?
47 A I don't recall them telling me much more. I think

6
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1 at the time, the amount of information known was
2 quite limited.
3 Q Okay. Did you make any inquiries of Officer
4 Christiansen or Officer Hoivik regarding the
5 incident?
6 A I believe I asked Officer Hoivik if he had any
7 further information on the case, and I don't think
8 he provided me much more information.
9 Q Okay. Now, in addition to having the video, you
10 also received a Form B from the coroner.
11 A Yes, that's correct.
12 Q Is this the form that's routinely provided in the
13 course of a request to do an autopsy?
14 A It's actually required. It's the coroner's
15 authorization form that authorizes me to do an
16 autopsy. Without that form, I'm actually not
17 allowed to even touch the body. It also provides
18 me with basic background information on the case
19 that they know at the time.
20 Q Okay. This form constitutes the part of the
21 request for you to do an -- or an authorization
22 for you to do an autopsy, and in the body of the
23 report, there's certain information about the
24 individual and the circumstances provided to you.
25 A That's correct.
26 Q Okay. So the circumstances we see here, we --
27 well, first of all, there's -- you're advised that
28 Mr. Dziekanski comes from Poland.
29 A Yes.
30 Q Because of the address. That he's a male?
31 A Yes.
32 Q You're given a date of birth?
33 A Yes.
34 Q And an estimate time of death?
35 A Yes.
36 Q And obviously the date of death. And then you're
37 provided with the following circumstances: D, is
38 that -- is that short for Dziekanski?
39 A Decedent.
40 Q Decedent, okay. [As read]:
41
42 Decedent observed to be acting irrationally
43 at YVR, agitated, yelling, tossing nearby
44 objects. Security tried to calm him, tasered
45 by RCMP. Decedent stumbled backwards, still
46 described as agitated. Decedent struggling
47 as officers handcuffed him, became

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1 unconscious quickly after being handcuffed,
2 placed semi-prone on floor. Breathing
3 initially normal and pulse normal,
4 intermittent noisy and snoring-like
5 breathing, described as blue while still
6 breathing. Decedent awake for 33 hours
7 travelling.
8

9 That's the sum of the circumstances you were
10 provided?

11 A Yes.

12 Q Was this expanded on in any way by any police
13 officer or the coroner or anybody else?

14 A At the time, I don't believe so, no.

15 Q Okay. And does that carry through right until the
16 time of your writing your report?

17 A Yes.

18 Q Okay. Medical history, you're not provided
19 anything on this form?

20 A That's correct.

21 Q Okay. I understand you were provided with copies
22 of the medical records, Mr. Dziekanski's
23 immigration medical records.

24 A Yes, that's correct.

25 Q Okay. And we'll come to those in a minute. But
26 perhaps just while we're speaking about them, were
27 they in English or Polish?

28 A Most of it was in Polish.

29 Q And were you able to understand the Polish
30 portions?

31 A I was given a rough translation, and I believe it
32 was sufficient.

33 Q Okay. Who did the translation, do you know?

34 A One of the -- one of the individuals at the
35 coroner's office.

36 Q Fair enough.

37 A And do you have those records with you today with
38 the translation on them?

39 A Yes, I do.

40 Q Okay. I wonder if I might see those for a moment,
41 please.

42 I'm just going to put the records in front of
43 you. I wonder if you could just show me where the
44 translation you're speaking of is.

45 A Basically it's this one caption. Lungs/cardio
46 with no changes.

47 Q Okay. So when you're speaking -- you're speaking

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1 of a single translation, of a single entry which
2 is contained in a letter that came with the
3 document.

4 A Yes, that's correct.

5 Q So this is one of the pieces of information you
6 relied on in completing your report?

7 A Yes.

8 MR. MCGOWAN: Mr. Commissioner, I'm going to ask that
9 that be the next exhibit, please.

10 THE COMMISSIONER: Yes, all right. And the --

11 MR. MCGOWAN: And we should also mark, perhaps, the
12 Form B, if we haven't done so already.

13 THE REGISTRAR: The Form B will be marked as Exhibit
14 101, and the second document will be marked as
15 102.

16

17 EXHIBIT 101: Form B from coroner

18

19 EXHIBIT 102: Medical reports of Mr.

20 Dziekanski, ordered sealed

21

22 MR. MCGOWAN: I think I've also neglected to mark his
23 *curriculum vitae* so perhaps we can do that as
24 well.

25 THE COMMISSIONER: Yes.

26 THE REGISTRAR: The c.v. will be marked as Exhibit 103.

27

28 EXHIBIT 103: *Curriculum vitae* of Dr. Charles
29 Lee

30

31 MR. MCGOWAN: Now, I just have a single copy of the
32 letter which accompanies these records, but my
33 understanding is the records have been provided to
34 counsel. Perhaps we can make a copy for Dr. Lee
35 at the break so he has one for his file as well.

36 Q Now, Doctor, back to the Form B. Nothing is
37 listed under "Medical History" and some of the
38 information you had about the medical history is
39 contained in the records we just marked?

40 A Yes.

41 Q Okay. There's a heading "Drug Medication" and it
42 indicates that there was none found at the scene
43 or in the luggage, and there is a note, "May have
44 consumed alcohol."

45 A Yes, that's correct.

46 Q Okay. And there was -- and you knew at the time
47 you got this form there was a toxicology analysis

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1 ordered?
2 A Yes. That's routine.
3 Q Okay. And you had the result of that toxicology
4 -- those toxicology tests before you wrote your
5 report?
6 A No, I collected the toxicology samples. They were
7 sent to the toxicologist, and --
8 Q Yes. You had the results before you wrote your
9 report?
10 A Yes.
11 Q Not before you did your autopsy, of course.
12 A Yes, that's correct.
13 Q Okay. So have we now covered all of the
14 information that you had when you wrote your
15 report, that being the medical records, the video,
16 the Form B and any observations or findings you
17 made during the autopsy, and finally, the
18 toxicology analysis.
19 THE COMMISSIONER: And the video.
20 MR. MCGOWAN: Yes, and the video.
21 A Yes.
22 Q Okay. That's everything you had?
23 A Yes.
24 Q And your opinion was based on those sources of
25 information alone?
26 A Yes.
27 Q Okay. Now, just before we put the Form B on the
28 ground, it's not specific as to the number of
29 times that the Taser was deployed. Were -- what
30 information were you operating on at the time you
31 did your autopsy and wrote your report regarding
32 the number of times the Taser was deployed?
33 A From the video, it appeared that he was tasered
34 once.
35 Q Okay.
36 A So you wrote your report on the assumption or the
37 basis of a conclusion that he was tasered one time
38 -- or the Taser was deployed one time?
39 A Yes.
40 Q Okay. And no information contrary to that was
41 ever provided to you prior to your writing your
42 report?
43 A That's correct.
44 Q Now, just for the benefit --
45 THE COMMISSIONER: Now, excuse me, counsel. With
46 reference to the medical report, should that --
47 Exhibit 102, should that be sealed? Is there

10
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1 personal information in there?
2 MR. MCGOWAN: There is personal information in there.
3 I wonder if it might be helpful to hear from
4 Mr. --
5 THE COMMISSIONER: Or is it public and so it's --
6 MR. MCGOWAN: -- Kosteckyj.
7 MR. KOSTECKYJ: I -- I haven't received instructions
8 from my client. Until I do, I think it should be
9 sealed.
10 THE COMMISSIONER: All right. It'll be sealed.
11 THE REGISTRAR: It will be so marked.
12 MR. MCGOWAN:
13 Q Now, the -- you have a copy of the report that you
14 completed relating to Mr. Dziekanski?
15 A Yes, I do.
16 Q Okay. I'll ask you to have it in front of you.
17 A Okay.
18 MR. MCGOWAN: Now, Mr. Commissioner, Dr. Lee's report
19 has already been marked as an exhibit. It's
20 Exhibit 76 -- pardon me. Yes, it's Exhibit 76.
21 THE COMMISSIONER: All right. Thank you.
22 MR. MCGOWAN: And I do have an extra copy of that.
23 THE COMMISSIONER: I have it.
24 MR. MCGOWAN: Okay. Thank you.
25 Q And, Dr. Lee, I wonder if you'd just take a moment
26 and give the Commissioner just a brief and general
27 overview of how an autopsy is performed, what the
28 various steps are that are performed.
29 A Okay. The first part of the autopsy is
30 examination of the outside of the body, noting any
31 injuries, any scars, any identifying marks on the
32 outside of the body.
33 Q I'm sorry, Doctor, I'm just going to interrupt you
34 and ask you to either move the microphone a little
35 closer or perhaps direct your head.
36 A Okay.
37 Q It's difficult for some other people on this side
38 to hear you.
39 A Okay. So --
40 THE COMMISSIONER: I'm sorry, I'm going to interrupt
41 again.
42 A Yes.
43 THE COMMISSIONER: Is there a problem?
44 UNIDENTIFIED SPEAKER: Yeah, the audio is not coming
45 through -- back. It's turned off in the back
46 here, yeah, it sounds like (indiscernible - not at
47 microphone).

11
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1 THE COMMISSIONER: I think we're going to have to take
2 a short break. We're having trouble with the
3 audio.

4 A Okay.

5 THE REGISTRAR: The hearing will now recess for about
6 ten minutes.

7

8 (WITNESS STOOD DOWN)

9

10 (PROCEEDINGS ADJOURNED)

11 (PROCEEDINGS RECONVENED)

12

13

CHARLES LEE, a witness,
recalled.

14

15

16 MR. MCGOWAN: Thank you for your patience, Doctor.
17 We've been having some difficulty with the audio,
18 but it appears to be rectified, at least for now.

19

20

21

22

23

24

A Yes. I'll take it from the top. An autopsy is
25 composed of two major parts. The first part is
26 examination of the outside of the body looking for
27 any injuries, any scars, any tattoos, any
28 identifying marks as well as stating the overall
29 appearance and status of the body.

30

31

32

33

34

Q Sorry, just before you go into the second step, I
wonder if you could try talking a little closer to
the microphone. There appears to still be some
difficulty hearing you.

35

36

37

38

39

40

41

A Okay. The second part of the autopsy involves
examination of the internal part of the body. I
open up the body and examine the individual
organs. At that time, I also collect specimens
for toxicology testing. Again, I note any
injuries or any other abnormalities in the
internal organs.

42

43

44

Q Okay. So there's both an external and an internal
component to your autopsies?

45

46

47

A Yes.

Q And you did both of those components with respect
to Mr. Dziekanski?

A Yes.

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1 Q There's also a toxicology analysis that gets done
2 in most cases?
3 A Yes.
4 Q And that was done with Mr. Dziekanski?
5 A Yes.
6 Q Is there also a microscopic examination that's
7 performed in some cases?
8 A Yes. I routinely take representative samples of
9 all the organs and examine them microscopically.
10 Q All right. Let's turn now to your autopsy of Mr.
11 Dziekanski. We'll start with -- I take it the
12 external exam comes first?
13 A Yes.
14 Q I wonder if you'd just take a moment and describe
15 your significant findings from your external exam
16 of Mr. Dziekanski.
17 A The external examination didn't show a lot. He
18 had a number of minor injuries, mainly scratches
19 and bruises. He had a slightly darkened puncture
20 mark in the centre -- centre of the chest
21 consistent with a -- one of the barbs of a Taser.
22 I didn't find another definite Taser mark
23 elsewhere on the body. He also had signs of
24 resuscitation. He had a number of medical devices
25 on him.
26 Apart from that, there really weren't a lot
27 of findings. He had some old scarring on parts of
28 the body, but that represented old injuries only.
29 So essentially, there really weren't a lot of
30 findings externally.
31 Q Okay. Now, you determined Mr. Dziekanski to be
32 177 centimetres tall?
33 A Yes.
34 Q And would that be a reasonably accurate
35 measurement.
36 A Yes, I believe so.
37 Q And you determined that he was 86 kilograms?
38 A Yes.
39 Q And that's taken -- a weight taken from a scale
40 you use?
41 A Yes.
42 Q You determined he was of average build and well-
43 nourished?
44 A Yes.
45 Q Did he appear to be a healthy man to you when you
46 looked, just from the external examination?
47 A He appeared to be reasonably healthy.

- 1 Q Okay. Now, you also discovered some petechial
2 haemorrhaging; is that right?
- 3 A Yes.
- 4 Q I wonder if you could just, in a few words,
5 explain to the Commissioner what petechiae are or
6 petechial haemorrhaging.
- 7 A Petechiae are pinpoint haemorrhages caused by
8 bursting very small capillaries, small blood
9 vessels. They're somewhat non-specific in the
10 sense that they occur in a wide number of
11 situations. They're commonly associated with
12 asphyxia or neck compression, but they can be --
13 they can occur in a number of natural diseases
14 such as heart disease. It can occur during
15 resuscitation by CPR.
- 16 So, in a sense, it's a fairly non-specific
17 finding, but it is something that I note.
- 18 Q And you found petechiae present in Mr.
19 Dziekanski's eyes?
- 20 A Yes. There -- were a few petechiae only in one --
21 one part, basically the lower eyelid on the left
22 side.
- 23 Q Okay. And you noted various scratches or bruises
24 or abrasions?
- 25 A Yes.
- 26 Q And those are noted in your report and also
27 evidenced in some of the photographs taken?
- 28 A Yes.
- 29 Q Okay. And what did they appear to be consistent
30 with?
- 31 A They were consistent with an altercation or a
32 struggle.
- 33 Q Okay. Now, you talked to us about finding one
34 injury which appeared consistent with the Taser
35 probe.
- 36 A Yes.
- 37 Q Okay. Where was that located on the body?
- 38 A Basically the centre of the chest, just at the
39 lower end of the sternum.
- 40 Q So slightly above the xiphoid process?
- 41 A Yes.
- 42 Q And approximately centre?
- 43 A Yes.
- 44 Q Okay. Did you find any other marking on the body
45 that may be consistent with a Taser probe?
- 46 A There was another mark on the lower right abdomen,
47 almost -- almost laterally on the abdomen. Again,

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1 it was like a puncture-type scratch, so it could
2 be the result of a Taser mark, although it did
3 look different than the one in the centre of the
4 chest.
5 Q Okay. I'm going to see if you can give us some
6 information about the location of that so we can
7 get a clear understanding of exactly where that
8 was. Was it above or below the beltline?
9 A It was just sort of at the beltline. It's where
10 the crest of the hipbone -- if you feel on the
11 side the crest of the hipbone, it was above that.
12 Q Approximately how far above the crest of the
13 hipbone?
14 A Probably one or two centimetres above the hipbone.
15 Q Okay. And in terms of -- if we're looking at the
16 body front -- well, first of all, was it on the
17 right or left side, Mr. Dziekanski's right or
18 left?
19 A It was on his right side.
20 Q Okay. And approximately how far around the body
21 towards the side was it?
22 A It was almost on the side itself, so it was quite
23 lateral from the midline.
24 Q Okay. So almost right where the front of the body
25 turns to the side of the body on that corner?
26 A Yes.
27 Q All right. And did you have -- did you take a
28 photograph or have a photograph taken of that
29 particular injury?
30 A I thought I did, but my photos don't show it.
31 Q Okay. Now, we've heard some evidence, Dr. Lee,
32 and in fact seen some photographs not taken during
33 your autopsy, but taken earlier, showing small
34 circular red burns which appear to be some sort of
35 a pattern burn on the back scapula or shoulder of
36 Mr. Dziekanski. Is that something that you made a
37 note of during your autopsy?
38 A No, that's not something that I saw.
39 Q Okay. Do you recall having any discussion with
40 either of the officers present about any markings
41 on the scapula or shoulder?
42 A No, I don't.
43 Q Fair enough. So aside from the petechiae, the
44 abrasions and the puncture marks, is there
45 anything else of note that you noticed during your
46 external examination?
47 A No, there weren't.

15
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In chief by Mr. McGowan

1 Q Okay. After the external examination, you
2 proceeded to the internal examination.
3 A Yes.
4 Q And that consisted of actually opening the body
5 up, examining the organs visually, and in some
6 cases, weighing them or taking sections from them?
7 A Yes.
8 Q Okay. And am I right that the internal
9 examination, one of the things you're looking for
10 is pathology?
11 A Yes.
12 Q Unrelated perhaps to the incident which
13 immediately preceded death?
14 A Yes.
15 Q Okay. Each of the organs of significance were
16 examined in Mr. Dziekanski's case?
17 A Yes.
18 Q And those findings are noted in your report under
19 the heading "Internal Examination"?
20 A Yes.
21 Q And if I look through your report, and I think --
22 correct me if I'm wrong, but you had significant
23 findings with respect to several organs; is that
24 correct?
25 A There were findings --
26 Q Findings which might be significant, which you
27 noted at least.
28 A Yes, there were findings in several organs, but
29 overall, there weren't a lot to find. Most of the
30 organs were relatively normal. There were no --
31 no internal injuries. Again, the findings were
32 not a lot.
33 Q Okay. Let's start with internal injuries. Did
34 you find any internal injuries consistent with
35 significant trauma?
36 A The only internal injuries that he had were rib
37 fractures on both sides and a fracture of the
38 breast bone. All those are consistent with CPR
39 with chest compressions.
40 Q You frequently see those in CPR, I take it.
41 A Yes, it's quite common.
42 Q When CPR is performed. Okay. Aside from that,
43 nothing consistent with trauma?
44 A That's correct.
45 Q All right. Speaking generally, what did your
46 internal examination reveal about -- before we get
47 to the specific, perhaps less significant overall

1 health, what did they reveal generally about Mr.
2 Dziekanski's state of health?
3 A Overall, he was in reasonable health.
4 Q Did you find any significant pathology present?
5 A There were certain findings that were consistent
6 with alcohol use, primarily in the brain, the
7 heart and the liver.
8 Q Okay. We'll come to the brain, the heart and the
9 liver in just a moment. Aside from what you're
10 going to tell us about those, did you find any
11 other pathology or evidence of poor health or
12 disease?
13 A No.
14 Q All right. So the significant organs we need to
15 speak about are the heart, the liver and the
16 brain; is that right?
17 A Yes.
18 Q All right. Let's start with the liver. Tell the
19 Commissioner about your findings relating to Mr.
20 Dziekanski's liver.
21 A He had what's known as fatty liver. Fat contained
22 the various liver cells and the liver contained a
23 large amount of fat. A number of conditions can
24 cause it. Alcohol -- recent alcohol ingestion is
25 one of the most common causes of it, especially
26 for a very fatty liver that he had. So that's one
27 indication of recent alcohol use. But, by itself,
28 the fatty change wouldn't significantly affect his
29 health. It's simply a finding.
30 Q If a healthy person went out on a weekend and
31 drank reasonably significant quantities of alcohol
32 for a day or two, but otherwise didn't consume
33 alcohol regularly, would they have a fatty liver
34 after that?
35 A Yes, for a few days afterwards, and it will
36 eventually disappear as long as he doesn't drink
37 more alcohol.
38 Q Okay. So does the fatty liver you saw in Mr.
39 Dziekanski tell you anything about use over a
40 period of time, or simply give some hint as to the
41 possibility of recent use?
42 A No, it only suggested that he had consumed alcohol
43 recently.
44 Q Okay. Is there any other explanation for the
45 liver in the state it was?
46 A Fatty liver can be caused by certain other
47 medication. Obese individuals can also have a bit

- 1 of a fatty liver. Certain other conditions, one
2 of them being pregnancy -- obviously he's not
3 pregnant -- but one of them could be pregnancy.
4 So again, certainly other conditions can cause a
5 fatty liver.
- 6 Q Which is the most common in your experience if
7 you're able to say?
- 8 A In my experience, it's usually alcohol
9 consumption.
- 10 Q Okay. Is that -- does that fairly summary your
11 findings with respect to the liver then?
- 12 A Yes.
- 13 Q Okay. Let's move on to the brain. Tell the
14 Commissioner about the findings you made with
15 respect to Mr. Dziekanski's brain, and
16 specifically any atrophy you noticed.
- 17 A Yes. Overall, the brain itself appeared to be
18 somewhat atrophied or shrunken. The main part of
19 the brain, what's known as the cerebrum, it's made
20 -- it's composed of a number of folds on the
21 surface of the brain, and those appear to be
22 somewhat smaller. As a result, the space between
23 the folds look a bit widened. Again, it's very
24 minimal and probably not of any significance to
25 him.
- 26 The other area of atrophy I noted was part of
27 the cerebellum which is part of the brain that
28 sort of sits underneath the large cerebral lobes.
29 A portion of the midline of the cerebellum was
30 atrophied, and it was moderately -- moderately
31 atrophied. That, again, is fairly specific to
32 chronic alcohol use, but the rest of the brain
33 appeared normal.
- 34 Q Okay. Now, I neglected to ask you with the liver,
35 the findings that you made, were they made by way
36 of a visual examination?
- 37 A Yes. Both grossly by the naked eye as well as
38 microscopically.
- 39 Q Okay. And with respect to the brain, the findings
40 you're telling us about now, were they made
41 visually by visually examining the organ?
- 42 A Yes, both grossly and microscopically.
- 43 Q Now, the atrophy you've told us about, is it in
44 the cerebellum that's most significant?
- 45 A Yes.
- 46 Q Okay. That atrophy you've told us is consistent
47 with chronic alcohol use?

- 1 A Yes.
- 2 Q Okay. Is it consistent with anything else?
- 3 A There are probably some other rare brain diseases
4 that can cause atrophy. I don't know of any that
5 are specific to that one portion of the
6 cerebellum. Usually cerebellar diseases affect
7 more than just one part of the cerebellum.
- 8 Q Does it tell us anything about the recency of the
9 alcohol use?
- 10 A No. All it tells me is that there most likely was
11 repeated episodes of drinking.
- 12 Q Okay. Does it tell you whether those were recent
13 or many years in the past?
- 14 A No, it doesn't.
- 15 Q Is there anything else about your examination of
16 the brain which you found significant to your
17 opinion relating to Mr. Dziekanski?
- 18 A No. The rest of the brain was overall relatively
19 normal.
- 20 Q And that brings us to the heart. You performed an
21 examination of Mr. Dziekanski's heart.
- 22 A Yes.
- 23 Q Did you notice any abnormality (sic) --
24 abnormality or pathology relating to Mr.
25 Dziekanski's heart?
- 26 A Well, grossly, the heart appeared dilated. Again,
27 a dilated heart is not specific to any one cause.
28 There could be a number of causes that can lead to
29 a dilated heart.
- 30 The other finding was sort of a soft finding
31 in that there was an absence of atherosclerosis in
32 the coronary arteries. Again, being that he's
33 male, he's 40, given those findings, I would have
34 expected him to have at least some
35 atherosclerosis. It's been my experience that
36 many chronic alcoholics have very clean coronary
37 arteries. Again, it's a soft finding. There may
38 be a number of reasons why a person has no
39 atherosclerosis. But, in combination with the
40 other findings, it certainly suggested that he was
41 a chronic alcoholic.
- 42 Q Okay. Let's start first of all with the finding.
43 We see reference in your report to cardiomyopathy.
44 Is that what you're speaking about here?
- 45 A Yes.
- 46 Q Okay. And your conclusion in that regard, did it
47 come from a visual examination of the heart?

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1 A Yes.
2 Q Okay. Is that a finding which can be confirmed by
3 way of microscopic analysis?
4 A I was hoping that it would be confirmed by
5 microscopic analysis, but the microscopic findings
6 were minimal.
7 Q Okay. Is it often confirmed by microscopic
8 analysis?
9 A Generally, yes.
10 Q Generally, yes, okay. And in this case, did your
11 microscopic analysis confirm your finding of
12 cardiomyopathy?
13 A Not really, no.
14 Q All right. To the extent your visual examination
15 told you anything, tell the Commissioner about
16 that.
17 A Again, the heart -- the ventricles, the chambers,
18 lower chambers of the heart were dilated.
19 Normally the chambers are fairly -- fairly small
20 in a resting heart. In this case, they were
21 markedly enlarged and the wall of the heart was
22 somewhat thinned. Again, there are a number of
23 causes, potential causes of this, atherosclerosis
24 probably the most common. But a significant
25 number of chronic alcoholics do develop a dilated
26 heart.
27 A number of other medications can also cause
28 a dilated heart. So again, a number of potential
29 causes can lead to a dilated heart. In this case,
30 especially with the absence of significant
31 microscopic findings, it's probably not a severely
32 sick heart. I think overall his heart was in
33 reasonably good health. Again, it's just more of
34 a finding more than a significant potential cause
35 of death by itself.
36 Q Okay. I'm looking at page 4 of your report under
37 the heading "Heart", and you note some -- about
38 halfway down just to the right of the --
39 A Yes.
40 Q -- word "Heart". You note some measurements
41 there, .4 centimetres and then the left was 1.3
42 centimetres in thickness.
43 A Yes.
44 Q Were those measurements significant to your
45 suggestion of the possible presence of a
46 cardiomyopathy?
47 A No, those were within the normal range.

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1 Q Okay. Are they often without -- outside the
2 normal range if there's a cardiomyopathy?
3 A It can. A dilated heart can have either a very --
4 a thinner than normal wall or a thicker than
5 normal wall.
6 Q And was his thinner or thicker?
7 A It was probably, given the size of the dilations,
8 probably thinner than it should have been. But
9 again, that --
10 Q What's normal range?
11 A Up to 1.5 centimetres for the left ventricle.
12 Again, in a normal heart, once the heart becomes
13 dilated, generally the thickness of the wall
14 increases as well. But again, the numbers really
15 aren't very useful in terms of determining
16 significance of the pathology.
17 Q You refer to your findings with respect to the
18 heart as -- I think you called them soft findings.
19 A The --
20 Q Is that -- is that some indication as your degree
21 of certainty or what does that mean?
22 A I refer to the coronary arteries as soft finding
23 simply because there -- again, there could be a
24 number of reasons why he doesn't have significant
25 or any atherosclerosis in the coronary arteries.
26 But again, it's something that I see in
27 conjunction with chronic alcohol use. Combined
28 with the other features, it certainly suggested
29 that Mr. Dziekanski had consumed alcohol in the
30 past to a significant degree.
31 Q Okay. Does it tell -- tell you anything, your
32 findings with respect to the heart, about the
33 timing? Assuming it does come from alcohol use,
34 does it tell you anything about the timing of that
35 alcohol use?
36 A No, it doesn't.
37 Q Does it tell you anything about the pattern of
38 drinking?
39 A No, it doesn't.
40 Q Okay. Would the findings that you've made with
41 respect to alcohol use perhaps be found in
42 somebody who drank not insignificant quantities of
43 alcohol once a week or twice a week?
44 A Yes, it's possible.
45 Q Would it be found from somebody who perhaps went
46 out and drank fairly significantly once or twice a
47 month?

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1 A I guess it's possible.
2 Q Are the findings consistent with somebody who
3 drank heavily every single day?
4 A Again, it's --
5 Q Would you --
6 A It's possible.
7 Q Okay. If Mr. Dziekanski had been drinking for a
8 number of years heavily every single day, would
9 you expect to see findings like this or more
10 pronounced findings?
11 A It's difficult to say because of the individual
12 variability. Each person can handle a certain
13 amount of alcohol before it starts to damage their
14 system and not every alcoholic has every single
15 finding associated with chronic alcoholism. Some
16 people can drink heavily and not develop cirrhosis
17 of the liver. Others can drink heavily and not
18 develop pancreatitis and so on. So it's quite
19 variable, the findings, in individual persons who
20 drink heavily.
21 Q Were you provided any information about Mr.
22 Dziekanski's drinking patterns from any police
23 source or coroner source or any other source?
24 A No, I haven't.
25 Q Now, I'm just flipping onto page 5 of your report.
26 We see that there is a toxicology analysis. That
27 was done by Dr. Martz?
28 A Yes.
29 Q You took the samples during your autopsy?
30 A Yes.
31 Q Provided them to -- through your hospital to Dr.
32 Martz who did the toxicology analysis?
33 A Yes.
34 Q And you were ultimately provided with the results
35 of that?
36 A Yes.
37 Q And you incorporated those results into your
38 opinion?
39 A Yes.
40 Q Okay. And finally we see the heading "Microscopic
41 Description". You conducted microscopic analyses
42 of five organs?
43 A Yes.
44 Q Okay. And were there any significant findings
45 from the microscopic analysis that you performed?
46 A Again, in the liver it confirmed the fatty liver.
47 There was a small amount of inflammation as well,

1 but that's probably not significant. Again, the
2 brain, microscopic sections of the cerebellum
3 showed the findings of the atrophy.

4 Q Okay. So let's see if we can just go through then
5 and summarize what factors you drew on as
6 significant in forming your opinion. I take it
7 the first is that -- well, let me ask you this:
8 From what you found during your analysis, was
9 there anything that, without a consideration of
10 external circumstances, led you to make any
11 conclusions about the cause of death?

12 A Well, based on the autopsy itself and the
13 toxicology itself, there were essentially no
14 significant findings and nothing to explain the
15 death in itself. In other words, there were no
16 anatomic or toxicological cause of death in this
17 case.

18 The findings that were there, in terms of the
19 injuries, were minor. In terms of the other
20 findings, the organs, again, they pointed to
21 alcohol use but, by themselves, would not have
22 killed him. So, in a sense, the autopsy was
23 basically a negative autopsy.

24 Q Let me ask you specifically about the heart and
25 this cardiomyopathy. Was that something that was
26 likely to cause Mr. Dziekanski to die absent any
27 other external factors?

28 A It may have increased his likelihood of having a
29 sudden death, but it's not -- it's not something
30 that I would have considered imminent. Basically
31 he was reasonably healthy.

32 Q In the context of what you have -- what you found
33 during the autopsy, does that lead you to any
34 conclusion as to what the mechanism of death was?

35 A In cases like this, the mechanism of death is
36 almost certainly a biochemical or physiological
37 mechanism, most likely a result of what's known as
38 a hyperadrenergic state. Basically the person is
39 agitated --

40 Q Well, I'm sorry, I don't mean to cut you off. I'm
41 certainly going to come to that, but speaking of
42 what you found in the autopsy, what happened when
43 Mr. Dziekanski died? Is it -- can you tell,
44 because of the absence of everything else, that
45 it's a cardiac event? That, you know, he died
46 from anything related to that? Is there something
47 -- are there conclusions that you draw as a

- 1 pathologist, in the context of no other obvious
2 cause?
- 3 A Yes. Most likely it is a cardiac event. He
4 likely developed a lethal arrhythmia and died as a
5 result of it.
- 6 Q Okay. Now, I've asked you that question speaking
7 only, of course, about what you determined from
8 your external and internal autopsy components,
9 right?
- 10 A Yes.
- 11 Q You of course consulted other material?
- 12 A Yes.
- 13 Q You consulted the Form B you told us?
- 14 A Yes.
- 15 Q And the Polish medical records and the video.
- 16 A Yes.
- 17 Q Okay. And also ultimately the report of Dr.
18 Martz.
- 19 A Yes.
- 20 Q Okay. And putting those together with your
21 findings from the autopsy, you ultimately drew
22 certain conclusions.
- 23 A Yes.
- 24 Q Okay. And those are set out in the portion of
25 your report called commentary.
- 26 A Yes.
- 27 Q And they're also reflected, to some degree, on the
28 first page of your report under the headings:
29 "Principal Cause of Death" and "Contributory
30 Factors".
- 31 A Yes.
- 32 Q Okay. Let's start on page 1 with "Contributory
33 Factors". The first, and in fact the only one you
34 list is chronic alcoholism.
- 35 A Yes.
- 36 Q And that's a conclusion you drew, you've told us,
37 from the liver, from the heart and from the brain.
- 38 A Yes.
- 39 Q So that -- those two words right there, those
40 encompass your findings with respect to the
41 organs.
- 42 A Yes.
- 43 Q Okay. I take it this isn't a complete list of the
44 factors which you found to have contributed to the
45 death potentially.
- 46 A Yes, that's correct.
- 47 Q And then under part 1 on the very first page, you

1 list "Principal Cause of Death, Sudden Death
2 During Restraint."

3 A Yes.

4 Q Now, you told us that death was likely a cardiac
5 event from a lethal arrhythmia. Is that -- is
6 there a reason that's not listed here?

7 A Well, again, the part 1 list -- I'm suppose to
8 list a cause of death.

9 Q Yes.

10 A What you described as a lethal arrhythmia, that's
11 the mechanism of death and that's not a cause of
12 death. There is a distinction between those two
13 terms.

14 Q Okay.

15 A Cause of death is the illness or injury that leads
16 to death, and the mechanism of death is the
17 physiological of process by which the cause of
18 death exerts its effect.

19 So, for example, a cause of death would be,
20 say, for example, gunshot wound to the chest. The
21 mechanism of death in most cases would be
22 exsanguination or blood loss.

23 Q Okay.

24 A So there is a slight distinction. In cases like
25 this, it's very difficult to actually come up with
26 an accurate and appropriate cause of death simply
27 because no one's really quite sure exactly what to
28 call these types of deaths. Some people use the
29 term "excited delirium syndrome". Others use a
30 more descriptive cause of death.

31 In my case, it's kind of a descriptive cause
32 of death in the sense that these deaths occur
33 during, or shortly after, a violent struggle and
34 restraint process. But that -- there's no
35 anatomic or toxicological -- in most cases,
36 anatomic cause of death to explain why the person
37 died.

38 Q Okay. So when you're talking about the cause of
39 death, that's your explanation for why you use the
40 words "sudden death during restraint".

41 A Yes.

42 Q Okay. Now, we talked about the contributory
43 factors, chronic alcoholism. You told us that
44 wasn't a complete list. What else should be on
45 that list?

46 A Well, the main list is the restraint. That's why
47 I list that as Part 1. Clearly this person was

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1 agitated to begin with, and then you add to that
2 the fact that he was restrained. That, plus the
3 fact that he wasn't completely healthy to begin
4 with probably all contributed to the eventual
5 formation of the lethal arrhythmia and death.
6 Q Okay.
7 THE COMMISSIONER: Doctor, does the alcohol come into
8 that? I'm failing to see how the alcohol comes
9 into that.
10 A The alcohol itself didn't play a role simply
11 because he wasn't -- he didn't have any alcohol at
12 the time. But the changes of the organs in
13 chronic alcoholism could have made him more
14 susceptible to the development of a lethal
15 arrhythmia.
16 MR. MCGOWAN:
17 Q Are you able to quantify that at all?
18 A No, I can't.
19 Q Would you state -- categorize his organ changes as
20 mild, moderate, advanced? What would you say?
21 A I would say mild to moderate.
22 Q Now, sir, we've -- we've all watched the video and
23 you have now. I'm sure you've seen it several
24 times.
25 A Yes.
26 Q Is that fair? So you can understand that the
27 question a number of people are wondering about is
28 where does the Taser fit in, in terms of your
29 assessment of the cause of death or contributory
30 factors. You haven't listed it as one of your
31 contributory factors either in your report or here
32 today. So perhaps you could address an answer to
33 that to the Commissioner.
34 A I consider a Taser as simply another form of
35 restraint. Therefore it falls under the restraint
36 in Part 1, "Sudden Death During Restraint". There
37 were at least two forms of restraint that I saw.
38 Number 1 was a Taser, number 2 was the -- I guess
39 the tackling of the individual by the RCMP
40 officers. Both of those forms of restraint
41 contributed eventually to his death.
42 Q Okay. So I take it, given that your finding is
43 "Sudden Death During Restraint," and there are the
44 two forms of restraint you've spoken about,
45 correct me if I'm wrong, but would it be important
46 for you to know the details of the restraint in
47 coming to your conclusions?

- 1 A The details would be nice. However, given the
2 fact that I've already said that death was
3 contributed by the restraint, the details probably
4 wouldn't have changed the final diagnosis or the
5 final opinion of death in the sense that I still
6 would have called it "Sudden Death During
7 Restraint," or, "Sudden Death After Restraint."
8 Q Okay. Do you categorize the restraint as
9 causative or contributory? What do you call it?
10 A I would say it's contributory in the sense that
11 there's no single cause of death in this case. I
12 think there were a number of factors that all
13 contributed to finally causing the death.
14 Q Now, at -- one of the things that you talked about
15 in giving your evidence just a few moments ago,
16 you mentioned "excited delirium". Based on the
17 limited information you have, did you form a view
18 in your report as to Mr. Dziekanski's state of
19 delirium, whether he was in a state of delirium?
20 A I didn't think he was actually delirious. From
21 the video, it was clear that he was agitated, but
22 I don't think he was actually in a state of
23 delirium. Therefore I didn't feel it was
24 appropriate to use that term in this case.
25 Q Okay. Does the absence of drugs in his system
26 play into that at all?
27 A In many cases of excited delirium, especially the
28 ones that occur outside of the hospital, most of
29 the cases are caused by drugs, specifically
30 stimulant drugs such as cocaine or
31 methamphetamine.
32 Q Okay. Did you uncover any potential physiological
33 cause of delirium?
34 A No, I did not.
35 Q Emotional disturbance?
36 A No, I did not.
37 Q All right. You've told us, sir, about the two
38 forms of restraint. There's the physical
39 interaction with the police. Is that one of them?
40 A Yes.
41 Q And the other is the Taser?
42 A Yes.
43 Q Okay. With respect to each of those, are you able
44 to say in your opinion whether they were
45 contributing factors in the death of Mr.
46 Dziekanski?
47 A Again, I can't really differentiate what

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

1 proportion of each played a role. Therefore all I
2 can say is that they both probably contributed to
3 his death.

4 MR. MCGOWAN: If I might just have a moment, Mr.
5 Commissioner.

6 Q Sir, there haven't been any addendums or additions
7 to the report since the time you drafted the one
8 we filed as an exhibit?

9 A No, there wasn't.

10 Q Okay. And were you provided any additional
11 information after you completed this report by the
12 coroner, the police or anybody else?

13 A No.

14 Q Aside from what you've seen on the media, you
15 haven't learned anything else about the case?

16 A That's correct.

17 MR. MCGOWAN: Those are my questions. Thank you, Mr.
18 Commissioner.

19

20 CROSS-EXAMINATION BY MR. KOSTECKYJ ON BEHALF OF ZOFIA
21 CISOWSKI:

22

23 Q Dr. Lee, my name is Walter Kosteckyj. I'm counsel
24 for Zofia Cisowski. You recollect that we met
25 once before, sir?

26 A Yes.

27 Q And that was in early October shortly after you
28 did the autopsy?

29 A Yes.

30 Q And I came and viewed the body with you?

31 A Yes.

32 Q And at that time, you'll recollect that we spoke
33 briefly about where the Taser strikes may have
34 been on Mr. Dziekanski's body.

35 A Yes.

36 Q And you pointed out to me that you thought that
37 Taser shot on the side might have been one of the
38 -- one of the locations where the Taser hit Mr.
39 Dziekanski --

40 A Yes.

41 Q -- as well as in his chest area?

42 A Yes.

43 Q Now, we've heard evidence that there were five
44 deployments of the Taser. And that the total --
45 in a period of 43 seconds -- and where I'm
46 looking, sir, I'll just ask you to take this, is
47 Exhibit number 97 which was a document which was

1 prepared by Constable Beltzer. Constable Beltzer
2 came and gave evidence and his report says that
3 there were five deployments in 43 seconds for a
4 duration of 31 seconds.

5 A Okay.

6 Q You weren't aware of that fact when you did your
7 autopsy?

8 A No, I wasn't.

9 Q Isn't that a significant fact, sir?

10 A It is. It's something that would have been nice
11 to know, but I don't think it would have changed
12 ultimately -- I don't think it would have changed
13 my final cause of death.

14 Q No. But in terms of the importance of the Taser
15 in the context of death, that would have been
16 significant, that evidence.

17 A Yes. To some degree, yes.

18 Q You're familiar with the Taser? You've done some
19 study or reading about the Taser and what it does?

20 A Yes, I'm familiar with the basics of the -- of how
21 a Taser works.

22 Q Okay. The Taser produces -- may cause strong
23 muscle contractions, correct?

24 A Yes.

25 Q The heart is a muscle.

26 A Yes.

27 Q So if it -- if the Taser can cause strong muscle
28 contractions, it can cause the heart to suffer
29 contractions.

30 A From what I understand, the current still first
31 has to reach the heart in order to cause the heart
32 to have an abnormal rhythm or abnormal
33 contraction. From the readings that I've done,
34 the Taser only causes muscle contraction in the --
35 in a sense, the superficial muscles. I'm not
36 familiar enough with the literature to say whether
37 or not there's any research to show that the
38 tasering does in fact affect the heart. All the
39 research that I've read says it doesn't.

40 Q Okay. Exposure to a Taser discharge could impair
41 breathing, correct?

42 A Yes, while the Taser is being discharged.

43 Q And respiration?

44 A Yes.

45 Q And did you know that there is a general warning
46 against repeated, prolonged and continuous
47 exposure to the Taser?

- 1 A I've heard that on the news, yes.
- 2 Q Well, have you -- were you aware that even TASER
3 International warns against that?
- 4 A Not until I've heard it on the news.
- 5 Q Okay. Well, based on the 31 seconds of exposure
6 over a 43-second period, isn't that significant?
- 7 A Yes, in the sense that it could have contributed
8 to the death. But again, that's still part of the
9 restraint process in the sense that I can't say
10 that it was only the Taser that caused his death.
- 11 Q No, but in terms of the component of the Taser --
12 you talked about lethal arrhythmia as a likely
13 cause of death.
- 14 A Yes.
- 15 Q Well, knowing what you know now about the 31-
16 second -- potential 31-second exposure during this
17 46-second period of time, that's very significant,
18 is it not?
- 19 A It's hard to answer that simply because, number
20 one, a number of deaths have occurred in similar
21 situations in which the Taser is not involved.
22 Therefore, in those situations, the other forms of
23 restraint clearly were also significant. Because
24 of that, it's very difficult to say had he not
25 been tasered whether or not he would have lived or
26 died. It's quite possible that even if he had not
27 been tasered and they simply used other forms of
28 restraint, it's quite possible that he still would
29 have died. Because of that, it's very difficult
30 for me to say, with any degree of certainty, that
31 the Taser was the part that pushed him over the
32 edge and led to his death.
- 33 Clearly it's -- again, it probably
34 contributed to his death the same way that the
35 tackling of -- by the police officers played a
36 role in his death.
- 37 Q Well --
- 38 A But I can't say, you know, that one was more
39 important than the other.
- 40 Q Is there a flight or fight reflex, response in
41 human beings?
- 42 A Yes.
- 43 Q And what is that?
- 44 A It is the -- what's known as the adrenergic or the
45 adrenaline that flows through the body whenever
46 the body is in a stressful or dangerous situation.
47 Obviously pain can increase the adrenergic

- 1 response. A number of situations can increase it.
2 That is -- that is believed to be the mechanism of
3 death in these types of restraint deaths.
- 4 Q Well, in this particular case, Mr. Dziekanski
5 would have felt the Taser shot.
- 6 A Yes.
- 7 Q He -- that would have led his heart to beating
8 faster.
- 9 A Yes.
- 10 Q It would have caused him to be in a fright
11 position.
- 12 A Yes.
- 13 Q It would have increased his adrenaline flow.
- 14 A Yes.
- 15 Q It would have made him more susceptible to having
16 heart issues.
- 17 A Yes.
- 18 Q You can understand, sir, that someone actually
19 being shot with a weapon would increase that fight
20 or flight response in a human being.
- 21 A Yes.
- 22 Q And that's a significant factor that's got to be
23 taken into account in how Mr. Dziekanski was
24 acting physiologically in response to a Taser
25 exposure.
- 26 A Yes.
- 27 Q Now, would it have been significant to you to know
28 that people, presumably credible people who knew
29 Mr. Dziekanski, didn't find him to be an alcohol
30 abuser, at least in the last years of his life.
31 Would that have been an important factor for you
32 to consider?
- 33 A Not really, because I'm sure there are a lot of
34 people that are closet alcoholics or people who
35 drink heavily but aren't necessarily considered
36 alcoholics. There are a number of definitions of
37 alcoholism. There's the social and clinical
38 definitions.
- 39 The only thing that I can say is that he had
40 a number of organ changes that are consistent with
41 heavy alcohol use, and that suggests that he did
42 in fact drink alcohol heavily. How he drank it,
43 what time period, I obviously can't say, and it
44 doesn't really affect my diagnosis.
- 45 Q All right. Now, do you agree that a Taser
46 exposure -- when someone is exposed to a Taser,
47 that that's a heavily stressful period?

1 A Yes. I'm sure being tasered is not a pleasant
2 experience. On the other hand, I don't think any
3 restraint process is a pleasant experience. So in
4 terms of is it any better or worse than being
5 pepper-sprayed or being hit by a baton, I can't
6 say. But obviously any of those is a very
7 stressful situation.

8 Q Leading to exertion and exhaustion?

9 A Yes.

10 Q Now, tell me what you do know about prolonged or
11 numerous exposures to the Taser. What advice have
12 you received in that regard?

13 A I haven't received any advice. From what I know
14 about the actions of the Taser, clearly it would
15 cause a lot of pain. Prolonged contraction of the
16 muscle can cause muscle damage and cause release
17 of myoglobin, what's known as rhabdomyolysis. But
18 from what I understand, the cumulative effects of
19 the Taser itself isn't additive in terms of what
20 it -- what kind of effects it has on the heart.

21 Q Okay. Have you --

22 A Sorry, what direct effects on the heart.

23 Q Have you been familiar with the work of Pierre
24 Savard?

25 A No, I'm not.

26 MR. KOSTECKYJ: All right. Now, this might be a good
27 time to break. I want to get into some video.
28 I'll have to get Mr. Lunn here.

29 THE COMMISSIONER: Yes, all right. Let me just say
30 that I'm very interested in separating two
31 concepts that are afoot as a result of these
32 examinations. One is the issue of restraint and
33 its components and its various effects which I
34 think is quite separate from the issue of whether
35 or not any electrical discharge from the Taser
36 interfered with the function of the heart.

37 As I understand it, those are two totally
38 different concepts. I can be corrected, but
39 that's where I'm at, at the moment.

40 All right. We'll adjourn.

41

42 (WITNESS STOOD DOWN)

43

44 (PROCEEDINGS ADJOURNED FOR MORNING RECESS)

45 (PROCEEDINGS RECONVENED)

46

47 THE REGISTRAR: The hearing is now resumed.

Dr. Charles Lee

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

1 DR. CHARLES LEE, a witness,
2 recalled.

3

4 CROSS-EXAMINATION BY MR. KOSTECKYJ, continuing:

5

6 Q Doctor, I'm just going to ask you to have a look
7 at Exhibit 87, I think it is -- Mr. Giles?

8 THE REGISTRAR: That is the sealed documents.

9 MR. KOSTECKYJ:

10 Q I'm looking at photograph 7104. It's towards the
11 back, Doctor. I think it's 7104. You'll see the
12 numbers on the very bottom.

13 A Okay.

14 Q Do you have that, sir?

15 A Yes.

16 Q That is a photograph that Constable or Corporal
17 Hoivik brought to us, and they were photographs
18 that were taken of Mr. Dziekanski. Do you see
19 those marks that are on Mr. Dziekanski's back?

20 A Yes.

21 Q Do you recollect seeing those marks?

22 A No, I do not.

23 Q And is it possible that marks like that, presuming
24 that these were -- I assume that these were taken
25 during the -- at the autopsy, because I'm looking
26 at the next document, 7105. Do you see that?

27 A Yes.

28 Q Can you tell whether these were taken at the
29 autopsy or not?

30 A No, these probably were taken at the scene. For
31 example, there's carpeting underneath him.

32 Q Okay.

33 A And there's no carpeting at the morgue, so...

34 Q Would these kind of marks, which have been
35 described to us -- I'm looking at 7104.

36 A Yes.

37 Q These marks, which have been described to us by
38 other witnesses as being consistent with the Taser
39 being used in the stun mode. Could these types of
40 marks disappear after a period of time on a -- on
41 a body?

42 A It's difficult to say. They may -- they may
43 become hard to see because the increased lividity
44 that forms once a person dies, that can partially
45 obscure it. I don't know if that will actually
46 disappear, though.

47 Q Okay. But you didn't notice those marks when you

1 viewed the body?

2 A No, I did not.

3 Q Now, is there any way of telling -- you indicated
4 that there were some injuries to the ribcage.

5 A Yes.

6 Q And other injuries that dealt with resuscitation
7 efforts.

8 A Yes.

9 Q Is there a way of telling whether those
10 resuscitation efforts occurred after Mr.
11 Dziekanski was already dead?

12 A Well, by definition, resuscitation efforts are
13 done once a person's clinically dead. There's no
14 reason to do chest compressions, for example, if
15 the person still has a pulse. So they would all
16 be done in a person who is not breathing and who
17 is pulseless, and technically they are already
18 dead at that time.

19 Q Okay. I'm going to ask you to view the video, and
20 in particular first of all the initial tasing of
21 Mr. Dziekanski. We're going to start at about
22 3:49.

23 A Okay.

24 Q And I'll just warn you that my recollection is
25 that the tasing occurs at 3:50, which is a
26 second later.

27 A Okay.

28

29 (VIDEO BEING PLAYED)

30 (VIDEO STOPPED)

31

32 MR. KOSTECKYJ: Let's stop there for a second.

33 Q You can see that Mr. Dziekanski is suffering the
34 effects of the Taser?

35 A Yes.

36 Q He appears to be in pain to you?

37 A Yes.

38 Q His body is spasming?

39 A Yes.

40 Q He's holding his chest or his heart?

41 A Yes.

42 Q Now, just from evidence that we've heard before,
43 there's a second tasing that occurs about now.

44 A Yes.

45 Q On the video. I'll just ask you to consider that.

46 A Okay.

47 MR. KOSTECKYJ: Just play it forward. Stop there.

Dr. Charles Lee

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

1 Q Now, the effects that Mr. Dziekanski is feeling
2 there, those are solely from the Taser, as far you
3 can tell?
4 A Yes.
5 Q You wouldn't consider that he's being combative
6 there, would you?
7 A No.
8 MR. HARRIS: I'm going to rise.
9 MR. KOSTECKYJ: Okay.
10 MR. HARRIS: That's an improper question for this
11 witness.
12 THE COMMISSIONER: I think I'm against you on that.
13 Why would you say that?
14 MR. HARRIS: Well, number one, this witness isn't
15 qualified to give an opinion in that regard.
16 That's soliciting an opinion. Secondly, I don't
17 see how it relates to this witness's expertise and
18 for what he's given his opinion here today. How
19 is it relevant whether or not this witness says if
20 Mr. Dziekanski is or is not combative?
21 THE COMMISSIONER: Well, I take it the background of
22 this is to try to separate the two methods of
23 force under the definition of "Restraint". And I
24 think if that's where it's going, I think it's
25 relevant.
26 MR. KOSTECKYJ: Yes.
27 Q Well, at that point, up until then from the time
28 he was tasered till then, you don't see Mr.
29 Dziekanski being combative to the officers?
30 A No.
31 Q He's under the full effects of the Taser, his
32 actions?
33 A Again, I'm not an expert on the Taser. One thing
34 that did strike me as being a bit odd is that all
35 the Taser videos that I've seen of people who are
36 tasered, they drop rather than writhe around.
37 Q Okay.
38 A Other than that, yes, it looks like he is under
39 the -- the effect of a Taser.
40 Q Well you saw him shot.
41 A Yes.
42 Q You saw him fall to the ground.
43 A Yes.
44 Q No one took him down to the ground, he came down
45 as a result of the Taser?
46 A Yes, but he didn't collapse.
47 Q Right.

1 A That's the only difference that I've noticed.

2 Q And now you've seen him laying on the ground.

3 A Yes.

4 Q Holding his chest.

5 A Yes.

6 Q Going into more or less a foetal position,
7 correct?

8 A Yes.

9 Q And circling around as if he's trying to protect
10 himself or feeling pain.

11 A Yes.

12 Q Those are all effects from the Taser, as far as
13 you can tell?

14 A Yes.

15 Q Well, that's a significant event on the physiology
16 of Mr. Dziekanski, is it not?

17 A Yes.

18 Q And his heart would be racing right now?

19 A Yes.

20 Q He would be having difficulty breathing?

21 A Well, he's screaming, so that would mean that he
22 would still be breathing.

23 Q But he's breathing very heavily? He would be
24 breathing heavily now, would he not?

25 A Most likely.

26 Q So his respiratory system would be much advanced,
27 it would be faster, quite -- quite fast?

28 A Yes.

29 Q Would he likely be experiencing that fight or
30 flight feeling now, having felt the -- the shot?

31 A Yes.

32 Q And that would enhance the panic that's going on
33 in his mind and body?

34 A Yes.

35 Q He would be experiencing the thing where he is
36 trying to protect himself and fight for his life?

37 A Yes.

38 MR. KOSTECKYJ: Proceed on with the tape.

39 When we get to that stage -- where is it
40 where he puts his --

41 MR. LUNN: (Indiscernible - way from microphone).

42 MR. KOSTECKYJ: Okay. I'll get you to stop when you
43 get there.

44

45 (VIDEO BEING PLAYED

46

47

Dr. Charles Lee

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

1 MR. KOSTECKYJ: Stop there.
2 Q Now, Doctor, do you see this police officer who
3 has his knee on Mr. Dziekanski's -- in the
4 vicinity of Mr. Dziekanski's neck?
5 A Yes.
6 Q Do you see that knee?
7 A Yes.
8 Q I want you to keep watching that knee to the
9 extent that you can, the weight that's being
10 placed upon Mr. Dziekanski's neck area.
11 A Okay.
12 MR. KOSTECKYJ: Continue. Stop it there.
13 Q Now, I know it's difficult to see, but from what
14 you can tell, during this period of time the knee
15 appears to still remain in the same place. I know
16 that your view was somewhat blocked.
17 A I really can't say.
18 Q Okay. Let's --
19 A I mean, in that picture it actually looks like
20 it's almost -- it's on the ground.
21 MR. KOSTECKYJ: Okay. Let's go on.
22 Q Do you see -- stop it there. Do you see that the
23 officer's got one knee on Mr. Dziekanski's neck
24 and the other leg is -- does it appear that the
25 right leg is towards his neck?
26 A I really can't say. It looks like the legs are
27 sort of straddling both sides of the -- of the
28 head and neck area.
29 Q Okay.
30 A One is obviously on his back and upper arm.
31 MR. KOSTECKYJ: Just go a little further, please, Mr.
32 Lunn.
33 Q Do you see his knee now?
34 MR. KOSTECKYJ: Stop it there.
35 Q Can you see the policeman's knee?
36 A Yes.
37 Q It's on his neck. His right knee appears to be on
38 his neck, does it not, sir?
39 A It's hard to say in that photo. It could be, but
40 I -- I really can't say for sure where it is.
41 MR. KOSTECKYJ: Okay. Well, let's keep playing it.
42 Stop there.
43 Q Do you see the heel of his shoe now, sir?
44 MR. KOSTECKYJ: If I could just get the pointer. Can
45 you -- is it possible to brighten the picture, Mr.
46 Lunn? Is it easier if you take the sound off,
47 or --

Dr. Charles Lee

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

1 MR. LUNN: (Indiscernible - away from microphone).
2 MR. KOSTECKYJ: All right.
3 Q This area in here, can you see the police
4 officer's heel in that area?
5 A Yes, I think that's his heel.
6 Q And does it appear that his -- his knee is Mr.
7 Dziekanski's neck?
8 A It does look like it.
9 MR. KOSTECKYJ: Keep playing the video.
10 Q Does that help you as we're going along?
11 A Unfortunately it just --
12 MR. KOSTECKYJ: Stop it there.
13 Q Do you see there that that appears to be the heel
14 of the police officer?
15 A It does look like it.
16 Q And that this is his leg -- this is his knee going
17 across Mr. Dziekanski's neck?
18 A Yes.
19 Q You see that?
20 A Yes.
21 Q And there has been -- that same position has been
22 maintained for some period of time.
23 A Yes, for a few seconds.
24 MR. KOSTECKYJ: Let's back it up actually, so we can
25 see how many seconds. Stop it there.
26 Q Do you see there's -- there's the yellow patch on
27 the knee and then it's obscured by Mr.
28 Dziekanski's head, and there is the heel?
29 A Yes.
30 Q So it's clear to you now, sir, that the police
31 officer had his knee on Mr. Dziekanski's neck?
32 A Yes.
33 MR. KOSTECKYJ: All right. Let's go back. Stop it
34 there.
35 Q You can see clearly now, can you not, sir, that
36 the knee is right on Mr. Dziekanski's neck?
37 A Yes.
38 Q As we're backing it up?
39 A Yes.
40 MR. KOSTECKYJ: Let's go back further. Stop there.
41 Q And you could see just before that, that both legs
42 were on Mr. -- Mr. -- all of the police officer's
43 weight was on Mr. Dziekanski's shoulder and his
44 neck.
45 A Yes.
46 Q Right?
47 A Yes.

Dr. Charles Lee

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

1 MR. KOSTECKYJ: All right. Let's go back again.
2 Okay, start there.
3 Q You can see his knee? You can see where his knee
4 is there roughly. You can see his heel.
5 A Yes.
6 Q You can see where his knee appears to be.
7 A Yes.
8 Q On Mr. Dziekanski's neck?
9 A Yes.
10 MR. KOSTECKYJ: All right. Let's go back a little
11 further. Stop there.
12 Q It's hard to see past this, but it appears that
13 just before that security guard walked in front,
14 we could see what position the police officer was
15 in, correct?
16 A Yes.
17 MR. KOSTECKYJ: Okay. Let's take the time and play it
18 forward.
19 MR. LUNN: It's 4:59.
20 MR. KOSTECKYJ:
21 Q Do you see him pushing his weight onto Mr.
22 Dziekanski there?
23 A Yes.
24 Q Both legs?
25 A At least one.
26 Q And at times he puts his other leg on Mr.
27 Dziekanski as well?
28 A Yes.
29 Q There's no doubt that his neck is being restrained
30 there?
31 A Yeah, that's correct.
32 Q It's still there? The police officer's leg hasn't
33 moved in any way because you could see his other
34 leg there, it's in the same position?
35 A Yes.
36 MR. KOSTECKYJ: And now he's moved. What's the time?
37 MR. LUNN: The time is 5:48.
38 MR. KOSTECKYJ: Sorry, and what was the first time,
39 Mr. --
40 MR. LUNN: The first time was 4:59, it's now 5:48.
41 MR. KOSTECKYJ:
42 Q So for roughly a minute --
43 A Yes.
44 Q You saw Mr. Dziekanski's neck under that police
45 officer's knee.
46 A Yes.
47 Q That would have an effect on Mr. Dziekanski's

1 ability to breathe?
2 A It's hard to say, because it depends on what his
3 -- what position his face was actually in.
4 Pressing on the back of the neck itself won't
5 affect respiration. It would only affect
6 respiration if the person was, for example, face
7 down in a soft -- soft surface, such as a mattress
8 that would occlude the -- the nose and mouth. By
9 itself, pressure on the back of the neck would not
10 stop the person's ability to breathe.
11 Q We don't know if it's on the -- which part of his
12 neck, whether his face is down or to the side, do
13 we?
14 A No.
15 Q And his face may very well be to the side through
16 that period of time?
17 A Because I don't know exactly what position his
18 face was in.
19 Q Okay. Well let's do this. We do know that before
20 that happened, he was in the fight or flight --
21 A Yes.
22 Q -- response.
23 A Yes.
24 Q After being shot by the Taser.
25 A Yes.
26 Q His respiration was quick, his breathing was
27 laboured, he was fighting for his life.
28 A Yes.
29 Q Now -- now he's laying on the ground with
30 somebody's knee on his neck for a period of a
31 minute while he's going through that.
32 A Yes.
33 Q That would heighten all of the other responses
34 that were going on in his body. He'd continue to
35 be breathing hard?
36 A Yes, that -- that action, the action of being
37 physically restrained would increase the fight or
38 flight response.
39 Q But especially in that particular position because
40 he wouldn't have -- it would affect his ability to
41 breathe easily, it would -- he'd feel frightened?
42 A Yes.
43 Q His heart would be pounding much harder.
44 A Yes.
45 Q Sir, after viewing those two clips, isn't the most
46 significant aspect in the death of Mr. Dziekanski
47 related to the tasing and to that event, the

- 1 neck, the knee on Mr. Dziekanski's neck?
- 2 A Isn't that what I said?
- 3 Q That is the most significant event, is it?
- 4 A Well, that's -- that's why I put that in Part 1 of
5 my cause of death, that he died following
6 restraint.
- 7 Q But the specific aspect of the restraint, do you
8 consider the Taser to be part of the restraint?
- 9 A Yes.
- 10 Q You don't consider the tasing to be a separate
11 incident from the actual restraining?
- 12 A No. I consider a Taser to be another form of
13 physical restraint.
- 14 Q Now, what's the significance of the fact that
15 shortly after Mr. Dziekanski's handcuffed here,
16 the reports are that he started to make a snoring
17 noise.
- 18 A That's probably when he started to become
19 unconscious and that's probably about the time
20 when he stopped breathing and his heart stopped.
- 21 Q And combined with that, he started to turn blue.
22 That's the evidence we have.
- 23 A Yes.
- 24 Q That he made these snoring sounds. Would that be
25 -- I think it's agonal breathing?
- 26 A Yes.
- 27 Q What is agonal breathing?
- 28 A It's chest movements, breathing movements, at
29 around the time of death. A person who is on the
30 verge of dying will often continue to make
31 breathing motions, even though their heart has
32 stopped.
- 33 Q And so with the -- it's been described to us
34 before as the last breaths of life.
- 35 A Yes.
- 36 Q That's an accurate description?
- 37 A Yes.
- 38 Q Okay. So that snoring sound, if witnesses told us
39 that, that would be that agonal breathing in all
40 likelihood?
- 41 A Yes.
- 42 Q And then the colour, turning blue. That's been
43 reported to us by both police officers and other
44 independent witnesses who witnessed this. Would
45 that be an indication that he was in all
46 likelihood either dying within seconds, or that he
47 was already dead?

Charles Lee

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

Cross-exam by Ms. Roberts (for Government of Canada)

1 A Yes, turning blue would probably indicate that he
2 wasn't getting sufficient oxygen, and essentially
3 he was at that point in the dying process.

4 MR. KOSTECKYJ: All right. Those are my questions,
5 thank you, Doctor.

6 MS. ROBERTS: For the record, Helen Roberts for the
7 Government of Canada.

8

9 CROSS-EXAMINATION BY MS. ROBERTS ON BEHALF OF THE
10 GOVERNMENT OF CANADA:

11

12 Q Dr. Lee, just dealing with two matters first
13 raised by Mr. Kosteckyj. When Mr. Kosteckyj asked
14 you about the effect of the tasing and gave you
15 some time periods to consider.

16 A Yes.

17 Q I presume your answer was on the -- you were
18 assuming that the Taser was having an effect on
19 Mr. Dziekanski for those entire time periods?

20 A Yes.

21 Q You wouldn't know this, but we've have evidence
22 that's probably not the case.

23 And with regard to the snoring sound that Mr.
24 Kosteckyj indicated was heard, would your answer
25 about agonal breathing be different if you knew
26 that people had monitored Mr. Dziekanski after
27 that sound was heard and he was found to have a
28 pulse and his chest was seen to rise and fall?

29 A Well, the chest movements are irrelevant because,
30 like I said, the chest movements can occur at the
31 time of or around the time of death, the agonal
32 breathing involves chest movements anyways. As
33 far as a pulse, again assuming that they in fact
34 did feel a pulse, that does indicate that the
35 heart was still beating and that it still had a --
36 what's known as a pumping rhythm. In other words,
37 the heart was still able to beat and pump blood.

38 Q All right. And how long does agonal breathing
39 typically last?

40 A It's hard to say. On the very few videos that
41 people have taken of their own suicides, for
42 example, it's been shown to occur up to a few
43 minutes after they're probably dead. So it can --
44 it can be fairly prolonged.

45 Q All right. I believe there's evidence in this
46 case that from the time -- from the time that the
47 police radioed for an ambulance until the

1 ambulance or firefighters arrived was a period of
2 somewhere in the range of six to nine minutes.
3 Can agonal breathing last that long?
4 A I can't say no, but it's unlikely.
5 Q All right.
6 A It probably would last a few minutes, but I don't
7 think it would last as long as six to nine
8 minutes.
9 Q So if there was a pulse and the chest was seen to
10 rise and fall, say five minutes after that snoring
11 noise, that would probably indicate it wasn't
12 agonal breathing?
13 A Yes, that it probably may not have been agonal
14 breathing.
15 Q All right. Now, I wanted to go through my
16 questions in somewhat chronological order. You've
17 given evidence of indicators of Mr. Dziekanski's
18 prior health and you've said there were three
19 signs which, taken together, led you to the
20 conclusion that Mr. Dziekanski was a chronic
21 alcohol user?
22 A Yes.
23 Q All right. And as I understood it, that was the
24 moderate to severe atrophy of the cerebellum?
25 A Yes.
26 Q And the severe fatty liver?
27 A Yes.
28 Q And the dilated ventricles of the heart or
29 cardiomyopathy?
30 A Yes.
31 Q And I wanted to ask you a little bit about
32 cardiomyopathy. The -- I'm given to understand
33 from my internet reading that cardiomyopathy is a
34 serious disease in which the heart muscle becomes
35 inflamed and it doesn't work as well as it should.
36 Would that be a fair definition?
37 A Cardiomyopathy refers to diseases of the heart
38 muscle that are not associated with diseases of
39 the coronary arteries or of the valves, and there
40 are a number of forms of cardiomyopathy. The
41 dilated heart, the dilated cardiomyopathy has a
42 number of potential causes, and depending on the
43 severity, it -- it can be associated with sudden
44 death. Although in this case I don't think it was
45 severe enough to actually cause sudden death on
46 its own. It again may have increased his
47 susceptibility to other stressors, but by itself I

- 1 don't think would have been fatal on its own.
- 2 Q All right. If dilated cardiomyopathy is diagnosed
3 in a living person, a patient, would it be correct
4 that they're normally advised to stop smoking,
5 reduce their alcohol consumption and take other
6 steps that lead to a healthier lifestyle?
- 7 A Yes, they're advised that. Whether or not they
8 follow through, obviously it's up to them. But
9 that's some of the things that they're advised to
10 do.
- 11 Q All right. So smoking and alcohol are not good
12 for that condition?
- 13 A Yes, that's correct.
- 14 Q All right. And am I correct in my reading that
15 many patients are asymptomatic. They're not
16 aware, they don't have any signs of this
17 cardiomyopathy, the dilated cardiomyopathy?
- 18 A When it's severe they'd start to become
19 symptomatic. A certain proportion of them will
20 have no symptoms until they die suddenly. Others,
21 it may be picked up on other testing, for example,
22 if they go to the hospital for another reason.
23 But if it's severe, they will start to get
24 symptomatic.
- 25 Q All right. Is one of the symptoms high blood
26 pressure?
- 27 A Well, High blood pressure is one of the risk
28 factors. So it's difficult to say. Usually the
29 high blood pressure comes first.
- 30 Q All right. And if somebody had a severe case of
31 dilated cardiomyopathy, they are at risk for
32 sudden death?
- 33 A Yes.
- 34 Q All right. So that any stress added on to that
35 would increase that risk?
- 36 A Yes.
- 37 Q Would that be fair to say?
- 38 A Yes.
- 39 Q All right. So that's his prior health issue
40 that's relevant to your autopsy and your findings.
41 I also noticed in your report that there were
42 minimal contents in the stomach and digestive
43 system. Is that common or uncommon and what, if
44 anything, does that indicate to you?
- 45 A Well, it indicates that he had no significant
46 solid food for quite some time, probably a day or
47 so.

- 1 Q All right. And I also noticed there was -- you
2 found no urine in the bladder. Is that common or
3 uncommon and what does that indicate?
- 4 A It's -- there's really no significance to that.
5 He may have, you know, gone to the bathroom prior
6 -- prior to all this happening, for example, or he
7 may have voided after he died. That's also fairly
8 common. But normally in most autopsies there is
9 still some urine. But again it's -- there's
10 really no significance to that finding.
- 11 Q All right. If somebody hasn't eaten or drunk any
12 fluids for awhile, can that also add to the stress
13 on their body?
- 14 A It can.
- 15 Q All right. Similarly if somebody hasn't slept for
16 a long period, or has slept poorly for -- for
17 days, can that also add stress to their body?
- 18 A Yes.
- 19 Q And also if they were a regular cigarette smoker
20 and had given it up within the preceding few days,
21 would that add stress to their body?
- 22 A It probably could, yes.
- 23 Q And again if, as you've suggested from your
24 autopsy findings, Mr. Dziekanski was a chronic
25 alcohol user, if not drinking -- would not
26 drinking for the length of period of his travel,
27 say a day or two, would that also add to stress on
28 his body?
- 29 A It could.
- 30 Q All right. Turning then to the physical injuries,
31 I take it you found no injuries to Mr.
32 Dziekanski's neck?
- 33 A That's correct.
- 34 Q All right. And you found no evidence of asphyxia
35 or breathing difficulties on autopsy?
- 36 A That's correct.
- 37 Q You found some injuries that you described as
38 being consistent with a struggle, and I think some
39 of those were abrasions to the wrists?
- 40 A Yes, he had bruising and abrasions on the wrist.
- 41 Q Right. Would that be consistent with handcuffs?
- 42 A Yes, it would.
- 43 Q Have you seen that before?
- 44 A Yes, it would.
- 45 Q And was the bruising superficial, or did it go
46 down subcutaneously into his skin?
- 47 A The bruising did go down into the -- the

1 subcutaneous tissue of the wrists.

2 Q All right. Does that indicate a struggle, a
3 physical struggle?

4 A It indicates that he was putting pressure against
5 the -- the handcuffs, consistent with continuing
6 to struggle after he was handcuffed.

7 Q And Mr. Kosteckyj asked you about the marks on Mr.
8 Dziekanski's back that apparently were no longer
9 visible at the time of autopsy.

10 A Yes.

11 Q Does the fact that they have -- they're no longer
12 visible, two days after the death, does that
13 indicate something about their severity?

14 A No.

15 Q All right. That's not potentially an indicator
16 that they were not terribly severe marks to begin
17 with?

18 A The marks of the Taser by itself, they are just
19 marks. They don't indicate the severity of
20 anything. Plus the fact that because they were on
21 the back and because of the lividity that forms,
22 that may have reduced their visibility so that I
23 didn't notice them. But it really is irrelevant
24 in terms of the severity of -- because the
25 injuries themselves are irrelevant. It's the
26 electrical action of the Taser that's more
27 important than the actual piercing of the -- of
28 the -- or the damage of the skin caused by the --
29 by the barbs.

30 Q I understand. We've had some evidence that marks
31 in a pattern as was seen in that photograph can be
32 indicative of the Taser skipping, either because
33 the Taser is moving or the person is moving, which
34 would indicate they weren't there on the body as
35 long as say, for instance, the probe may have been
36 on the front. That's why I was asking if it
37 indicated anything.

38 THE COMMISSIONER: I don't know that anything has been
39 indicated to the doctor as to probe mode as
40 opposed to stun mode and so forth. Your question
41 intersperses those things. There's quite a
42 difference as we all know, but I don't know
43 whether the doctor knows about this.

44 MS. ROBERTS: All right.

45 Q According to your reading or perhaps your
46 experience, does the Taser probe leave a very
47 small burn mark where it attaches to the skin?

- 1 A It can. I guess it -- there are a number of
2 factors that may come into play in terms of what
3 the probe appears to look like. Again, I don't
4 think there's a lot of information about what the
5 significance of the appearance of the probe marks
6 actually are, other than to indicate that the
7 probe made contact with the skin. I think that's
8 the only thing you can really say about those
9 marks, is that they simply indicate that the Taser
10 made contact -- close enough contact with the skin
11 to leave marks.
- 12 Q All right. And from your reading or your
13 experience, when the Taser is held right against
14 the skin, does it also make a similar small burn
15 mark from time to time?
- 16 A I don't actually have experience with the Taser in
17 the touch mode where they're placed in contact
18 with the skin so I really can't say.
- 19 Q All right. Thank you. Now, I think you've
20 testified that you - perhaps not prior to the
21 autopsy - but subsequently have seen the Pritchard
22 video, all of it.
- 23 A Yes.
- 24 Q And so you've seen the part of the video that
25 precedes the arrival of the police, have you?
- 26 A Yes.
- 27 Q And have you noticed in that video Mr.
28 Dziekanski's behaviour?
- 29 A Yes.
- 30 Q All right. And he appears to be agitated and
31 sweating?
- 32 A Yes.
- 33 Q So would it be fair to say that he was already
34 under some stress prior to the arrival of the
35 police?
- 36 A Yes.
- 37 Q And given your earlier answers, would it be fair
38 to assume that may be related to not eating, not
39 drinking, not smoking, not drinking alcohol,
40 things like that may be part of it?
- 41 A I think they all contributed, but, you know, given
42 what I know now of the situation, I think anyone
43 under those similar situation would be under
44 considerable stress and agitation. So, yes, I
45 think the other factors all contributed, but I
46 think they sort of pale in comparison to the fact
47 that he was, you know, there alone for several

1 hours. I think that alone would be the -- would
2 cause the bulk of the stress.

3 Q All right. So Mr. Dziekanski was a man under
4 considerable stress for a number of reasons,
5 including his prolonged stay at the airport prior
6 to the arrival of the police?

7 A Yes.

8 Q And I think your evidence was that the
9 cardiomyopathy, in and of itself, may not have
10 been enough to cause death, but once you add
11 stress onto that, that could cause death?

12 A Yes.

13 Q And the police, of course, would not have known
14 from looking at Mr. Dziekanski that he had any
15 heart issue.

16 A That's correct.

17 Q And you've described the death as sudden death.
18 It is a sudden process?

19 A Yes.

20 Q And does this kind of death occur in scenarios
21 where the police are not present?

22 A Yes. In some cases, oftentimes in similar
23 situations where there is a violent struggle.
24 Bystanders are also involved sometimes in trying
25 to restrain the individual and the individual ends
26 up dying suddenly after they're restrained.
27 Usually it's the police that are involved simply
28 because they're usually called out to deal with
29 these individuals.

30 But occasionally, for example, I've had a
31 couple of cases where an individual was restrained
32 by bystanders, and they ended up dying before the
33 police even got there. So it can affect -- can
34 involve anyone outside of the police as well.

35 Q And does it sometimes occur in hospital settings
36 where patients have to be physically restrained in
37 order to examine or treat them?

38 A Yes, it can occasionally in hospital as well.

39 Q So notwithstanding that the medical professionals
40 know that this is dangerous, they still need to go
41 ahead and restrain the patients.

42 A Yes. It's kind of a *Catch-22*. In order to treat
43 a person, they have to be under control. It's
44 very difficult to assess and treat an individual
45 who is combative, yet the process of restraint may
46 end up leading to their death. So it is sort of a
47 difficult situation to be in.

1 Q All right. You've given evidence that Mr.
2 Dziekanski was clearly agitated, but you
3 questioned whether or not he was delirious as I
4 understood it.

5 A Yes.

6 Q Right. Would you defer to a psychiatrist as to
7 whether he was suffering the effects of agitated
8 or excited delirium? Would that be more within
9 their field?

10 A Well, the problem is I don't think anyone, just by
11 looking at the video, can really say for sure.
12 First of all, delirium is difficult to diagnose at
13 the best of times and ultimately it's -- just by
14 looking at the video, it's just going to be one
15 opinion versus another. All I can say is that
16 nothing in the autopsy showed a reason for him to
17 be delirious. There was no significant medical
18 condition, no drugs or alcohol to explain why he
19 would be in delirium.

20 Plus, when I saw the video, he really didn't
21 look delirious. One of the -- one of the
22 hallmarks of delirium is an altered mental status,
23 and he appeared to be alert, he appeared to
24 recognize the police, he appeared to be following
25 at least some of the commands of the police.
26 Because of that -- because of those findings, I --
27 it doesn't look like he's delirious. It looks
28 like he is able to interact with others.

29 Obviously there's a -- well, a language
30 barrier, but it does look like -- that he is alert
31 and able to respond appropriately to others.

32 Q All right. Is delirium normally something
33 diagnosed by a psychiatrist or a pathologist?

34 A It's diagnosed by a clinician in the sense that
35 there are usually signs and symptoms of delirium.

36 Q We have the benefit of another opinion from Dr. Di
37 Maio who I believe is another forensic
38 psychologist -- or, sorry, forensic pathologist.

39 A Yes.

40 Q Are you familiar with his work at all?

41 A Yes, I am.

42 Q And as I understand it, he says that the cause of
43 death is cardiac arrhythmia, and I take it you're
44 in agreement with that. You've described it as
45 lethal arrhythmia.

46 A Yes. That's not precisely a cause of death, but
47 -- it's more of a description of -- more a

1 mechanism of death. But, yes, I think that's the
2 terminal event that led to his death.

3 Q And he has a number of factors that he says it's
4 secondary to, and perhaps I can run through them
5 and you can tell me if you agree or disagree.

6 A Yes.

7 Q One is chronic alcohol abuse?

8 A Yes.

9 Q Alcohol withdrawal?

10 A Possibly.

11 Q The stress from the emotional and physical results
12 of withdrawal?

13 A Possibly, yes.

14 Q The struggle with the police?

15 A Yes.

16 Q And the alcoholic cardiomyopathy.

17 A Yes.

18 Q So essentially you're more or less on the same
19 page with him?

20 A Yes, in the sense that it was a combination of
21 factors that just happened to occur all at one
22 time in this person that ultimately led to his
23 death.

24 Q If Mr. Dziekanski had not had the cardiomyopathy,
25 and if he had not gone through the stress of
26 travel, not sleeping, not drinking alcohol, not
27 smoking cigarettes, being at the airport a long
28 time, not getting into a verbal argument with one
29 of the eyewitnesses, is there any reason to think
30 that he would have died simply as a result of the
31 restraint that was used in this particular case?

32 A It's difficult to say for certain. There have
33 been cases of individuals with no apparent disease
34 who are restrained who end up dying, and who have
35 no drugs on board. The problem here is that these
36 deaths are rare. They do occur, but they are
37 rare. It's difficult to really predict beforehand
38 which individuals are likely to die and which
39 aren't.

40 Obviously the risk factors increase the
41 likelihood of a bad outcome, but even in the
42 absence of those, it still, I guess, would still
43 be possible for him to die as a result of being
44 restrained. And also, the thing to keep in mind
45 is usually there is a reason why a person is being
46 restrained in the first place. That has to be
47 taken into account.

Charles Lee

Cross-exam by Ms. Roberts (for Government of Canada)

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

1 So I guess the short answer is, yes, it's
2 still possible, although unlikely, that even a
3 person without these other risk factors may still
4 die if they're restrained.

5 Q All right. So the vast majority of these sudden
6 death cases, the person has an underlying medical
7 condition or has drugs in their system?

8 A Yes. The majority of cases are associated with
9 drugs, mainly cocaine and other stimulants. Other
10 -- other risk factors include psychiatric problems
11 and some of them, for example, have underlying
12 natural disease as well that may have contributed.
13 But the majority of cases involved people who are
14 intoxicated on drugs.

15 MS. ROBERTS: Thank you. Those are all my questions.

16 MR. HIRA: Mr. Neave is going to examine before we
17 examine (indiscernible - not using microphone).

18 MR. NEAVE: Thank you, Mr. Commissioner. I'm mindful
19 of the time. I will be going beyond the break. I
20 don't -- I'm not sure if it's more convenient for
21 you if we -- if I commence afresh, or start now.
22 I'm in your hands.

23 THE COMMISSIONER: I think you should start now.

24
25 CROSS-EXAMINATION BY MR. NEAVE ON BEHALF OF TASER
26 INTERNATIONAL:

27
28 Q Dr. Lee, my name is Davie Neave. I'm counsel for
29 TASER International. Just for the purpose of
30 clarification for Mr. Commissioner, you and I have
31 met, correct?

32 A Yes.

33 Q And we've gone through your final report that's in
34 the exhibits today, correct?

35 A Yes.

36 Q And that's Exhibit 76, the document that I'm
37 referring to. Have you got that before you?

38 A Yes.

39 THE COMMISSIONER: I think you're going to have to
40 speak up a bit.

41 MR. NEAVE: Thank you, Mr. Commissioner, I will.

42 Q Now, turning, Doctor, to your final report, and
43 I'm looking at Exhibit 76, in your report of the
44 16th of October of 2007, you reached the
45 conclusion that the principal cause of death was
46 "Sudden Death During Restraint due to or as a
47 consequence of" chronic alcoholism; that's

- 1 correct, isn't it?
- 2 A The chronic alcoholism was a contributory factor
- 3 that could have played a role in his death.
- 4 Q And that's your opinion today; is that fair?
- 5 A Yes.
- 6 Q Now, I'm going to ask you a few questions about
- 7 sudden death during restraint before I move back
- 8 into your report. Would you agree with me,
- 9 Doctor, that that phenomenon is well documented in
- 10 the medical literature?
- 11 A Yes.
- 12 Q And indeed it's been known to be a principal cause
- 13 of death since somewhere in the mid-1800s; is that
- 14 correct?
- 15 A Yes.
- 16 Q And there are a number of indicia associated with
- 17 that principal cause of death. For example, it
- 18 most frequently occurs in males, correct?
- 19 A Yes.
- 20 Q It most frequently occurs in individuals between
- 21 the ages of 20 and 50 years?
- 22 A Yes.
- 23 Q It is exemplified by a collapse shortly after
- 24 restraint?
- 25 A Yes.
- 26 Q It often involves law enforcement personnel?
- 27 A Yes.
- 28 Q But not necessarily as your evidence to my
- 29 colleague previously?
- 30 A Yes, that's correct.
- 31 Q It often involves an agitated behaviour?
- 32 A Yes.
- 33 Q And that agitated behaviour is often exemplified
- 34 by sweating, correct?
- 35 A Yes.
- 36 Q Wide eyes is another common feature that's
- 37 indicated in the literature?
- 38 A Yes, I believe so.
- 39 Q Pacing back and forth? Purposeless behaviour,
- 40 let's put it in those terms.
- 41 A I would say irrational behaviour, yes.
- 42 Q Barricading oneself?
- 43 A Yes, that's possible.
- 44 Q And most frequently, the first recorded cardiac
- 45 rhythm is either asystole or pulseless electrical
- 46 activity, PEA.
- 47 A Yes, I believe so.

1 Q And typically, just as in this case, the autopsy
2 report and examination shows minimal findings.

3 A Yes, that's correct.

4 Q Now, sudden death during restraint is a phrase
5 that's descriptive, in a sense, in that it
6 captures an entire constellation of underlying
7 features.

8 A Yes. It's -- it's trying to answer -- or put a
9 name to a phenomenon that is difficult to describe
10 and explain where this constellation of findings
11 and the typical scenarios ultimately lead to a
12 person's death with no obvious anatomic cause of
13 death, and then the question simply becomes: What
14 do you call it?

15 It's kind of like SIDS, for example,
16 unexplained deaths in an infant. We don't really
17 know what causes it, but we just give it a name,
18 "Sudden Infant Death Syndrome".

19 In this particular case, we sort of -- a lot
20 of forensic pathologists have given the "Excited
21 Delirium Syndrome" to try and encapsulate the
22 typical scenarios and autopsy findings and
23 toxicological findings that seem to occur in these
24 cases. It's simply a way of, I guess,
25 categorizing the deaths in order to be able to
26 identify them for further research later on.

27 Q And it does that by, as I say, encapsulating this
28 constellation of factors underneath that -- that
29 -- in totality, are commonly now referred to as
30 "Sudden Death During Restraint".

31 A Yes.

32 Q And you're familiar with Dr. Di Maio?

33 A Yes.

34 Q I understand that he describes this phenomenon as
35 a "Sudden Cardiac Death Following a Violent
36 Struggle" with or without alcohol intoxication or
37 drug abuse.

38 A Yes.

39 Q By the way, can you -- can you inform the
40 Commissioner who Dr. Di Maio is?

41 A Dr. Di Maio is, I believe, currently retired, but
42 he is a forensic pathologist who has written a
43 number of books and a number of magazines --
44 magazine articles. In fact, he co-authored a book
45 on the Excited Delirium Syndrome, and I believe
46 he's currently one of the editors of one of the
47 forensic pathology journals, *The American Journal*

- 1 *of Forensic Medicine and Pathology*, commonly
2 referred to as the "Orange Journal".
- 3 Q And the *Journal of Forensic Medicine* or the orange
4 journal that we're speaking about, that's the
5 forensic pathology's guidebook. Is that a fair
6 assumption?
- 7 A It's one of the two most, I guess, widely read
8 forensic journals.
- 9 Q Thank you. Now, Doctor, would you agree that
10 "Sudden Death During Restraint" is documented to
11 have occurred in a number of different types of
12 restraint.
- 13 A Yes. It's been associated with pretty much every
14 form of physical restraint that's been used.
- 15 Q And that would include, for example, the process
16 of hog-tying?
- 17 A Yes.
- 18 Q It would include pepper spray?
- 19 A Yes.
- 20 Q It would include the use of defensive batons?
- 21 A Yes.
- 22 Q It would include situations where there is no
23 other application of force but for being tackled
24 and subdued by police officers?
- 25 A Yes.
- 26 Q And in this case, in Exhibit 76, did you find any
27 specific anatomic or toxicological cause of death?
- 28 A No, I did not.
- 29 Q And that's consistent with the medical literature
30 documenting these forms of death?
- 31 A Yes.
- 32 Q And indeed, Doctor, if I can have you turn up
33 Exhibit 76 and to go to page 6, please. I'm
34 looking at paragraph 2 on that document starting
35 with, "This case differs...".
- 36 A Yes.
- 37 Q Can you just read that to yourself? I'm just
38 going to ask a couple of questions with respect to
39 that.
- 40 A Sure. Okay.
- 41 Q Thank you, Doctor. So, in that paragraph, you
42 specifically indicate that the toxicological
43 examination shows no drugs present, correct?
- 44 A Yes.
- 45 Q And you specifically note that there's an absence
46 of a definite atomic (sic) cause of death,
47 correct?

Charles Lee

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

1 A Yes.

2 Q And at the bottom of the paragraph, do you believe
3 you properly link the negative autopsy results -
4 that's no drugs or anatomical cause - to the
5 circumstances of death, and then drew a conclusion
6 for what you regarded to be the best description
7 of that cause of death.

8 A Yes.

9 MR. NEAVE: Mr. Commissioner, I'm about to move into a
10 new area.

11 THE COMMISSIONER: Yes, we'll adjourn for lunch.

12 MR. NEAVE: Thank you.

13 THE REGISTRAR: The hearing is now resumed until 2:00
14 p.m.

15

16 (PROCEEDINGS ADJOURNED FOR NOON RECESS)

17 (PROCEEDINGS RECONVENED)

18

19 THE REGISTRAR: The hearing is now resumed.

20 THE COMMISSIONER: Yes, Mr. Neave.

21 MR. NEAVE: Thank you, Mr. Commissioner.

22 THE REGISTRAR: Microphones.

23 MR. NEAVE: Thank you, Mr. Commissioner.

24

25 CHARLES LEE, a witness,
26 recalled.

27

28 CROSS-EXAMINATION BY MR. NEAVE ON BEHALF OF TASER
29 INTERNATIONAL, continuing:

30

31 Q Dr. Lee, I just want to ensure, from Commissioner
32 Braidwood's comments this morning, that you're
33 aware of the distinction between probe mode and
34 push-stun mode with the Taser X26 device?

35 A Yes.

36 Q Now -- and I'm not sure if you're aware, but let
37 me provide you with my understanding. Probe mode
38 involves the discharge of two tethered probes and
39 when they attach to the subject, the current then
40 flows in an electrical circuit.

41 A Yes.

42 Q Do you understand that?

43 A Yes.

44 Q In push-stun mode, the cartridge is removed from
45 the front of the device which exposed two metal
46 electrodes, in essence, that are about two-and-a-
47 half centimetres apart and the current flows

1 between the two of those upon application. Do you
2 understand that?

3 A Yes.

4 Q And you are aware, or were made aware sometime
5 between the date of your report on the 16th of
6 October 2007 and today that Mr. Dziekanski was
7 exposed to two Taser deployments in probe mode,
8 and three in push-stun mode; is that correct?

9 A Yes.

10 Q And your -- as I said, your opinion today is the
11 same as it was when you prepared the report in
12 October of 2007, correct?

13 A Yes, it is.

14 Q Thank you. Now, I just want to move quickly,
15 because it's been covered fairly comprehensively,
16 to this is issue of chronic alcoholism. I'm going
17 to ask you a few questions on that topic.

18 A Okay.

19 Q Am I correct that you identified chronic
20 alcoholism in your autopsy findings because you
21 saw physiological changes in -- in Mr.
22 Dziekanski's body consistent with chronic
23 alcoholism.

24 A I saw physical changes.

25 Q Yes.

26 A Physiologic is basically processes and you can't
27 actually see the physiologic process, but I saw
28 physical changes.

29 Q And those changes are both gross anatomical
30 changes?

31 A Yes.

32 Q Rather than -- as distinct from microscopic, and
33 microscopic; is that correct.

34 A Yes.

35 Q The -- and my friends have dealt with this. The
36 first of those was the severely fatty liver?

37 A Yes.

38 Q Correct? And on page 4, if I can have you go to
39 your report, you describe the liver as:

40

41 1800 grams, soft, greasy yellow/tan cut
42 surface with no localized lesions.

43

44 A Yes.

45 Q What -- what's the significance of the greasy
46 yellow/tan colour surface?

47 A Again, it's consistent with a fatty liver. That's

1 the typical appearance and consistency of a fatty
2 liver.

3 Q And is there any significance in the liver
4 weighing 1800 grams?

5 A No, that's probably about an appropriate weight
6 for the liver for his size and weight.

7 Q And what does no localized lesions mean?

8 A There weren't any specific point findings. For
9 example, there were no tumours or other localized
10 findings. There was just a generalized appearance
11 of a fatty liver.

12 Q And you further describe the liver as being soft.
13 What does that mean?

14 A Again, it's consistent with a fatty liver. As the
15 liver fills up with fat, it becomes softer than
16 normal.

17 Q Is this a condition of, in a lay term, liver
18 disease?

19 A It's liver changes. It's -- these are changes
20 that can be seen in livers from anyone who drinks
21 a large amount of alcohol.

22 Q And if I can, Doctor, have you just turn over to
23 page 5 dealing with the microscopic description.
24 You'll have to help out, the first phrase:

25
26 Severe macrovesicular --

27
28 A Steatosis.

29 Q Thank you. What's that?

30 A Again, it's the technical term for fat seen in the
31 liver cells.

32 Q At a cellular level.

33 A Yes.

34 Q
35 Mild to moderate chronic inflammation in the
36 portal tracts...

37
38 What's that?

39 A Again, it's inflammation mainly basically white
40 cells within parts of the liver known as the
41 portal tracts. Again, the amount of inflammation
42 is not that -- not that high, and it's a
43 relatively non-specific finding. It can be seen
44 in steatosis or fatty liver. It may suggest that
45 he had -- it can also be seen, for example, in
46 hepatitis, but I don't think in this case he'd had
47 hepatitis. It's a fairly non-specific finding.

1 Q And you say:

2

3

...without associated hepatocyte necrosis.

4

5

What's that?

6

A Hepatocyte necrosis. Cell death, death of liver cells.

7

8

Q Now, as I understand it, one of the functions of the liver is to metabolize lactic acid that's produced through or in the course of vigorous physical activity; is that correct?

10

11

12

A I believe lactic acid can be metabolized in the liver, but also in other cells as well.

13

14

Q When it's metabolized in the liver, there's a conversion to CO₂ and water?

15

16

A Yes, that's the -- that's the normal metabolism of lactic acid.

17

18

Q And would the conditions that you noted in your examination of the liver indicate that there would have been any increase or any impairment with respect to the ability to metabolize lactic acid at the liver site?

19

20

21

22

A Generally, no. Generally a fatty liver does not impair the liver's ability to metabolize -- basically, the liver is able to maintain its functions, even in the face of the fatty changes.

23

24

25

26

Q I'm going to move now, Doctor, to your examination of the brain. There, and if we can flip back, please, to the fourth page -- it's on the third page, my apology. You say -- you describe the procedure that you followed:

27

28

29

30

31

32

The ventricles are symmetrical and of normal size. No localized lesions.

33

34

35

36

What's that mean, Doctor?

37

A Again, there were no localized lesions, no tumours, no areas of previous infarcts and so on.

38

39

Q The brain stem is -- or, sorry:

40

41

No localized lesions. The brainstem is unremarkable.

42

43

44

What does that mean?

45

A Again, the brainstem appeared normal.

46

Q And then the last line on that page, you observed that:

47

1 The cerebellum shows atrophy of the
2 cerebellar vermis.

3

4 And you've given evidence about that this morning.

5 A Yes.

6 Q And that's a -- as I understand it, a physical
7 change to the brain consistent with chronic
8 alcoholism.

9 A Yes.

10 Q And, Doctor, over to your microscopic examination
11 of the brain on page 5, you describe the
12 microscopic results as showing:

13

14 ...moderate to severe atrophy.

15

16 A Yes.

17 Q

18 With a loss of --

19

20 A Purkinje.

21 Q

22 -- Purkinje cells and proliferation of
23 Bergmann's glia.

24

25 A Glia, yes.

26 Q What's that?

27 A

28 It's a proliferation of cells -- how can I
29 describe this without having to go through a
30 course of trying to describe the histology of the
31 cerebellum?

31

32 Microscopically, the cerebellum, you can see
33 multiple zones or layers in the cerebellum. One
34 of the layers contains the Purkinje cells. It
35 sort of aligns between two of the layers, and as
36 they disappear, these glial cells, the Bergmann's
37 glial cells sort of proliferate in response.
38 Again, it's a finding that's often seen in the
39 atrophy of the cerebellum.

39

40 Q And, from my understanding, what you're seeing is
41 actual changes to the brain at a cellular level;
42 is that correct?

42

43 A Yes.

44 Q

45 And again, that's consistent with chronic
46 alcoholism.

47

48 A Yes.

49

50 Q Now, the issue with the heart, if I can take you
51 now to page 4, first dealing with the weight of

1 the heart, 370 grams. Is that a heart that is
2 heavier than a normal heart?

3 A That's probably within the normal range.

4 Q Okay. And we've talked about the thickness, the
5 -- and my friend Mr. McGowan dealt with that this
6 morning. I want to pause for a moment.

7

8 The ventricles are dilated. and the
9 myocardium appears [to be] somewhat soft but
10 shows no scars or acute infarction.

11

12 So the dilation of the ventricles, can you explain
13 what that is, please?

14 A The dilation or the enlargement of the ventricles
15 of the heart is a finding that suggests that the
16 -- first of all, it's an abnormal finding. A
17 normal, the ventricles are -- or the ventricles
18 are fairly small in relation to the total diameter
19 of the heart. In this case, it was enlarged. The
20 space -- the ventricular space itself is much larger
21 than it should have been. Again, it's an abnormal
22 finding. By itself it can have a number of
23 potential causes. Alcohol is one of them, but
24 it's not the only one.

25 Q Now, Doctor, with respect to your microscopic
26 analysis of the tissue on page 5, you note:

27

28 Mildly increased, patchy interstitial and
29 perivascular fibrosis; focal areas of acute
30 interstitial hemorrhage; mild fatty
31 infiltration in the right ventricle without
32 fibrosis or inflammation.

33

34 Can you inform Mr. Commissioner what all that
35 means, please.

36 A Basically, it doesn't mean a whole heck of a lot.
37 These findings are minimal and they're relatively
38 non-specific. For example, fatty infiltration in
39 the right ventricle is something that can be seen
40 fairly often. It's probably of no significance.

41 The mildly increased fibrosis, it could be
42 within normal limits for his heart. It could be
43 sign of the dilated cardiomyopathy. But the thing
44 is, microscopically, there really weren't a lot of
45 definite changes in the heart.

46 Q Now, when the heart has enlarged ventricles, does
47 the heart function as efficiently as a healthy

1 heart?

2 A No, it doesn't.

3 Q And am I correct, sir, that dilated
4 cardiomyopathy, in some people, is life-
5 threatening itself?

6 A It can be if it's severe.

7 Q And it can also be a common cause of heart
8 failure; correct?

9 A Yes.

10 Q And that, in part, is because the heart is unable
11 to supply the body's tissues and organs with
12 sufficient blood.

13 A Yes.

14 Q It can cause irregular heartbeat; correct?

15 A Yes.

16 Q And sudden death?

17 A Yes.

18 Q And it's most frequently, as I understand it,
19 diagnosed in middle age.

20 A Sorry, say that again?

21 Q It's most frequently diagnosed in middle age?

22 A Yes, I would agree with that.

23 Q Your examination of the heart, both during the
24 course of your internal examination and the
25 microscopic analysis leads you to conclude that
26 those conditions that you found are consistent
27 with chronic alcoholism.

28 A Yes.

29 Q And the three findings in combination, the change
30 to the brain, the change to the liver in terms of
31 the fatty liver, and the changes in the cardiac
32 myopathy collectively provide you with -- or can
33 you comment on the degree of medical certainty
34 that you have with respect to the determination of
35 chronic alcoholism.

36 A The three findings, or the findings in the three
37 organ systems all together makes it the most
38 likely explanation for the -- for those three
39 findings would be chronic alcoholism. It's
40 unlikely that he had three completely unrelated
41 disease processes that would lead to the
42 individual findings in the heart, the lung (sic)
43 and the brain, and therefore I thought that the
44 most likely explanation would be the effects of
45 alcoholism.

46 Q And from my understanding from your evidence
47 earlier this morning, what you're not able to

1 determine is that whether those physiological
2 changes result from a long-term abuse of alcohol
3 or some shorter period of time, correct?

4 A Well, the chronic changes, the changes in the
5 heart and the brain would have had to occur over a
6 prolonged use of alcohol. Those changes don't
7 happen just because you, you know, have a binge
8 once and then no longer drink alcohol. It
9 indicates recurrent use of alcohol.

10 The liver changes simply indicate that he had
11 recently, most likely recently consumed a fair
12 amount of alcohol prior to death, probably within
13 a few days prior to death.

14 Q So the -- am I correct, then, that your analysis
15 of the liver gives you better handle on, or
16 possibly a better handle on the temporal issue of
17 consumption of alcohol? The other changes that
18 you've observed indicate a more long-term abuse of
19 alcohol; is that fair?

20 A Yes.

21 Q Doctor, I'm going to turn now to ask you several
22 questions with respect to the marks that you
23 observed on Mr. Dziekanski's body. If I can,
24 Doctor, take you back to page 3 of your report and
25 look under the heading, "Evidence of Injury,
26 Thorax and Abdomen." Are you with me --

27 A Yes.

28 Q -- Doctor? So what you find is you find:

29
30 A pair of punctate abrasions 2.0 cm
31 apart...on the central chest.

32
33 A Yes.

34 Q Correct? And the lower of those two abrasions is
35 somewhat darkened about -- about the edges.

36 A Yes.

37 Q And that's -- that lower mark is the mark that I
38 believe you attribute to the possibility of being
39 a taser probe point.

40 A Yes.

41 Q And not the other one, correct?

42 A That's correct.

43 Q You also note a 4.0 by 2.0 centimetre brown
44 contusion on the lower right chest?

45 A Yes.

46 Q And can you tell me what you mean by contusion as
47 distinct from a punctuate (sic) abrasion, please?

- 1 A A contusion is the medical term for a bruise.
2 It's an injury in the soft tissues below the skin
3 that causes bleeding in the soft tissues. An
4 abrasion is a scrape or a scratch where the top
5 layer of the skin is scratched away.
- 6 Q And a punctate (sic) abrasion, what's that?
7 A A punctate abrasion simply means that it's
8 pinpoint-like, that it's a very small discreet
9 pinpoint abrasion as opposed to a linear, like a
10 line-like abrasion or a brush abrasion where a
11 large portion of the skin is involved.
- 12 Q And with respect to the 4.0 by 2.0 centimetre
13 brown contusion on the lower right chest, you
14 don't want to attribute that bruise to a Taser
15 probe; is that fair?
16 A That's correct.
- 17 Q You also find a punctate dried red abrasion on the
18 lower right abdomen?
19 A Yes.
- 20 Q And that's the one that I think with Mr. Kosteckyj
21 you indicated was on -- just above the hip bone on
22 the right-hand side, almost at the -- what I would
23 call the margin between the front and the back.
24 A Yes.
- 25 Q And you -- you think that that is possibly a Taser
26 -- or a site where the second Taser probe may have
27 impacted the body.
28 A Yes. It didn't have quite the appearance of the
29 central abrasion. In this case, it just looks
30 like a small scratch on the skin. But it could
31 have been caused by the -- by the second Taser
32 probe.
- 33 Q Did it look -- and can you assist me with how it
34 looked different from the one that you do
35 attribute -- the lower one on the central chest to
36 the Taser probe?
37 A It didn't have the darkened edges around the
38 abrasion. It just -- it looked like a tiny
39 scratch.
- 40 Q And am I correct, Doctor, that that's the entirety
41 of the abrasions and contusions on the front of
42 the thorax and abdomen?
43 A Yes, that's the entirety of the entire thorax and
44 abdomen, both front and back, that I saw.
- 45 Q And, Doctor, just before I show you some
46 photographs, if I can have you turn up page 5
47 again. Midway down that paragraph in your

1 "Commentary", you'll see:
2
3 A darkened punctuate (sic) abrasion on the
4 central chest is --
5
6 A Yes.
7 Q
8 -- consistent with an electrode from Taser.
9
10 A Yes.
11 Q From a Taser.
12
13 The other electrode mark is not apparent, but
14 a couple of punctuate abrasions are present
15 on the chest and abdomen and one of these
16 might be the other Taser mark.
17 A Yes.
18 Q So you're not saying it is the other Taser mark.
19 It's speculation on your part; is that fair?
20 A Yes.
21 Q Now, Doctor, I'm going to show you two photographs
22 for -- and for the purpose of my colleagues,
23 they're Exhibit 86 photos 7134 and 7135.
24 MR. NEAVE: Mr. Commissioner, I have an extra copy for
25 you if that's of assistance. It's for your aide-
26 mémoire.
27 THE COMMISSIONER: Oh, that's all right. I have them.
28 MR. NEAVE: Seven-one-three -- for the purpose of my
29 colleagues, photo 7134 and 7135.
30 Q Now, Doctor, just to give you some assistance,
31 these are photographs of Mr. Dziekanski's shirt
32 after it was removed from him at -- and they were
33 taken at the airport.
34 The 7134 you will see the -- in that
35 photograph, it depicts what appears to me to be
36 the bottom edge of Mr. Dziekanski's shirt. You'll
37 see the three buttons, central, and you see the
38 probe which would be midline at the very bottom --
39 or very close to the very bottom of that shirt.
40 A Yes, I do.
41 Q Do you see that, Dr. Lee?
42 A Yes.
43 Q And the 7135 is merely a close-up showing the
44 probe lodged in the shirt.
45 A Yes.
46 Q Now, what I want you to think about, Dr. Lee, is
47 if the shirt is placed on Mr. Dziekanski in that

1 location such that the buttons are midline, were
2 there any marks that you observed on the skin
3 which are approximate to centreline lower abdomen?
4 A No, not that I noticed.
5 Q Thank you, Dr. Lee. Dr. Lee, a phrase that has
6 been used in this inquiry today is "trans-
7 cardiac", and for the purpose of my question, I
8 want you to assume that it's a position midline
9 centre below the heart to upper chest on the left-
10 hand side.
11 A Okay.
12 Q Were there any marks on Mr. Dziekanski's body
13 which would equate to a trans-cardiac access -- or
14 axis, rather, of two probes?
15 A Well, there was a single probe on the central
16 chest just near the bottom of the sternum or the
17 breastbone, and I didn't see any mark on the upper
18 right -- or upper left shoulder or chest area that
19 I could attribute to a Taser mark, but there was
20 one in the centre of the chest.
21 Q Yes. And that one is centre chest about two
22 centimetres from the one that you identified as
23 being a possible Taser impact point.
24 A Yes.
25 Q But nothing above and in the right upper shoulder
26 area -- or left upper shoulder area, pardon me.
27 A Yes, that's correct.
28 Q There's no marks there?
29 A That's correct.
30 Q Thank you. Now, in your report, you describe Mr.
31 Dziekanski was being well-nourished on page 2.
32 A Yes.
33 Q What do you mean by that?
34 A In other words, that he had adequate amounts of
35 subcutaneous fat. He wasn't underweight. He
36 wasn't, well, what we typically call skin and
37 bones, so in that sense, he was well-nourished.
38 Q Did you happen -- or did you calculate a BMI index
39 for Mr. Dziekanski?
40 A No, I didn't.
41 Q Doctor, I'm going to move now and ask you some
42 questions of Mr. Dziekanski's wrists.
43 A Okay.
44 Q Now, on page 3 of your report, Doctor, you
45 describe, on page 3, under the extremities area,
46 certain observations that you made during the
47 course of your external examination, correct?

1 A Yes.

2 Q And you had, as part of your internal examination,
3 conducted a further examination of the wrist area,
4 correct?

5 A Yes. I cut the skin and examined the tissues
6 below the skin of the wrists.

7 Q Now, on page 3 at the bottom of that paragraph
8 dealing with the extremities, you say you incised
9 both wrists -- or, sorry:

10
11 Incising both wrists reveal scattered
12 subcutaneous hemorrhages in both wrists.
13

14 A Yes.

15 Q And in your report, you attribute that to being
16 consistent with the application of the handcuffs.

17 A Yes.

18 Q This bruising was internal, correct?

19 A Yes, it was -- well, it was both visible on the
20 skin as well as being underneath the skin.

21 Q And can you describe for me the -- for Mr.
22 Commissioner the mechanism that's involved in this
23 type of bruising?

24 A Well, bruising is a blunt force injury. It's
25 caused when sufficient force is applied that
26 breaks the blood vessels in the tissues and causes
27 bleeding within the tissues.

28 Q And in order for bleeding to occur, am I correct
29 that there has to be a pulse?

30 A There has to be some blood pressure.

31 Q And this bruising, is it consistent with persons
32 who are actively resisting arrest?

33 A It's consistent with someone who is struggling
34 even with the handcuffs on, that they're
35 struggling against the cuffs and it's causing
36 injuries basically by the pressure of the cuffs
37 against the wrists.

38 Q In essence, what's occurring is there's a
39 sufficient struggle with the handcuffs in this
40 case to damage the blood vessels inside the wrist
41 which results in the bruising; is that fair?

42 A Yes.

43 Q Now, Doctor, I'm going to spend some time with you
44 on your "Commentary" on pages 5 and 6 of your
45 report. Is it fair, Doctor, to say that although
46 sudden death, as we talked about this morning, has
47 been described in the medical literature for a

1 long time, that the mechanism that results in
2 death is not well understood.

3 A Yes, there's been some controversy as to exactly
4 what -- what physiological processes are
5 occurring. For a while, it was believed to be
6 positional restraint, or positional asphyxia as a
7 possible explanation for these deaths. That
8 theory has pretty much been largely refuted as a
9 significant factor.

10 Q It's fair to say that the causes are believed to
11 be multi-factoral?

12 A Yes.

13 Q And one of the factors is this issue of anxiety.

14 A Yes.

15 Q And physiological stress?

16 A Yes.

17 Q Do you have any opinion, Doctor, on the mechanism
18 resulting from the anxiety or the physiological
19 stress and how, indeed, from a physiological
20 perspective, death results?

21 A Well, the current thinking is that individuals who
22 are in a -- what is known as a hyperadrenergic
23 state or someone who was extremely agitated with a
24 lot of adrenaline flowing through their bodies,
25 adrenaline has a number of effects on a wide
26 number of organs.

27 Its effects on the heart include increases in
28 blood pressure and heart rate, and it can
29 potentially lead to an arrhythmia. That's one of
30 its effects on the heart. If there are a number
31 of other contributing factors that simply increase
32 the adrenergic response or the adrenergic state of
33 the individual, that all those in combination can
34 lead to a lethal arrhythmia. In many cases, it's
35 certain drugs, such as cocaine, and the
36 methamphetamines, the stimulants, 'cause they also
37 have very similar effects to adrenaline on the
38 body organs, not to mention that they often cause,
39 in the intoxicated state, individuals who are
40 under the influence of these drugs, behave
41 bizarrely and, as a result, attract the attention
42 of the police.

43 So those drugs play probably a large
44 significant contributing factor in many of these
45 sudden in-custody deaths. But again, there are
46 some cases where these drugs are not involved.
47 But any kind of physiologic stress will simply add

1 to the problem. It's almost like, you know, the
2 straw that breaks the camel's back. Eventually
3 you reach a point where even a small additional
4 stressor can lead to the formation of a lethal
5 arrhythmia and death.

6 Q So that would be an effect on the heart, a cardiac
7 issue with some form of arrhythmia. Is that --
8 that's one of the theories, correct?

9 A Yes.

10 Q And is there another theory that suggests that
11 there's a direct effect on the brain which, in
12 turn, causes heart failure?

13 A There are theories that the vagal nerve might be
14 stimulated. In some cases, that could lead to a
15 sudden drop in blood pressure, sudden slow down in
16 the heart and eventual cardiac standstill.
17 Obviously a number of these drugs also have
18 certain effects on the brain causing the delirium,
19 causing the altered mental status. Again, that's
20 simply part of the picture of a hyperadrenergic
21 state.

22 Q Is one of the other features of that -- of that
23 state a cessation in breathing as an intermediate
24 step between an effect on the brain and an
25 ultimate cardiac arrest, or cardiac termination of
26 heart function rather than arrhythmia?

27 A It's hard to know exactly which one comes first.
28 I would say that I think that most people believe
29 it's primarily a cardiac event and that the
30 stoppage in breathing comes secondary to the loss
31 of cardiac function. However, I don't think
32 that's been completely solidified as the only
33 cause.

34 Q Okay. I'm going to come back to this when I deal
35 with some of the other expert reports that are
36 before Commissioner Braidwood.

37 We were talking, though, about the
38 constellation of factors that lead to sudden death
39 and we were talking about anxiety and physical
40 stress as being two of those.

41 A Yes.

42 Q Is a factor that goes into this constellation the
43 emotional and physical result of alcohol
44 withdrawal?

45 A It can. It really depends on the severity of the
46 alcohol withdrawal. Minor alcohol withdrawal is
47 not dangerous. Severe alcohol withdrawal, by

1 itself, can be fatal for example. Severe alcohol
2 withdrawal is known as *delirium tremens* or the
3 "DTs", and it has its own possibility of being
4 fatal in and of itself. But mild alcohol
5 withdrawal is probably not significant. So again,
6 alcohol withdrawal spans quite a spectrum of
7 effects.

8 Q And is there an increased level of stress in this
9 constellation derived from alcohol abuse that is
10 below the level of *delirium tremens*?

11 A I'm not quite sure what you mean.

12 Q A poorly-framed question. Let me try that again.
13 One of the issues that you mentioned was that a
14 stressor could be at the point of *delirium*
15 *tremens*.

16 A Yes.

17 Q Is there a point of alcohol withdrawal below
18 entering that level which is consistent with the
19 addition of further anxiety or physiological
20 stress in this constellation?

21 A Yes, it's possible. Alcohol withdrawal spans a
22 continuous spectrum, so it's -- at one end, it's
23 very mild. At the other end it's quite severe and
24 potentially fatal on its own. But there is a
25 continuous spectrum between those two points. A
26 person can be in a moderate state of alcohol
27 withdrawal where they feel quite agitated, but
28 they're still lucid in the sense that they're
29 still -- understand what's going on, for example.
30 So, yes, it's a spectrum.

31 Q And within that spectrum, I'm going to put some
32 symptoms to you and ask you about those. The
33 first being autonomic hyperactivity for --
34 sweating, a pulse rate of more than 100. Is that
35 one of the factors that would fall within -- or an
36 indicia of a more severe form of alcohol
37 withdrawal?

38 A Again, those can be features of alcohol
39 withdrawal. It's hard to grade the severity of
40 alcohol withdrawal until it sort of manifests
41 itself, until it works itself out. But, you know,
42 even -- even mild to moderate withdrawal can lead,
43 for example, to an increased heart rate, so it's
44 hard to really provide a conclusive answer to that
45 question.

46 Q Okay. How about nausea and vomiting?

47 A Yes, that can occur.

1 Q Psychomotor agitation? For example, unintentional
2 and purposeless motion including pacing about a
3 room, throwing furniture or various other
4 articles.

5 A Oftentimes there can be trembling or *tremulus*
6 where they're shaking, they have the shakes. As
7 far as throwing things around, I don't think
8 that's a particular symptom or sign in alcohol
9 withdrawal. It's possible that people who are
10 undergoing alcohol withdrawal may end up throwing
11 things around or wandering or pacing, but I don't
12 think that alone is a definite sign of alcohol
13 withdrawal.

14 Q The tremors that you're mentioning, are they
15 restricted to any particular part of the body or
16 are they general in nature?

17 A I think they're probably most noticeable in the
18 hands and the feet, the extremities, but they may
19 occur elsewhere.

20 Q How about insomnia?

21 A I guess it's possible, yes.

22 Q So apart from these various symptoms of alcohol
23 withdrawal, other factors that could increase
24 physiological stress are, in part, psychological,
25 I presume, an apprehension or agitation about
26 travel as an example?

27 A Yes, that's possible.

28 Q Arrival in a new country?

29 A Yes.

30 Q Spending eight or so hours in an arrivals area at
31 Vancouver International Airport without eating?

32 A Yes, that's probably the main stressor in this
33 case.

34 Q Language issues of only being able to speak
35 Polish?

36 A Yes, that can play a role.

37 Q And, for the most part, not having anyone who can
38 speak Polish to you?

39 A Yes.

40 Q Expecting to meet one's mother upon arrival?

41 A I don't know if that's a significant stressor, but
42 it may be.

43 Q Cessation of smoking?

44 A It probably could be a stressor. I understand
45 from people who try to quit smoking that trying to
46 quit smoking makes them irritable, so it can lead
47 to an increase in stresses, stress levels, yes.

- 1 Q And it could lead to nicotine withdrawal, for
2 example?
- 3 A Yes.
- 4 Q And if -- if they were -- if a person were in
5 nicotine withdrawal, would that elevate the degree
6 of anxiety?
- 7 A It may, yes.
- 8 Q Is one of the indicia of being in a severely
9 anxious or state of severe anxiety demonstrating
10 superhuman strength?
- 11 A The demonstration of superhuman strength is an
12 indication of the hyperadrenergic state. The
13 increased levels of adrenaline that's flowing in
14 the body, that's one of the -- one of the signs.
- 15 Q And how about an attraction to glass?
- 16 A That I don't know.
- 17 Q Likely in conjunction with the superhuman strength
18 issue, the ability that's been advanced of being
19 able to fight through the Taser charge.
- 20 A I guess it's possible, but my understanding is
21 that Taser causes an involuntary muscle
22 contraction, and I don't know how much the effect
23 of adrenaline can counteract that. So I can't
24 really answer that question.
- 25 Q And obviously the restraint issues that you were
26 speaking about this morning.
- 27 A Yes.
- 28 Q Now, Dr. Lee, I'm going to ask for your opinion
29 after I provide you with some factual evidence
30 that was given in this inquiry with respect to the
31 monitoring of Mr. Dziekanski after the application
32 of the Taser device.
- 33 A Okay.
- 34 Q And after he was handcuffed.
- 35 MR. NEAVE: Mr. Commissioner, I'm going to read
36 portions of Mr. Enchelmaier's evidence from pages
37 96 and 97 of his evidence. There's an extract.
38 With your leave, I'll give it to the witness as
39 well.
- 40 Q Now, just by way of background for your
41 information, Doctor Lee, Mr. Enchelmaier is with
42 -- is the head of Security at the Vancouver
43 International Airport.
- 44 A Okay.
- 45 Q His evidence is to the effect that he has Level 1
46 first-aid training, that he's current -- he's a
47 current CPR operator, that he is a former

1 volunteer ambulance officer in Australia, and was
2 a trained lifeguard in California and received
3 first-aid training in both Australia and the
4 United States.

5 A Okay.

6 Q His evidence is, and I'll take you to the third of
7 the monitoring points, but his evidence is that he
8 monitored Mr. Dziekanski's pulse on breathing
9 (sic) on three occasions between the time of the
10 last Taser deployment and the application of the
11 handcuffs, so from that point, and following Mr.
12 Dziekanski becoming unconscious, until shortly
13 before the arrival of the Richmond Fire
14 Department. So there are three periods of
15 monitoring in a space of approximately eight to
16 nine minutes.

17 A Okay.

18 Q And that the last time he monitored Mr. Dziekanski
19 was approximately two minutes prior to Richmond
20 Fire Department's arrival.

21 A Okay.

22 Q Now, what he says on the 16th of February, 2009 --
23 and if I can, Dr. Lee, take you to page 96 and
24 you'll see at line 3:

25

26 Q Thank you. Now, moving on to the third --
27 before I do, did [anyone] you communicate
28 your findings from that check to [anyone]
29 anybody?
30

31

32 So now it's clear that we're on the third
33 deployment -- or the third assessment, rather.
34 And then down -- and I'll just read portions of
35 this. At line 20:

36

37 Q Okay. And the -- some time passes before
38 your next check, the third check?

39 A There would have been a few minutes. I'm not
40 sure exactly how many.

41 Q And your recollection about two minutes
42 before the firefighters arrive, maybe less
43 than two minutes?

44 A That's correct.

45 Q Okay. Tell us about that check, how it
46 compared to the first [and] -- the second
47 check.

48 A His pulse --

1 Q Let me ask you [this] first, though, did you
2 do the very same things?

3 A I did.

4

5 And he, for your information, Dr. Lee, had
6 explained in detail the process. These are
7 checking of the carotid artery.

8 A Okay.

9

Q

10 Q Okay. For the very same amount of time?

11 A Approximately, yes.

12

13 Okay. How long was your breathing check?

14

15 30 -- 20, 30 seconds until I could actually
16 be clear that I had heard and felt breathing.

17

18 Q Okay. And the pulse check was about the same
19 as we've seen before?

20 A That's correct.

21

22 And he'd given some time intervals about that.

23

24 Q And did you approach Mr. Dziekanski in...the
25 same way from the same side and do...the same
26 things you described for the second check?

27 A I would assume so, I can't be positive.

28 Q Okay. Tell the Commissioner about any
29 findings you made when you did the third
30 pulse [check] and breathing check, or the
31 third pulse check and the second breathing
32 check, I guess.

33 A I noticed that with his pulse it was a slow
34 pulse, still a clear pulse there in his
35 carotid pulse, again in his neck. And the
36 breathing was slow, low breathing,
37 but...clearly breathing.

38 Q Is it the same as with the other checks, you
39 can't give us any indication as to beats per
40 minute or respirations per minute?

41 A That's correct, I never checked that.

42

43 So that's the evidence that is, in part, before
44 the Commission with respect to Mr. Dziekanski
45 continuing to breath and have a pulse for seven to
46 nine minutes after the application of the
47 handcuffs.

1 A Okay.

2 Q In that circumstance, is there any prospect, in
3 your opinion, Dr. Lee, that the discharge of the
4 Taser could have caused an arrhythmia?

5 A Directly, I don't think so.

6 Q And that -- is that in part because an electrical
7 charge will result in ventricular fibrillation?

8 A Well, an electrical charge will have an effect on
9 the heart. It should have an -- it should have an
10 effect on the heart immediately. If it changes it
11 to a pulseless rhythm, such as ventricular
12 fibrillation, the person should become unconscious
13 and have no pulse, no detectable pulse within
14 seconds after the application of the Taser.

15 So the direct effects of the Taser probably
16 would not be consistent with him being -- having
17 apparent pulse and respiration several minutes
18 after being cuffed.

19 Q In the course of preparing your evidence, were you
20 given a document called "Circumstances Document"
21 by Commission counsel?

22 A I'm -- it doesn't sound familiar, but I might
23 have.

24 Q I'll show it to you and I'll ask if you've seen it
25 before. Have a look at that, Doctor, and let me
26 know if you've seen that before.

27 A No, this is new.

28 Q Thank you. I won't put that to you. I just
29 wanted to know if you'd seen it.

30 A Okay.

31 MR. NEAVE: May the witness be shown Exhibit 79,
32 please, the -- Mr. -- Dr. Di Maio's expert
33 opinion.

34 Mr. Commissioner, I don't believe that the
35 witness has had the opportunity to review Dr. Di
36 Maio's opinion and Dr. Pollanen's opinions that
37 are now tendered for the proof of their contents.
38 I'm wondering if it might be a convenient time to
39 brief -- break briefly so that he has the
40 opportunity to review those.

41 THE COMMISSIONER: All right, if he can do it in that
42 short of time. We'll take a ten-minute break.

43 MR. NEAVE: Thank you.

44 THE REGISTRAR: The hearing will now recess for ten
45 minutes.

46

47

(WITNESS STOOD DOWN)

Charles Lee

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

1 (PROCEEDINGS ADJOURNED FOR AFTERNOON RECESS)
2 (PROCEEDINGS RECONVENED)
3

4 THE REGISTRAR: Hearing is now resumed.

5 MR. NEAVE: Thank you, Mr. Commissioner. Just before I
6 move on to the reports that Dr. Lee has now had to
7 -- had the opportunity to examine, there is a
8 document that has been produced to counsel from
9 Commission counsel entitled "Sickness History".
10 It's now -- as I understand it, there were a
11 series of documents from Mr. Dziekanski's medical
12 records that were handwritten and in Polish.
13 Those have now been translated and typed. I don't
14 believe this is an exhibit and I'm in your hands.
15 I'm going to put to Dr. Lee a question concerning
16 one of the medications that was prescribed to and
17 is --

18 THE COMMISSIONER: Go ahead.

19 MR. NEAVE: Thank you.
20

21 CHARLES LEE, a witness,
22 recalled.
23

24 CROSS-EXAMINATION BY MR. NEAVE ON BEHALF OF TASER
25 INTERNATIONAL, continuing:
26

27 Q Dr. Lee, I'm going to show you this document.
28 It's entitled "Sickness History". You heard my
29 description of it. On the last page, you will see
30 -- and this is a translation, so the spelling is
31 off a little bit, but in the 29th of May, 2007,
32 there's a reference to an examination occurring,
33 and then on the second-to-last page of the
34 document, there's a complaint [as read]:
35

36 Patient complains about chest pain, a pain in
37 the left tarsal joint.
38

39 And then on the last page -- or the second --
40 sorry, my apologies. It's about -- it's the
41 second to last page, Mr. Commissioner, that
42 there's writing on. There's some other ones that
43 there's no entries on.

44 In the prescription, a drug called "Metarpol"
45 (sic), but it's actually it's "Metropol" (sic).
46 Do you --

47 A I believe it's Metoprolol.

1 Q Okay. Thank you. What is that?

2 A It's a beta-blocker. It's -- it has a number of
3 uses. One of them is to -- it can be used, for
4 example, in people with high blood pressure. It
5 can also be used as a calming agent. Someone who
6 is very anxious, sometimes it's given to sort of
7 calm -- calm nerves, for example. So again, it
8 has a number of potential uses.

9 Q And I'm -- I'm obliged to my colleague, Mr. Hira,
10 who's surfed the web. Let me put these issues to
11 you and see if that's consistent with your
12 understanding. You've indicated there are -- it's
13 a portion -- it's of the group of beta blockers,
14 and then it says [as read]:

15
16 Beta blockers affect the heart and
17 circulation.

18
19 Is that -- blood through -- through the arteries
20 and veins; is that correct?

21 A Yes.

22 Q Metoprolol is used to treat angina, chest pain?

23 A Yes, it can.

24 Q And hypertension?

25 A Yes.

26 Q And it's also used to treat or prevent heart
27 attack?

28 A Yes, it's one of the medications used in cardiac
29 patients.

30 Q And dysrhythmia?

31 A Yes.

32 Q And I understand from this document, in any event,
33 it's contraindicated with alcohol?

34 A Alcohol can potentiate some of the side effects of
35 Metoprolol, yes.

36 Q And, in essence -- what I mean by contraindicated,
37 it -- if you're on this drug, you shouldn't be
38 drinking alcohol; is that fair?

39 A Yes.

40 Q And under "side effects", it says -- and you can
41 please inform Commissioner Braidwood if this is
42 correct.

43
44 Metoprolol (sic) can cause side effects that
45 may impair your thinking or reactions.

46
47 A That, I'm not sure. Like I said, it has a bit of

1 a calming effect. But I don't know if it actually
2 has any significant effect on thinking or
3 behaviour.

4 MR. NEAVE: Thank you. Mr. Commissioner, I'd -- would
5 request that this document be filed as an exhibit.
6 It's a bit improper because I've got no one to
7 tender it through, so I'm in your hands on that
8 issue.

9 THE COMMISSIONER: Well, I'm just trying to think of
10 the use of it. You know, I'm a little
11 apprehensive about medical records of Mr.
12 Dziekanski, but if there's some point to it -- we
13 know that there's a mention of that drug and --

14 MR. NEAVE: Right.

15 THE COMMISSIONER: -- you've examined that. That's all
16 there is -- if that's all there is to it, I'd
17 just --

18 MR. NEAVE: That's fine. My purpose, as you --

19 THE COMMISSIONER: -- as soon it not be marked.

20 MR. NEAVE: -- can imagine, Commissioner Braidwood, is
21 to deal with this drug and the side effects and
22 the alcohol issue and the manner for -- and the
23 conditions for which it's prescribed. And I think
24 -- I think --

25 THE COMMISSIONER: Let's just leave it.

26 MR. NEAVE: -- we've done that.

27 Q And lastly, Dr. Lee, is there a notice or an
28 advisory with respect to reducing this drug on a
29 graduated basis rather than stopping it over short
30 term?

31 A That's sort of getting out of my area of
32 expertise. I think it's probably best to talk to
33 a cardiologist regarding the treatment and --

34 Q Thank you.

35 A -- side effects of the drug.

36 Q Great, thank you. So, Dr. Lee, I'm going to move
37 now to ask you several questions with respect to
38 Dr. Vincent Di Maio's report. It's Exhibit 79.
39 You've got that before you, correct?

40 A Yes.

41 Q And you've now had the opportunity to review that?

42 A Yes.

43 Q If I can -- firstly, Dr. Lee, if I can take you to
44 page 6, you'll see that in the second full
45 paragraph on the page, Dr. Di Maio says this:

46
47

Based on the aforementioned information, it

1 is my opinion that death was due to a cardiac
2 arrhythmia secondary to the effects of
3 chronic alcohol abuse; alcohol withdrawal;
4 stress from both the emotional and physical
5 results of the withdrawal; the struggle with
6 law enforcement personnel and alcoholic
7 cardiomyopathy.
8

9 And then he discusses the mechanism of how that
10 might occur in the rest of the paragraph.

11 A Yes.

12 Q Is that consistent with your opinion, Doctor?

13 A Yes. Basically --

14 Q Then --

15 A -- he sort of expands on what I wrote, but
16 essentially it's the same.

17 Q Thank you. Now, at the bottom of the page you
18 will see his reference to symptoms of alcohol
19 withdrawal and he's got a list of the eight which
20 -- of the eight symptoms which are indicative --
21 are indicative of alcohol withdrawal?

22 A Yes.

23 Q And it will come as no surprise to you that those
24 are some of the ones that I read to you earlier
25 this afternoon?

26 A Yes.

27 Q And you will see, Doctor, over the page -- well --
28 and firstly, those symptoms may begin four to 12
29 hours after stopping the use of alcohol and
30 usually peak on the second day?

31 A Yes.

32 Q Is that consistent with your understanding,
33 Doctor?

34 A Yes.

35 Q And then over the page, you will see on the --
36 starting at the top of the page:

37

38 The diagnosis of alcohol withdrawal is based
39 on the presence of two or more of the above
40 symptoms following cessation or reduction in
41 individuals manifesting heavy and/or
42 prolonged use of alcohol.
43

44 Do you see that, Doctor?

45 A Yes.

46 Q Is that consistent with your opinion, sir?

47 A Again, I'm not really in a position to provide an

1 opinion in terms of diagnosing alcohol withdrawal;
2 I'm not a clinician. But, from what I recall from
3 my previous training, that sounds about right.

4 However, I will -- I should -- I would like
5 to say that it's -- it's difficult in a non-
6 hospital setting to make the diagnosis of alcohol
7 withdrawal, and I would be leery of trying to make
8 that diagnosis based simply on what is seen on the
9 video.

10 But, having said that, I otherwise agree with
11 the information provided.

12 Q And then, Doctor, if I can cause you to move down
13 to the second full paragraph, Dr. Di Maio says
14 this:

15
16 There is no evidence that use of the TASER
17 caused the death. A TASER can be employed two
18 ways as occurred in this instance. The most
19 common way is as an Electro-Muscular
20 Disruption (EMD) device to cause
21 neuromuscular incapacitation or strong muscle
22 contractions through the involuntary
23 stimulation of nerves.

24
25 And we talked -- that was your evidence this
26 morning --

27 A Yes.

28 Q -- correct, with respect to that application.
29 Would you agree with that statement, sir?

30 A Yes.

31 Q And then moving along:

32
33 In the drive-stun mode, it is a pain
34 compliance devise. The drive-stun mode does
35 not incapacitate a subject but may assist in
36 taking a subject into custody because of the
37 induced pain. In neither mode does it
38 interfere with respiration, as has been
39 demonstrated by human experimentation. It has
40 been estimated that approximately 750,000 law
41 enforcement individuals have been voluntarily
42 tasered with no deaths or fatal arrhythmias.

43
44 Is that your opinion as well, Doctor Lee?

45 A Yes. I can't give any opinion on the number of
46 law enforcement individuals who are tasered, so
47 I'll have to take that on face value. But, in

1 terms of the Taser directly causing death, I agree
2 with his opinion.

3 Q On that point, Doctor, are you familiar with the
4 recent Department of Justice Report that Dr.
5 Bozeman, amongst others, authored with respect to
6 the safety of the Taser devices?

7 A Yes, I think I am.

8 Q And does that assist you in terms of the last
9 sentence?

10 A Again, I don't recall the report in detail, but it
11 could very well be that those numbers were used.

12 Q And then Dr. Di Maio goes on to say:

13
14 The only way a TASER could theoretically
15 cause death directly would be by producing a
16 fatal cardiac arrhythmia, i.e. by
17 electrocution, and then only when employed as
18 an Electro-Muscular Disruption (EMD) device.
19 The arrhythmia produced would have to be
20 ventricular fibrillation, [with] the
21 arrhythmia produced by electrocution. The
22 arrhythmia would have to occur at the time he
23 was last Tasered in the Electro-Muscular
24 Disruption (EMD) mode as electricity does not
25 accumulate in the body. Ventricular
26 fibrillation would result in lose[s] of
27 conscious in 5-15 seconds. Respiration may
28 continue for a minute --

29
30 Or, sorry:

31
32 -- may continue for about a minute. Neither
33 of these occurred following the last use of
34 the TASER in the EMD mode. Following the
35 last use of the Taser in the Electro-Muscular
36 Disruption (EMD) mode, Mr. Dziekanski
37 continued to struggle, was drive-stunned at
38 least once, handcuffed and then even
39 continued to struggle.

40
41 Is that paragraph consistent with your opinion,
42 sir?

43 A Yes, it is.

44 Q And indeed, from the evidence that I read to you
45 from Mr. Enchelmaier, it appears that he was
46 monitored with a pulse and a heart rate for
47 substantially longer than the period reflected

1 here.

2 A Yes, that's correct.

3 Q You will see, Doctor, there's a reference to the
4 interim report of June 2008 from the NIJ and the
5 findings that I was taking -- I can tell you that
6 that report's now been finalled (sic).

7 A Okay, yes.

8 Q And the conclusions of that study are over on page
9 8 and they are as follows, first:

10

11 Although exposure to CED is not risk free,
12 there is no conclusive medical evidence
13 within the state of current research that
14 indicates a high risk of serious injury or
15 death from the direct effects of CED
16 exposure.

17

18 You agree with that based on your review of the
19 literature, Doctor?

20 A Yes, I am.

21 Q Secondly:

22

23 There is currently no medical evidence that
24 CEDs pose a significant risk for induced
25 cardiac dysrhythmia when deployed reasonably.

26

27 Is that consistent with your review of the medical
28 of the medical research, Doctor?

29 A Yes.

30 Q

31 3. There is no medical evidence to suggest that
32 exposure to a CED produces sufficient
33 metabolic or physiologic effects to produce
34 abnormal cardiac rhythms in normal, healthy
35 adults.

36

37 Doctor, is that consistent with your understanding
38 of the state of the medical literature.

39 A Yes, it is.

40 Q

41 4. Research shows that human subjects maintain
42 the ability to breathe during exposure to
43 CED.

44

45 That's conducted-energy device. Is that, sir,
46 consistent with your knowledge of the state of the
47 medical literature?

1 A Yes.

2 Q And lastly:

3

4 5. Current medical research suggests that CED
5 deployment is not a stress of a magnitude
6 that separates it from any --

7

8 Sorry.

9

10 -- separates it from the other components of
11 subdual.

12

13 Is that consistent, Doctor, with your opinion?

14 A Yes, it is.

15 Q And then, Doctor, if I can take you two paragraphs
16 down to the paragraph starting "Whenever...", on
17 page 8. Are you with me?

18 A Okay.

19 Q

20 Whenever one gets excited, either from
21 emotional or physical reasons, or engages in
22 strenuous activity such as a struggle, there
23 is [an] activation of the [Sympatic]
24 Sympathetic Nervous System with release of
25 the catecholamine norepinephrine (NE) from
26 nerve cells into the synaptic spaces between
27 the Sympathetic neurons and receptor organs,
28 such as those on heart...and the coronary
29 arteries. In addition, NE --

30

31 As it's defined above.

32

33 -- and epinephrine...another catecholamine,
34 are released into the blood from the
35 adrenals. In this case, levels of
36 catecholamines would have also been increased
37 by the cardiomyopathy, alcohol withdrawal and
38 chronic use of alcohol.

39

40 Or, sorry:

41

42 ...chronic abuse of alcohol.

43

44 Doctor, is that consistent with your opinion?

45 A Yes. In this case, I think there were also a
46 number of other stressors that would have
47 increased the levels of epinephrine and

1 norepinephrine in his body, but I think the
2 overall effect is still the same thing, that he
3 was in a high hyperadrenergic state from a number
4 of factors.

5 Q And indeed, he was in this high hyperactive state
6 before the application of the Taser device; is
7 that your opinion?

8 A Yes.

9 Q And then, Doctor, if I can have you flip to the
10 last page, page 9, and the summary, the last
11 paragraph.

12
13 In summary, it is my opinion that death was
14 due to a cardiac arrhythmia secondary to the
15 effects of chronic alcohol abuse; alcohol
16 withdrawal; stress from both the emotional
17 and physical results of the withdrawal; the
18 struggle with law enforcement personnel and
19 alcoholic cardiomyopathy. The mechanism
20 precipitating the fatal arrhythmia was, in
21 all medical probability, a hyperadrenergic
22 (sic) --

23
24 A Hyperadrenergic.

25 Q Thank you.

26
27 -- state due to elevated levels of
28 catecholamines produced by autonomic
29 hyperactivity, psychomotor agitation,
30 anxiety, the struggle, and increased
31 catecholamine levels observed in
32 cardiomyopathies and chronic alcohol abuse.

33
34 Doctor, is that consistent with your finding that
35 you have testified today about?

36 A Yes, it is.

37 Q And that's consistent with your opinion that death
38 was sudden death during restraint as a consequence
39 of chronic alcoholism.

40 A Yes, among other factors.

41 MR. NEAVE: Mr. Commissioner, I am now, with your
42 leave, going to put to the witness certain
43 statements by Dr. Charles Swerdlow. It's -- as
44 you know, Dr. Swerdlow is going to testify
45 tomorrow. He has provided Commission counsel --
46 he was retained by Commission counsel and provided
47 a report dated the 22nd of April, 2009, if I may

1 hand that up.

2 THE REGISTRAR: (Indiscernible - mike not on).

3 MR. NEAVE: I have extra copies if anyone needs them.

4 UNIDENTIFIED SPEAKER: I appreciate that, Mr. Neave.

5 Thank you.

6 MR. NEAVE: Mr. Commissioner, Mr. Hira, in the sake of
7 expediency, has asked me to go back on Dr. Di
8 Maio's opinion and put two additional paragraphs
9 to Dr. Lee.

10 Q If you still have that with you, Dr. Lee --

11 A Yes, I do.

12 Q -- of Dr. Di Maio. Page 9 again. And you'll --
13 I'm at the second paragraph, the first full
14 paragraph on the page starting with "Thus...".

15 A Yes.

16 Q

17 Thus, anyone engaging in a struggle or
18 strenuous activity, after cessation of the
19 struggle, enters a "period of peril"
20 characterized by peak levels of NE --

21

22 And that's defined previously.

23

24 and E[pinephrine] --

25

26 And that's defined -- or, "E" and that's defined
27 previously.

28

29 -- and dramatically falling levels of
30 potassium. While the usual result [in] of
31 these physiological changes is uneventful
32 with a complete return to normal, in some
33 individuals death can result.

34

35 Do you agree with that statement, Doctor?

36 A Yes, I do.

37 Q And then the next paragraph:

38

39 In this case, the elevated catecholamine
40 levels due to the struggle were aggravated by
41 the effects of alcohol withdrawal and the
42 probable presence of elevated levels of
43 catecholamines present as a result of chronic
44 alcohol abuse and cardiomyopathy.

45

46 Do you agree with that statement, Dr. Lee?

47 A Yes.

1 Q And again, all of those are consistent with your
2 opinion?

3 A Yes.

4 Q Now, Dr. Lee, I've got Dr. Swerdlow's opinion, the
5 22nd of April, 2009. Are you with me on that
6 document, Doctor?

7 A Yes.

8 Q I would like to start, Doctor, with page 5, under
9 "Background". Just so you -- and so -- for the
10 purposes of the record, Dr. Swerdlow is a cardiac
11 electrophysiologist engaged in the practice of
12 medicine teaching at Cedar-Sinai Medical Centre in
13 Los Angeles.

14 A Okay.

15 Q And his c.v. is attached as well as a summary of
16 his qualifications on the first page.

17 But moving to the fifth page under
18 "Background" and under the heading "Medical
19 Summary of Events Leading to Mr. Dziekanski's
20 Death", "Background":

21
22 Based on post-mortem evidence and reports of
23 his activities, Mr. Dziekanski was, to a high
24 degree of certainty, a chronic alcoholic who
25 had both alcoholic liver disease and
26 [alcohol] alcoholic dilated cardiomyopathy.
27 Post-mortem toxicological analysis detected
28 no ethanol or drugs.

29
30 Is that a fair statement?

31 A Yes.

32 Q And you agree with that?

33 A Yes.

34 Q And then, Doctor, over to page 7 under the heading
35 "Observations Pertinent to the Relationship of CEW
36 Discharge to Mr. Dziekanski's Death" and under the
37 heading, "Mr. Dziekanski did not die from
38 electrically-induced cardiac arrhythmia."

39 A Okay.

40 Q Are you with me, Doctor?

41 A Yes.

42 Q
43 Arrhythmia induced by cardiac electrical
44 stimulation is always VT or VF. It always
45 occurs immediately after electrical
46 stimulation. In this case:

47

1 1) The time interval between the last CEW
2 probe discharge and Mr. Dziekanski's
3 loss of pulse (9 - 11 minutes) excludes
4 electrically-induced VF.
5

6 Would you agree with that, Doctor?

7 A Yes.

8 Q And then he refers to Doctor -- Mr. Enchelmaier at
9 point 2. He says:

10 2) Mr. Enchelmaier clearly describes a
11 pulse with normal rate and amplitude
12 (strength) for minutes after Mr.
13 Dziekanski lost consciousness.
14

15 I've read that to you.

16 A Yes.

17 Q The initial --

18 3) The initial firefighter AED record shows
19 that the initial cardiac rhythm was
20 asystole, not VF.
21
22
23

24 A Okay.

25 Q And asystole, as I understand it - and correct me
26 if I'm wrong - is flatline on the monitor; is that
27 -- is that your understanding?

28 A Yes. It's the absence of an electrical rhythm.

29 Q And VF, the heart, for a lack of a better term, is
30 functioning in a very chaotic state?

31 A Yes. It's a state where individual parts of the
32 heart muscle, the ventricles, contract at
33 different times. So in -- it's like a multi-oared
34 rowboat where each individual rower is rowing at
35 their own specific timing, whereas in a normal
36 rowboat, they should all be working in unison.
37 That's sort of the equivalent of ventricular
38 fibrillation is when each individual rower is
39 acting out of sync, basically.

40 Q Right. And to continue with the rowing analogy,
41 it's not like the beautiful set of 8's that we see
42 who are all timed in precision going quickly down
43 the lake?

44 A That's correct.

45 Q And then at point 4, Dr. Swerdlow says that:

46 4) The initial ECG recording from the LP-12
47

1 defibrillator also shows asystole,
2 excluding the diagnosis of VT or VF.

3

4 Would you agree with that, Doctor?

5 A I haven't seen the ECG recording, so I can't say.

6 Q I would like you to assume, for the purposes of
7 answering the question, that the life -- there is
8 evidence that the LifePak defibrillator showed
9 asystole upon -- immediately upon being hooked up
10 to the monitoring probe -- or the monitoring
11 patches on Mr. Dziekanski.

12 A Okay.

13 Q With that information in mind, would you agree
14 with point 4?

15 A Yes.

16 Q Then into "The pathological factors that caused
17 Mr. Dziekanski's cardiorespiratory arrest are
18 unknown," and he says this:

19

20 Shortly after being restrained, Mr.
21 Dziekanski lost consciousness while
22 maintaining a strong pulse and continuing to
23 breath. The cause of his loss of
24 consciousness is unknown.

25

26 Is that a fair statement, Doctor?

27 A Yes, I would -- yes, I would agree with that.

28 Q

29 Mr. Dziekanski's breathing became abnormally
30 shallow shortly before or about the time he
31 lost consciousness, yet he maintained a
32 normal pulse. The cause of this abnormal,
33 shallow breathing is unknown.

34

35 Would you agree with that, Doctor?

36 A Yes.

37 Q And then Dr. Swerdlow opines at 3 -- point 3:

38

39 Thus, Mr. Dziekanski probably stopped
40 breathing (respiratory arrest) before his
41 heart stopped beating (cardiac arrest).

42

43 What's your view on that statement?

44 A I can't really say much about that. It's possible
45 that he had a very slow rhythm to the point where
46 the heart was unable to adequately supply enough
47 blood to the body so that the heart didn't

1 necessarily stopped (sic) but it was beating at
2 such a low rate that it wouldn't adequately
3 provide enough blood to the organs. So, in that
4 sense, it could very well be that he was
5 functionally in cardiac arrest even though
6 technically there still may be some heartbeats.
7 He may still have been in a functional cardiac
8 arrest before he'd stopped breathing.

9 But again, it's pretty much all speculation
10 at this point to say exactly what happened first.
11 Q And it may be in point 4 as well, but let's look
12 at that.

13
14 Circumstantial evidence suggests that Mr.
15 Dziekanski had respiratory acidosis while he
16 was unconscious and may have had metabolic,
17 lactic acidosis.

18
19 And then he makes comments that I'm not going to
20 read to you, but you have read already.

21 A Yes.

22 Q Points (a) through(f). What can you inform Mr.
23 Commissioner about that position?

24 A Again, it's difficult to say for sure exactly
25 whether or not he was in fact acidotic at the
26 time. Clearly, once the person stops breathing,
27 he will, you know, by definition, go into
28 metabolic or respiratory acidosis.

29 The fact that he was in an active state in
30 the struggle meant that he was probably in a
31 lactic acidosis as well. I don't think his liver
32 -- liver changes would have significantly affected
33 his body's ability to clear the acidosis.
34 Unfortunately, such an acidosis can't really be
35 detected post -- post-mortem, especially in an
36 autopsy that's performed a couple of days after
37 death. So I can't confirm those findings.

38 Q Would it be fair to say this, Doctor Lee, that
39 this thesis also fits within this constellation of
40 factors that we were discussing this morning with
41 respect to the components of restraint associated
42 with sudden death?

43 A Yes.

44 Q You'll see, then, Doctor, at paragraph 5 on page 8
45 or point 5 on page 8:

46
47 Several factors probably contributed to Mr.

1 Dziekanski's cardiac arrest.

2

3

So there's an assumption there of an arrest.

4

5

These include:

6

7

(a) Respiratory acidosis and possible
respiratory arrest;

8

9

10

(b) Possible metabolic acidosis; and

11

12

(c) Underlying alcoholic cardiomyopathy.

13

14

And certainly with respect to (c), would you agree
with that?

15

16

A Yes.

17

Q And with respect to points (a) and (b), what would
-- what are your thoughts on those?

18

19

A Again, it's difficult to say whether the cardiac
arrest was due to the respiratory arrest or vice
versa. Again, the metabolic acidosis is another
possible factor in the physiological changes that
occur after a struggle. So, yes, those -- those
could have played a role, played a factor in his
death.

20

21

22

23

24

25

26

Q And again, forming part of this constellation of
factors that we're talking about.

27

28

A Yes.

29

MR. NEAVE: Mr. Commissioner, I'm in your hands with
respect to this document, if it might be marked
for the purposes of identification for now, and
then filed as an exhibit proper tomorrow.

30

31

32

THE COMMISSIONER: Yes, that's fine, for
identification.

33

34

35

THE REGISTRAR: It will be marked for identification
letter T.

36

37

38

T FOR IDENTIFICATION: Report of Dr. Swerdlow
of April 22, 2009

39

40

41

MR. NEAVE: Mr. Registrar, do you -- or, Dr. Lee, do
you have Exhibit 80, Dr. -- I'm going to pronounce
it wrong -- Plenennin's (sic) --

42

43

44

A Pollanen.

45

46

Q Pollanen's report?

47

A No, I do not.

MR. NEAVE: It's Exhibit 80...?

1 THE REGISTRAR: Eight-zero.

2 MR. NEAVE: Thank you.

3 A Thank you.

4 MR. NEAVE: Mr. Commissioner, have you a copy of that
5 exhibit? I have an extra.

6 THE COMMISSIONER: Yes, thank you.

7 MR. NEAVE:

8 Q Doctor, if I can start, please, on the third page
9 and -- would you be -- you know this doctor; is
10 that correct?

11 A Yes, I've met him before.

12 Q Can you tell Mr. Commissioner what you know of --
13 of his qualifications?

14 A He currently works at -- in Toronto at the Chief
15 Coroner's Office. He's the Chief Forensic
16 Pathologist there. He has -- Mr. -- Dr. Pollanen
17 has written several book on forensic pathology and
18 he's also done work outside of Canada,
19 specifically in East Timor regarding bodies -- war
20 crimes, essentially.

21 Q Did you train with Dr. Pollanen?

22 A At the time was in -- in Toronto, he was not -- he
23 was not a forensic pathologist at the time, but he
24 was in the process of training.

25 Q I want to start with the third page under
26 "Unifying Concepts".

27 A Yes.

28 Q Dr. Pollanen says this:

29

30 Some agitated people die suddenly and
31 unexpectedly when they are physically
32 restrained. Most of the time, the restraint
33 is applied by police officers and the person
34 is placed in the face-down or prone position.
35 Sometimes, the person is pepper sprayed or a
36 taser is deployed to subdue them, before
37 physical restraint. Such cases are among the
38 most difficult cases that a forensic
39 pathologist can encounter. The published
40 literature and current thinking about the
41 forensic pathology of restraint deaths can be
42 essentially reduced to four main issues:

43

44 First, and he bullets them:

45

46 • The restraint asphyxia-excited delirium
47 debate/spectrum

- 1 • Application of less-lethal force as potential
2 confounding variables
3

4 And then he says:
5

- 6 • Autopsy protocols are mandatory in restraint
7 deaths
8

9 And then he says:
10

- 11 • A larger view of restraint deaths is emerging
12

13 Do you agree with those unifying concepts, Dr.
14 Lee?

15 A Yes, I do.

16 Q Then, Doctor, I can take you to page 5. First
17 full paragraph:
18

19 My own view is that prone-position --
20

21 Are you with me?

22 A Yes.
23

24 -- prone-position restraint and excited
25 delirium are often cofactors in death. The
26 challenge is to develop satisfactory
27 diagnostic criteria for each, and then to
28 consistently apply the criteria between
29 cases. For example, it is unclear what the
30 lower limit of excited delirium is - could it
31 be an agitated state? Continued clarification
32 of the restraint asphyxia-excited delirium
33 problem will require a balanced approach to
34 the accruing evidence and research.
35

36 Do you agree with that statement, Dr. Lee?

37 A Yes. The problem with excited -- the problem with
38 diagnosing delirium in general is that it can be
39 quite difficult even in a hospital setting. The
40 biggest problem here is that the people who are
41 usually witnessing the event are non-medically-
42 trained; for example, bystanders or police
43 officers. So the information that I get is often
44 second-hand, and therefore it's difficult to know
45 exactly what the signs and symptoms are. So that
46 is one of the problems of trying to deal with
47 cases like this.

1 Q Is one of the other difficulties, Doctor, from
2 what you are saying and as Dr. Pollanen suggests,
3 at least to me, is that it's different -- it's
4 also very difficult to define the borderline
5 between highly agitated stress in a physiological
6 sense, and the phenomenon of excited delirium on
7 the other. Where do you cross over the line? Is
8 that a complicating factor?

9 A Yes.

10 THE COMMISSIONER: Doctor, I've understand what you've
11 said. Pardon me if I say to you that I didn't
12 quite read it like that. When he says:

13

14 For example, it is unclear what the lower
15 limit of excited delirium is.

16

17 He's not saying that the lower level could be an
18 aggravated state. He's saying that that is yet to
19 be determined.

20 A Yes, that's correct.

21 THE COMMISSIONER: All right.

22 MR. NEAVE:

23 Q Then in response to Mr. Commissioner's question,
24 Mr. Lee -- or Dr. Lee, is there a continuum from
25 agitation to extreme agitation to excited
26 delirium?

27 A That's hard to answer because -- I guess it
28 depends on how you define delirium. Delirium, as
29 I said, is difficult to diagnose because a number
30 of conditions can mimic delirium such as psychosis
31 and dementia. Therefore just -- basically you
32 cannot really diagnose delirium simply by
33 observing someone casually. Physicians would need
34 to have -- physicians would have to talk to the
35 individual and ask certain questions, trying to
36 elicit whether or not the person is aware and
37 oriented, as well as using laboratory tests and
38 physical examination of the individual to see
39 whether or not there is a condition that is
40 causing the delirium.

41 So it's -- so, in one sense, yes, there
42 probably is a spectrum of, you know, at what point
43 do you -- does a person become simply no longer --
44 simply agitated and actually becoming delirious
45 because a lot of that is a function of the
46 circumstances. For example, you know, someone who
47 is, you know -- a common example is traffic jam.

1 A person is stuck in a traffic jam for a couple of
2 hours, gets very irate and very angry and may
3 start to behave rather violently to passersby for
4 example. In that sense, in a clinical sense, the
5 response is not inappropriate. It may be
6 inappropriate in a social sense, but not in a
7 clinical sense, because it sort of makes sense in
8 the circumstances.

9 Someone who suddenly just starts, for no
10 apparent reason, starts acting oddly and behaves
11 oddly and, in response to questions, gives
12 nonsensical answers for example, that person could
13 be delirious and there could be a number of
14 reasons why. So it can be very difficult to know
15 when a person simply stops being agitated and
16 starts to become delirious.

17 Then the big question is: Does that really
18 matter in terms of death occurring during
19 restraint, whether the delirium is more important
20 or whether the agitation is more important?

21 Q Am I correct, Doctor, that there would be certain
22 physiological factors that would be present in
23 both persons who are severely agitated and in
24 persons who are actually suffering from excited
25 delirium?

26 By way of example, I'm thinking of the
27 superhuman strength issues, affinity to glass as
28 an example -- as but two examples.

29 A Yes, there are probably similar changes going on
30 in both cases. The other problem is that people
31 who are actually are delirious, they may also be
32 suffering an underlying medical condition or drug
33 intoxication that may make them more likely to
34 die, and therefore it really becomes a tough issue
35 in terms of how to deal with these individuals,
36 when all you know is that they are being
37 aggressive. It then becomes very -- like I said,
38 it becomes very difficult to try and determine
39 what the best course of action would be.

40 Q Now, Doctor, if I can cause you to go to page 10,
41 please, under "Discussion".

42 THE COMMISSIONER: I think, Mr. Neave, I have found
43 today to be very intense. We are at four o'clock,
44 so we will -- the hearing is adjourned till 10:00
45 tomorrow. For the convenience of the doctor, can
46 you give any indication as to how long you might
47 be?

1 MR. NEAVE: I expect I will be, at the most, 20
2 minutes. I think less than that, but that would
3 be maximum on my part.

4 THE COMMISSIONER: Anybody else? Can you give some...?
5 MR. ROSENBLUM: Probably approximately 20 minutes.
6 THE COMMISSIONER: Thank you so much.

7 MR. HARRIS: Approximately ten minutes.
8 THE COMMISSIONER: All right, well --

9 MR. HIRA: After the job that Mr. Neave has done, I'll
10 be no time.

11 THE COMMISSIONER: Well, that gives you some
12 indication, sir.

13 A Okay.

14 THE COMMISSIONER: Tomorrow at --

15 MR. MCGOWAN: Mr. Commissioner, I'm just -- I haven't
16 spoken with my colleague, but my understanding is
17 that we have a witness from out of town scheduled
18 to commence at ten o'clock tomorrow morning. I
19 wonder if we might attempt to see if we can make
20 alternate arrangements, but if necessary, we could
21 start perhaps a little bit early and we could
22 advise counsel through e-mail and you through Mr.
23 Registrar.

24 THE COMMISSIONER: So you're suggesting 9:30?
25 MR. MCGOWAN: Well, I don't know if that's -- causes a
26 problem for any of my friends. If it does, then
27 obviously that won't work. My concern is that we
28 have witnesses lined up to come by video
29 conference who are out of town, and I'm not sure
30 about their availability to move.

31 MR. NEAVE: Mr. Commissioner, I'm content with nine
32 o'clock if that suits your schedule. I appreciate
33 this is -- this is heavy going and it's important
34 evidence, so I'm in your hands.

35 THE COMMISSIONER: Well, counsel, I'll leave it to you.
36 MR. NEAVE: Yes.

37 THE COMMISSIONER: I'll be available. Let me know.

38 MR. MCGOWAN: Okay. I mean, the -- I think we're going
39 to -- I've just received word that the conferences
40 are set, one at -- starting at 10:00 and one
41 commencing immediately after lunch tomorrow, so I
42 wonder if it might not be a bad idea to start a
43 little bit early to see if we could conclude this
44 witness.

45 THE COMMISSIONER: All right. Doctor, we'll start at
46 9:00 --

47 A Okay.

Charles Lee

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

1 THE COMMISSIONER: -- and see if we can fit all this
2 in.

3 A All right, sounds good.

4 THE REGISTRAR: The hearing is now adjourned until 9:00
5 a.m. tomorrow.

6

7 (PROCEEDINGS ADJOURNED TO APRIL 28, 2009 AT
8 9:00 A.M.)

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