

Transcript of the Sheku Bayoh Inquiry

Thursday, 8 December 2022

(10.17 am)

LORD BRACADALE: Good morning. Before we hear from the next witness I wish to say something about the schedule of the Inquiry today.

This afternoon the Inquiry was scheduled to hear the playback of the further examination of Alan Paton by Senior Counsel to the Inquiry, in an examination I appointed in order to deal with the oral applications under Rule 9 of the Inquiry's rules.

Yesterday the legal representative of Mr Paton made representations in relation to the conditions in which the tape should be played. In order properly to consider these and bearing in mind the importance of this witness to the Inquiry, I would require a written application, together with supporting evidence.

In these circumstances I have continued the playback of the examination until a later date in order that I may consider any such application.

I acknowledge that the late change may cause inconvenience to members of the public who wanted to watch the evidence, but sometimes changes do have to be made at short notice.

Could we have the witness, please.

MS MITCHELL: (Mic turned off).

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1 LORD BRACADALE: Yes, certainly.

2 (10.20 am)

3 (Short Break)

4 (10.41 am)

5 LORD BRACADALE: Mr Ryder, I'm sorry you have been kept
6 waiting.

7 MR PAUL RYDER (sworn)

8 LORD BRACADALE: Ms Grahame.

9 Questions from MS GRAHAME

10 MS GRAHAME: Thank you.

11 Good morning. You are Paul Ryder.

12 A. That's correct, yes.

13 Q. And what age are you, Mr Ryder?

14 A. I'm 54.

15 Q. You are a reporting scientist with Cellmark Forensic
16 Services?

17 A. I am, yes.

18 Q. And you are based in their premises in Chorley in
19 England?

20 A. That's correct, yes.

21 Q. Thank you. I was watching a documentary recently on the
22 TV and it showed Cellmark's premises and it said they
23 had been involved in the World's End murders, looking at
24 DNA and at the forefront of forensic science and
25 improvements. Is that the place that you work?

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1 A. It is, yes.

2 Q. And tell us a little bit about Cellmark, please.

3 A. Cellmark is a privately owned company that started off
4 as a specialist DNA company and has expanded into doing
5 a whole range of forensic science. It is contracted to
6 a number of police forces across the United Kingdom and
7 around the world to carry out forensic work on their
8 behalf.

9 Q. And it's not just police forces that you work for, or do
10 work for, it's the Crown Prosecution Service?

11 A. Well, we serve the criminal justice system, so we will
12 then do work on behalf of the Crown Prosecution Service.

13 We can be asked to undertake independent reviews on
14 behalf of the defence in criminal trials, or -- and we
15 undertake work sometimes in civil cases as well.

16 Q. So it's the whole justice system really.

17 A. Yes.

18 Q. Thank you. Before I take you through your evidence
19 today, you will see that there is a blue folder in front
20 of you.

21 A. Yes.

22 Q. And if you please feel free to open that up and what
23 seems to be in it is a letter of instruction that you
24 were sent, an appendix of documents you were sent and
25 a report that you prepared on behalf of the Inquiry.

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1 A. Yes.

2 Q. So as we go through things today you will see on the
3 computer screen in front of you that we maybe put things
4 onto the screen so that they can be viewed around the
5 room and more widely by the public, but in addition you
6 will always have your hard copies there, so if you need
7 to look at anything, if you want another paragraph
8 shown, please just let me know and we can have that
9 brought up on the screen.

10 A. Okay.

11 Q. Okay. Can we talk first about your own CV --

12 A. Okay.

13 Q. -- and a good place to start might be your report which
14 is SBPI00171 and if we can bring that up on the screen
15 and you will see the front page:

16 "Cellmark Forensic Services.

17 "Tread analysis report, Sheku Bayoh Inquiry." An.

18 And then that's your name and "Reporting Scientist,
19 Cellmark...", and it is dated 6 October this year.

20 A. Yes.

21 Q. And if we could turn to page 3 please we should see your
22 qualifications and experience.

23 Now, I won't go through this line by line. The
24 Chair will have that available to him to consider at his
25 leisure, but am I right in saying you've got a first

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1 class honours degree in chemistry?

2 A. I have, yes.

3 Q. And you're a chartered chemist.

4 A. Yes.

5 Q. What does that mean?

6 A. I'm a member of the professional body, the Royal Society
7 of Chemistry, and as a result of that I have
8 professional qualifications as a chartered chemist.

9 Q. Right. So is that an additional qualification that you
10 have achieved?

11 A. Yes, it's in recognition of ongoing professional work in
12 the field of chemistry.

13 Q. Thank you. And you have been employed as a forensic
14 scientist for over 33 years.

15 A. That's correct, yes.

16 Q. Initially by the Forensic Science Service and latterly
17 by Cellmark, since August of 2008.

18 A. That's right, yes.

19 Q. And although you are here today as a skilled witness, as
20 an expert witness on our behalf, you are still
21 practising as a forensic scientist.

22 A. I am, yes.

23 Q. So you're doing the analysis and the work as well as
24 being an expert.

25 A. Yes.

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1 Q. And it says here on page 3 you also hold the role of
2 forensic science manager at the Chorley lab of Cellmark
3 forensic science.

4 A. That's correct, yes.

5 Q. What does that involve?

6 A. It's an overseeing role in terms of the quality of the
7 science that we undertake, balanced against operational
8 needs, so it's looking after the quality of the work
9 that's done, making sure that we comply with the
10 relevant accreditation and regulations and making sure
11 that all the staff are appropriately trained and
12 competent to undertake their work and maintain that
13 competence.

14 Q. And do you have a responsibility to check the work of
15 more junior members of staff and make sure they're doing
16 things to a suitable standard?

17 A. All our work that we undertake is peer-reviewed, so my
18 work would be peer-reviewed by a second individual, so
19 it's not necessarily someone that's more junior, it's
20 someone that carries out the same type of work that you
21 do and you carry out an independent review of that work
22 before any reports are issued.

23 Q. And for members of the public that may be listening to
24 you that aren't familiar with the term "peer review",
25 can you explain a little bit more what that is.

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1 A. Effectively, your work is checked by another expert in
2 your area of expertise and all your findings will be
3 critically checked, your statement will be reviewed --
4 not just for spelling errors and the like, but to make
5 sure that interpretation is correct and all the details
6 are correct before the statement is issued.

7 Q. And does that provide a level of reassurance that the
8 work has been done properly and accurately?

9 A. Yes.

10 Q. Thank you. We heard some evidence on Tuesday from
11 a Professor Lorna Dawson. Are you familiar with
12 Professor Dawson?

13 A. I met her when we were undertaking examinations, yes.

14 Q. She said that in Chorley they have a number of sterile
15 labs and different labs to carry out work to ensure that
16 there's no cross-contamination, is that correct?

17 A. That's correct, yes. We do a lot of trace evidence work
18 and depending on the nature of the work we have
19 different anti-contamination procedures, so we will have
20 GSR -- sorry, gunshot residue clean laboratories, we
21 have DNA clean laboratories and then we have protocols
22 in all the other laboratories to prevent contamination
23 occurring.

24 Q. So are there a lot of safeguards in place to make sure
25 that everything is sterile and there's no

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1 cross-contamination from one item to another?

2 A. That's correct, yes.

3 Q. And those safeguards were in place when you did the work
4 for the Inquiry?

5 A. Yes.

6 Q. Thank you. And your CV also mentions that you are
7 responsible for defining and maintaining in the lab
8 standard operating procedures for Cellmark and
9 overseeing the validation of those methods, resulting in
10 their accreditation by the forensic regulator.

11 A. That's correct, yes.

12 Q. What does that mean?

13 A. The forensic regulator has a code of conduct, practice
14 and conduct, which all forensic science providers in
15 England and Wales are expected to adhere to, which
16 requires us to have UCAS accreditation, so as part of
17 that, any methods that we use have to be suitably
18 validated and the evidence provided, so it can be
19 independently reviewed by UCAS and as part of that we
20 have training plans, we have training and competency
21 monitoring systems, we have standard operating
22 procedures, all of which are reviewed regularly to keep
23 them up-to-date and to make sure that there is a process
24 of continuous improvement.

25 Q. And so everything is checked and double-checked really?

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1 A. Yes.

2 Q. And then it also says:

3 "As well as undertaking work for law enforcement
4 agencies, I have also been instructed as an expert in
5 a number of civil cases and undertaken defence reviews
6 of forensic evidence."

7 Can you tell us a little bit more about your work as
8 an expert witness.

9 A. It involves on some occasions going out to scenes,
10 helping to gather evidence at scenes before it is
11 actually submitted to the lab. It involves managing the
12 examinations, making sure that all the essential
13 evidence is captured and that there is no possible
14 contamination of that as part of the processes because
15 some of the examinations we might undertake might impact
16 on other people's work and the recovery of their
17 evidence, so a strategy is evolved. The examinations
18 are done, the findings are then interpreted, then
19 they're critically checked and then a report is issued,
20 and then ultimately, if required, we attend court to
21 give evidence as an impartial expert witness to
22 the court.

23 Q. And you have given evidence before court or Inquiry
24 proceedings before, haven't you?

25 A. Many times, yes.

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1 Q. And am I right in saying the other thing that you
2 mention in your CV is that recently you have given
3 evidence in the investigation of the Manchester Arena
4 bombing?

5 A. I did, yes.

6 Q. And you had to present evidence at the Inquiry and you
7 have also presented evidence at the criminal trial?

8 A. I did, yes.

9 Q. Thank you. And you mentioned the word "impartial" and
10 is it correct to say that as an expert witness you
11 understand your obligations are to the Chair --

12 A. Yes.

13 Q. -- and the Assessors --

14 A. Yes.

15 Q. -- and that you have to be impartial and objective in
16 your approach?

17 A. Yes.

18 Q. Thank you. I would like to move on to your involvement
19 with the Inquiry, if I may. The Inquiry, I believe,
20 contacted you earlier this year to see if you would be
21 able to carry out some work for us in relation to the
22 Sheku Bayoh Inquiry?

23 A. That's right, yes.

24 Q. And we checked to see whether you were conflicted in any
25 way, so to see if you had been involved in any

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1 connection with Sheku Bayoh's death at any time?

2 A. That's right, yes.

3 Q. And there was no conflict.

4 A. There was no conflict, no.

5 Q. Can we look at your letter of instruction please,

6 SBPI00161. So this is dated 27 July 2022. You will see

7 it on the screen and you've got your hard copy in front

8 of you and without going through this in too much

9 detail, as we go through the letter -- if we could maybe

10 go up, that's fine. You were given some background

11 about the circumstances of the death of Mr Bayoh --

12 A. I was, yes.

13 Q. -- and the Terms of Reference of the Inquiry.

14 A. Yes.

15 Q. And you were -- it was explained to you that any report

16 that you did produce would be made available to core

17 participants and their lawyers.

18 A. Yes.

19 Q. And that you would be asked to give oral evidence at

20 this hearing.

21 A. That's correct, yes.

22 Q. And you were sent documents and productions and we will

23 actually see those on -- in your report, which we will

24 come back to in a moment, and was it explained to you --

25 if we can move down the page please. We will see the

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1 documents mentioned and then the instructions come up
2 and we will just leave those on the screen for a moment.

3 Was it explained to you that the Chair of this
4 Inquiry would have to be considering evidence about
5 whether or not Mr Bayoh had stamped on the back of
6 a female officer as she lay on the ground and there were
7 issues in relation to that and your report would be
8 sought to assist the Chair in making that decision?

9 A. That's right, yes.

10 Q. And you were asked to examine a vest --

11 A. Yes.

12 Q. -- and some boots that had been taken from Mr Bayoh.

13 A. Yes.

14 Q. And some boots that had been taken from a PC Walker.

15 A. I was, yes.

16 Q. And you were also sent some photographs of these items.

17 A. Yes.

18 Q. And you were asked to compare the tread on the boots, or
19 the sole, the tread --

20 A. Yes.

21 Q. -- underneath the boots and look at some marks that were
22 said to be on the vest.

23 A. That's right.

24 Q. Lovely. Can I have a look at the appendix that was
25 sent, along with the letter -- or shortly after the

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1 letter, SBPI00163.

2 And if we just very quickly look at that, we can see
3 the physical items listed: the boots, the vest and
4 something called "Left Boot Lift" and a "Right Boot
5 Lift"?

6 A. Yes.

7 Q. Were those acetates of -- or lifts?

8 A. From what I can recollect, they were photocopies of
9 them.

10 Q. Photocopies.

11 A. So they would have originally been an acetate lift, as
12 I understand it, but I was presented with a photocopy
13 from what I can recollect.

14 Q. Okay, and then we see that you were also given notes of
15 an examination that had been carried out of the items by
16 the Scottish Police Authority Forensic Services.

17 A. I was, yes.

18 Q. And you were sent their report as well.

19 A. Yes.

20 Q. And photographs of the items and then also statements
21 and transcripts from Laura MacPhie, Shirley Chin and
22 Alison Marven.

23 A. I was, yes.

24 Q. And then we have heard reference with other expert
25 witnesses to Part 35 and is that a summary of the

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1 obligations on experts comes from England?

2 A. Yes, it is.

3 Q. And if we could just move up slightly, can I ask you to
4 look at some items please, which will be held in
5 a drawer. I would like to begin with Mr Bayoh's boots
6 and I would really just like you to confirm that those
7 are the items that you have looked at. So we've got
8 Mr Bayoh's boots, PC Walker's boots and the vest.

9 A. These are the items I examined, yes.

10 Q. And the vest as well?

11 (Pause).

12 Was that --

13 A. Those were the boots of PC Walker.

14 Q. The boots of Walker.

15 MS WILDGOOSE: The vest as well?

16 MS GRAHAME: Yes, please.

17 A. Yes, that's the item I examined.

18 Q. So that's the vest, Mr Bayoh's boots and PC Walker's
19 boots.

20 A. That's correct, yes.

21 Q. Thank you. Thank you very much. Sorry, I should have
22 done that more slowly, it might have been easier.

23 Can we look back at your report, please, which is
24 SBPI00171. Is it fair to say, before we go to the
25 detail, Mr Ryder, that this is an accurate summary, your

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1 summary of everything you have done for the Inquiry?

2 A. It is, yes.

3 Q. Yes, and if the Chair wishes, he can read further detail
4 within the body of this report.

5 A. Yes.

6 Q. Thank you. If we could move to page 6 please. We will
7 see that there's a heading "Technical Notes" and there
8 are eight paragraphs that explain the basis on which you
9 proceeded and it covers a couple of pages, pages 6 and
10 7, and I'm going to take you through these in turn, if
11 I may.

12 So, we will begin with paragraph 8 and you say that:

13 "When an item of footwear comes into contact with
14 a surface a mark is often left. This may be in the form
15 of material transferred from the under surface of the
16 shoe or as a result of the shoe removing material from
17 that surface. If there is sufficient contrast between
18 the surface and the material deposited or removed, then
19 the mark produced may be readily visible."

20 Tell us what you mean by "sufficient contrast"?

21 A. It basically means that there is a difference in the
22 material that's deposited and the background,
23 effectively if you walked across a black floor and left
24 a black deposit, it would be very difficult to see,
25 whereas if you walked across a black floor and left

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1 white deposits, they would stand out and be readily
2 visible.

3 Q. Thank you. You then go on to say:

4 "If there is limited or no contrast then processes
5 or treatments are required to assist in visualising any
6 marks that might be present."

7 Explain what you mean by that.

8 A. We consider -- we can consider a surface -- for example,
9 if we were to go to a scene of an incident and we were
10 asked to examine a floor for footwear marks we would
11 first do a visual examination to see if there was
12 anything obvious that was standing out and then we would
13 process those and we would then go through a systematic
14 process of examining the floor using, initially,
15 lighting techniques, using lighting from different
16 directions to see whether that introduces contrast
17 because you can have a floor where you can't actually
18 see a footwear mark because it is dusty on a floor,
19 whereas if the lighting was to be changed and you then
20 shone a light at an angle, a very low angle across it,
21 it would highlight dusty marks really well, even on
22 a floor that you couldn't see previously.

23 There was -- going back to an incident I worked on
24 in Manchester, we had been looking at marks throughout
25 an address and it had gone dark and we were going to

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1 come back to do the kitchen the following day and we
2 hadn't seen any visible marks, but because it had gone
3 dark and we shone a torch across the floor, the whole
4 floor lit up with dusty footwear marks, so we knew we
5 had a big job the next day.

6 Q. Right. So even marks that are not visible to the naked
7 eye, you have techniques that allow you to see those.

8 A. Yes.

9 Q. And that would allow you to see both any marks that are
10 visible and those invisible to the naked eye marks.

11 A. Yes.

12 Q. Thank you. And when you're carrying out your
13 assessments, you are looking for both, the visible and
14 the invisible?

15 A. Yes.

16 Q. Thank you.

17 A. Quite often the marks that you can't actually see are
18 the ones that will contain the most detail that will
19 then provide you with the strongest conclusion in
20 relation to linking an item of footwear.

21 Q. Thank you. And then if we can move on to paragraph 9,
22 you comment there about the many different types of
23 footwear. How does that help you in your job?

24 A. Well, there are many different shoe manufacturers that
25 produce a whole range of different patterns. I mean if

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1 you consider Nike and Adidas shoes, they produce
2 thousands of different tread patterns over the years,
3 which are all distinguishable from each other, so you've
4 got a basis on which to do an initial basic comparison,
5 in that you can look at a pattern and you can say that
6 it is a mark of a particular brand, or a particular
7 pattern from that brand.

8 Q. And then in paragraph 10 you mention the significance of
9 changes when shoes or footwear are worn and become worn
10 in areas. Could you explain that?

11 A. Well, a shoe, from the minute it comes out of the box to
12 when it's eventually thrown away, is going to be
13 continually changing on its undersurface because the
14 process of walking erodes the soles and that introduces
15 character to the undersurface of the shoes in terms of
16 the pattern, of the wear, the amount of tread that
17 remains on it, whether it's -- the tread's been worn
18 away completely. It also introduces features of
19 characteristic damage as a result of the shoe becoming
20 cut from sharp stones. You can get highly
21 characteristic wear patterns as the rubber abrades at
22 a microscopic level, so as the shoe alters it takes on a
23 unique character.

24 Q. How does that help you in your work?

25 A. Well, we consider -- we consider the class

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1 characteristics, which are basically whether the shoe is
2 of the right pattern, is it of the right size. We then
3 look at the general wear to see whether it's worn to
4 a similar general extent and then we will look to see if
5 there are any features in the mark which we consider to
6 be characteristic and specific to that shoe, which would
7 then allow us to form a strong, if not conclusive,
8 conclusion in relation to whether that shoe has made the
9 mark or not.

10 Q. Can we look on to page 7 and paragraph 12. You talk
11 about when it is just not possible to exclude an item of
12 footwear from having made a mark and a conclusive link
13 hasn't been established. Maybe I could read this out
14 and then ask you some questions about it:

15 "When it is not possible to exclude an item of
16 footwear from having made a mark and a conclusive link
17 has not been established it is possible to assess the
18 significance of the findings to form an opinion as to
19 how likely it is that the shoe in question has or has
20 not made the mark."

21 Could you explain that in a little more detail?

22 A. Well, if we have a conclusive link that shoe has
23 definitely made the mark. If we haven't got sufficient
24 character within the mark to allow us to form that
25 opinion, we then consider the likelihood it was that

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1 shoe that made the mark as opposed to it being made by
2 another shoe, so we take into account the size,
3 factors -- the wear factors, how much discrimination can
4 be achieved based on those features that we're seeing
5 and whether there are any features there that are
6 detracting from the significance of the findings which
7 might tend to suggest it's not that shoe, as opposed to
8 pointing to the conclusion that the support for the view
9 that it has made that mark.

10 Q. So if someone has worn shoes for a while and you talked
11 about standing on stones, maybe a stone has left a hole,
12 that character could provide a conclusive link?

13 A. Yes, if it's sufficient character, yes.

14 Q. In the absence of that, if it's simply a new pair of
15 shoes then it could be the same as a number of new pair
16 of shoes from a particular brand?

17 A. Yes.

18 Q. And you won't be able to provide a conclusive link?

19 A. Not a conclusive link, but there are features that you
20 can observe that will allow you to distinguish between
21 two shoes that look effectively the same. You could
22 have two shoes produced by the same manufacturer with
23 the same pattern and be of the same size, but the
24 footwear has actually come out of a different mold and
25 would have different characteristics that would manifest

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1 itself in the mark that relates to the mold, but it
2 still could be that any other shoe that came out of that
3 specific mold, could have made that mark as well.

4 Q. So even very small fine differences of detail will be
5 observed by you and noted.

6 A. They can be if it's in the mark, yes.

7 Q. So if there are those details, you will note them down?

8 A. Yes.

9 Q. Thank you. Then you say:

10 "In assessing the significance of any
11 correspondences or differences found between a shoe and
12 a mark resulting from a comparison, the likelihood of
13 obtaining the observed correspondences or differences
14 are considered against two alternative propositions ..."

15 I would quite like you to explain this, please, so
16 that people can understand what you're saying.

17 A. What we're doing is we're considering the likelihood of
18 our observations and findings, given one proposition
19 that the shoe had made the mark, so we consider all the
20 findings against that proposition. We also then
21 consider the findings against an alternative,
22 effectively completely opposite proposition that the
23 findings have arisen as a result of the shoe not having
24 made that mark and you weigh those up based on your
25 experience and knowledge and the information available

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1 to you to see which you, as an expert, think is the more
2 likely to explain the findings that you have.

3 Q. And so that's the propositions that you list in
4 paragraph 12.

5 A. That's correct, yes.

6 Q. First of all, (a):

7 "The shoe in question has made the mark it has been
8 compared with."

9 A. Yes.

10 Q. And you're looking for similarities or areas where you
11 can see there's a consistency.

12 A. Yes.

13 Q. And (b):

14 "The shoe has not made the mark."

15 And that's the other proposition, you say "This shoe
16 hasn't made this mark, what are the differences?"

17 A. It's not necessarily the differences, it's also the
18 likelihood of a coincidental correspondence, if there
19 may be another shoe that shares the same
20 characteristics. What's the likelihood of another shoe
21 sharing the same characteristics that you're seeing in
22 that particular mark as well.

23 Q. Right, thank you.

24 Then paragraph 13:

25 "The strength of the assessment of the footwear mark

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1 evidence is normally expressed as a level of support for
2 one or other of the above two propositions."

3 Could you explain that?

4 A. We have a verbal scale which we apply to that in terms
5 of there is: weak support, moderate support, moderately
6 strong support, strong support and then it goes up
7 through very strong and extremely strong support and
8 it's an approach which attempts to introduce some
9 consistency into which way people express their
10 conclusions.

11 Q. Thank you. And:

12 "The assessment is based on the observations made
13 during the comparison and the experience of the examiner
14 and any data that may be available to compliment the
15 assessment of the findings."

16 A. That's correct, yes.

17 Q. And when you say that at the end, "the data that's
18 available", is that information that's provided to you
19 or gathered in by you at a scene?

20 A. And it goes beyond that in the wider information in
21 terms of information we know about the manufacture of
22 shoes, those particular shoes that we're considering,
23 how frequently that type of shoe is encountered. It may
24 be that we get sales information from manufacturers that
25 help us to say how common a particular shoe might be

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1 amongst the market and it's all the background
2 information around that, plus the experience of the
3 actual examiner from carrying out these examinations.

4 Q. And are you gathering in that information from
5 manufacturers or sellers and such-like?

6 A. We collect information about the frequency of occurrence
7 that we encounter footwear generally, but on occasions
8 we may go beyond that, depending on the nature of the
9 case. There may be occasions where we actually go and
10 do the enquiries, or the police would do that on our
11 behalf.

12 Q. Thank you. Then in paragraph 14:

13 "In order to form a view the examiner of the mark
14 ... must have confidence that the pattern elements that
15 they are considering can be attributed to footwear of
16 the pattern type in question and relies on any
17 correspondences or differences in the spatial
18 arrangement and definition of other parts of the mark
19 surrounding each considered feature. In instances where
20 the considered mark is so poorly defined that it cannot
21 be established that the mark relates to an item of
22 footwear of that pattern type and/or it is not possible
23 to discern whether it has been made by an alternative
24 item, the mark(s) are considered to be unsuitable for
25 comparison."

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1 Now, I wonder if we can just go through this
2 paragraph. You say that:

3 "In order to form a view the examiner of the marks
4 must have confidence that the pattern elements that they
5 are considering can be attributed to footwear of the
6 type in question."

7 What do you mean "must have confidence"?

8 A. It's your observation in that you -- it needs to be
9 clearly defined, or sufficiently defined, for those
10 features to be discerned and to be seen. If the mark is
11 very poorly defined you may not have that character
12 showing through. You can have a mark that's been made
13 by a shoe, that's been deposited on a surface and
14 because it's so smudged you can't actually see the
15 pattern elements that are present on the shoe that had
16 made the mark. You can be confident it's been made by
17 a shoe because of the shape of it, but there's nothing
18 there which would allow you to say "Well, it's an Adidas
19 shoe, or it's a Nike shoe, or it's a Doc Marten" or
20 something like that because there's just no features
21 within the mark that would allow you to form that
22 opinion.

23 Q. And what can cause a mark to be poorly defined?

24 A. It can be the way that it's made, the nature of the
25 substrate it has been deposited on.

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1 Q. Sorry, the nature of what?

2 A. The substrate that it's been deposited on.

3 Q. Is that the substance?

4 A. Yes, if it's a smooth surface it would be expected to
5 take an impression with more detail, whereas if it's
6 a textured surface there's obviously raised parts of the
7 surface and those are the parts that will only come into
8 contact with the shoe.

9 There's also how much the shoe would move at the
10 time it is making the mark, whether it slips as it
11 deposits it, the nature of the material and the amount
12 of material that might be on the shoe at the time. All
13 these things are factors which could influence how well
14 defined a mark might be, or how poorly defined it might
15 be.

16 Q. And could it also be the force with which the contact is
17 made?

18 A. That can also -- the way -- the appearance of the mark.
19 It can impart features which look like the shoe is
20 actually more worn than it actually is, because you have
21 increased the amount of pressure that's applied. Plus
22 because it's a dynamic process the shoe can move as
23 a result and smudge and smear as a result of that and
24 obscure any detail that might otherwise have been there.

25 Q. Thank you. And then you go on to say -- sorry, in the

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1 same paragraph, 14, that this:

2 "... relies on correspondences or differences in the
3 spatial arrangement and definition of other parts of the
4 mark surrounding each considered feature."

5 I wonder if you could explain what that means.

6 What's a spatial arrangement?

7 A. Well, each undersurface pattern has a number of pattern
8 elements and they are spaced out at set margins and that
9 will be dependent on the size of the shoe, but what you
10 would consider is that if you've got part of one feature
11 here that relates to a particular shoe, is the next
12 pattern element in the right place next to it, or is it
13 further away, or is it present at all, or is it not? So
14 you're not just considering one feature, you're
15 considering whether there's all the surrounding features
16 appearing in there as well, or indications of those
17 features, or an absence of them, so you're sort of
18 taking a whole picture. I'm not sure I have explained
19 that very well, but --

20 Q. No, but if, for example, you had a shoe with diamonds or
21 pyramid shapes on it in an even pattern, would you be
22 looking for a consistency among that, as a spatial
23 arrangement?

24 A. You would be looking to recognise the rest of the
25 pattern. You wouldn't just be identifying single

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1 features. You would be looking at the pattern as an
2 entirety and then once you have identified that there is
3 a pattern there that you're considering, whether the
4 pattern elements are the right spacing, or whether
5 they're the right shape and features like that.

6 Q. So if the tread of the shoe had, for example, eight
7 shapes on it and you could only see one, would that
8 cause you a difficulty in your job?

9 A. If you could be satisfied that it was that particular
10 shape and it had a well-defined outline and there was
11 detail within it, such as a unique characteristic
12 feature, you could form an opinion that was conclusive
13 based on a relatively small area of a mark, but if you
14 can only see such an element, or what might be
15 an element and there's nothing surrounding it and you
16 can't be 100% certain that you've got definite outlines
17 and it's a definite shape, you have to be much more
18 cautious in your approach to the opinions you might
19 draw.

20 Q. So would this impact on the confidence that you mention
21 in line 1 of paragraph 14?

22 A. Yes. I mean, if you can see it's definitely a square
23 and it's a square block you can say it's definitely
24 a square block. If it's just a smudge with no character
25 and perhaps one straight line associated with it and

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1 a bit of a smudge around it, you can't be satisfied that
2 that's a square block.

3 Q. So you wouldn't be saying it's definitely not the same,
4 you just can't --

5 A. There's just no --

6 Q. -- be confident?

7 A. There's just insufficient character for us to undertake
8 a meaningful comparison and to take the examination
9 forward.

10 Q. Thank you. And so at the end of this paragraph where
11 you said "unsuitable for comparison", let me just read
12 that sentence again:

13 "In instances where the considered mark is so poorly
14 defined that it cannot be established that the mark
15 relates to an item of footwear of that pattern type
16 and/or it is not possible to discern whether it has been
17 made by an alternative item the marks are considered to
18 be unsuitable for comparison."

19 And is that when you simply can't carry out that
20 comparison with confidence?

21 A. That's right, yes. You look at the mark and there's no
22 indication or information in there to say is it
23 a shoe -- is it this shoe, is it another shoe, is it
24 a shoe at all? You know, so if you're presented with
25 that situation there's just nothing for you to compare

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1 as an expert and to give an opinion on.

2 Q. So there may be all sorts of possibilities, but in your
3 role as an expert you wouldn't want to speculate on
4 those?

5 A. No.

6 Q. Thank you. Can we move on please to the next page,
7 page 8. We see here that it says:

8 "Examination and Results.

9 "Examination of the boots of Sheku Bayoh."

10 And this is covered in paragraphs 15 to 19 of your
11 report. I wonder if you could just give a summary of
12 how you carried out your examination of the boots.

13 A. Okay. Well, initially we set a strategy to ensure that
14 our examination didn't impact on the other examinations
15 that were going to be undertaken, namely those
16 undertaken by Dr Lorna Dawson, so those were initially
17 undertaken under her direction, to recover all the trace
18 evidence from the boots before I even examined them.

19 Following that process, we produced -- or we
20 examined the boots to identify the pattern type, the
21 size of the shoes, the condition of them. We then
22 produced what we would call "test marks", which is
23 effectively producing footprints with the shoes and
24 developed those and then used those to form and make
25 transparencies which we would then use as part of the

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1 comparison process with any marks we might have.

2 Q. I would like to take you through this a little bit more
3 slowly, if that's possible.

4 A. Yes.

5 Q. So you have mentioned Professor Dawson. We heard from
6 her on Tuesday.

7 A. Yes.

8 Q. And she said that:

9 "In any investigation where [that] involves multiple
10 forensic sciences then it's very important that they're
11 done in the most appropriate sequence of analysis."

12 From her part, in the recovery of soil, she said:

13 "... the part that I would take to recover the
14 samples that I was to look at, involves removing [that]
15 ... , so removing soil or any other trace material from
16 the vest [and] that would mean that any potential mark
17 would be affected by the removal of the soil, so -- on
18 the other hand, it wouldn't affect my recovery at all,
19 [but] the work that would be done to examine the trace.
20 So the priority order was the examination of the marks
21 and then [the] recovery of the soil."

22 And it was asked:

23 "Question: If you had done your work first is there
24 a possibility that it might have got in the way of
25 Cellmark's own analysis?"

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1 And she said:

2 "Answer: It might have affected the quality of the
3 marks that they were to examine."

4 Do you understand --

5 A. In relation to the vest that is true because if you're
6 removing material, you're removing material that is
7 forming part of the marks, so in relation to the marks
8 we did the examination first and made sure we got a full
9 record of anything that was present on the vest before
10 Dr Dawson did her examination of the vest, but in
11 relation to the boots, because we had to make test
12 impressions with the boots that could potentially remove
13 the evidence that she wanted to look at from the boots
14 themselves during that process, so in that case we set
15 the strategy to recover that material before we made the
16 test marks.

17 Q. So Professor Dawson recovered her material from the
18 boots first --

19 A. Yes.

20 Q. -- to give her the best results of what she was doing --

21 A. Yes.

22 Q. -- and, in relation to the vest, she delayed recovering
23 the substance until you had had your opportunity to
24 consider it.

25 A. That's correct, yes.

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1 Q. Thank you. And it was done that way because the order
2 in which things can be done can have an impact on the
3 people coming after you.

4 A. It can, yes.

5 Q. Thank you. Were you aware that the Scottish Police
6 Authority Forensic Services had carried out examinations
7 prior to you and Professor Dawson?

8 A. I was, from the documents that have been provided, yes.

9 Q. Yes.

10 We also asked Professor Dawson about the period of
11 time between the events, which was 2015, 3 May, and her
12 examination and I would be interested in any comments
13 you have, Mr Ryder, about the period of time between
14 3 May 2015 and when you carried out your examinations
15 for the purposes of this report.

16 Professor Dawson said the minimum time period for
17 the integrity of the item is the shortest period at all
18 possible and to have that being witnessed so the least
19 could have occurred to that questioned item in the
20 intervening time, that's the ideal situation. Would you
21 agree that the minimum period of time between the events
22 and the examination is the ideal situation?

23 A. Yes, in an ideal world you would want to be doing your
24 examinations as soon as you can, but you have to
25 prioritise according to the strategy in relation to

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1 everything else, so it comes at the point where it needs
2 to come.

3 Q. Right. So then can we move on, please, to paragraph 18.

4 When you examined the boots you noted that:

5 "The under surfaces or soles of the boots bore
6 a complex pattern comprising a central arrangement of
7 pairs of triangle surrounded by chevron shaped blocks."

8 And:

9 "The under surfaces were relatively well worn with
10 some areas of the soles being worn to the extent that
11 the lattice of the mid-sole was visible in the copies of
12 the marks provided to me that had been prepared by
13 Scottish Police Authority Forensic Services."

14 I wonder if I could ask you to look at some items
15 please, SPA00024 and SPA00025. So we have heard
16 evidence about these items -- sorry. So, this is
17 SPA00024. This is a right boot acetate that we have
18 heard evidence about previously and I just wonder if, as
19 we look at that picture, if you could maybe point out
20 the areas that you're describing in paragraph 18, so the
21 "complex pattern with the central arrangement of pairs
22 of triangles surrounded by chevron shaped blocks".

23 A. Yes.

24 Q. And I should say -- and I wasn't planning on doing this
25 with you, but it may be easier, if you touch the screen

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1 at any point a red circle can appear, if that makes life
2 easier in terms of describing.

3 A. Okay.

4 Q. If you get it in the wrong place you can put your finger
5 back on it and drag it, or we can have Ms Wildgoose
6 remove it if that's easier.

7 A. That is one of the pairs of central triangular blocks
8 (indicating) which are across the sole and there are
9 also two further pairs in the heel.

10 These (indicating) --

11 Q. Those are the chevron shaped blocks that you mentioned.

12 A. Chevron shaped blocks, yes.

13 Q. And you mention triangles, are they made up of two
14 triangles?

15 A. Yes, that's circle number 1.

16 Q. And what's 2?

17 A. 2 is the chevron blocks or -- well, it's covering part
18 of the chevron block, but each of those up the inner and
19 outside are what I'm describing as chevron shaped
20 blocks.

21 Q. Oh. So, the pairs of triangles are number 1?

22 A. Yes.

23 Q. And 2 are the chevron shaped blocks?

24 A. Yes, it's a representation of one of them, yes.

25 Q. And it says:

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1 "The under surfaces were relatively well worn with
2 some areas of the soles being worn to the extent that
3 the lattice of the mid-sole was visible in the copies of
4 the marks provided to me."

5 Could you explain what you're describing there?
6 What's the "lattice of the mid-sole"?

7 A. Well, the outside of the sole has the pattern on it, but
8 there's actually an inner part which is basically
9 a lattice pattern which the inserts, or the insole, will
10 sit on top of within the shoe, so if you were to peel
11 the insole up you would be able to see the top of the
12 sole itself and quite often that will have a lattice
13 pattern on it and if we just -- sorry, I'm putting
14 circles --

15 Q. We can take those away or we can --

16 A. If you can take 3 and 4 away.

17 Q. I think we will have to take them all away -- the three
18 of those away and you can start again.

19 A. Okay, I will try again.

20 Q. You can drag that number 3.

21 A. Right, that is showing what would have originally been
22 a chevron block, but there are -- there is a white cross
23 effectively across the mark and that is the lattice
24 underneath the sole actually influencing part of that
25 mark and the sole, because of the pressure, has worn

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1 away that part of the shoe more, so if you don't have
2 sufficient pressure to make that bit still make contact
3 with the ground it will appear as a void within the mark
4 and that's basically a void created by the lattice.

5 Q. And is that what you described earlier in your evidence
6 as the wear and tear of worn areas providing the
7 character that you're looking for?

8 A. Yes. And if you look at the actual chevron blocks, the
9 ones in number 2 have a surface texture pattern on them,
10 whereas the ones on the outer side of the shoe, there at
11 number 4, don't have that texture on because that
12 texture has been completely worn away and then it's been
13 worn to the extent where again you're starting to see
14 the voids coming through from the lattice underneath.

15 Q. So we can see a comparison on -- in red circle 2 we can
16 see the pattern on the chevron --

17 A. Yes.

18 Q. -- on the left on the outside of the sole, but on 4 it
19 looks like a darker -- the pattern isn't visible.

20 A. That's correct. That pattern would have been on all of
21 those blocks when that shoe had been new.

22 Q. So it's wear and tear that's caused that variation.

23 A. Yes.

24 Q. And that's the sort of character that you were talking
25 about earlier.

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1 A. Yes.

2 Q. Thank you. And then at paragraph 19, if we could for
3 a moment go back to your report. Sorry, this is on
4 page 8, paragraph 19:

5 "Further test impressions were made with these boots
6 by myself and it was from these impressions that
7 transparent overlays were produced for the purpose of
8 comparison with mark(s) on the submitted police vest as
9 per the instructions ..."

10 And again I wonder if you could look for me please
11 at SBPI00209. Do you recognise this?

12 A. Yes.

13 Q. Is this the item that you describe, the test impression
14 that was made by yourself?

15 A. It is, yes.

16 Q. And so these were carried out separately and we can see
17 the details on the left-hand side at the bottom.

18 A. Yes.

19 Q. And these are of Mr Bayoh's -- or one of Mr Bayoh's
20 shoes.

21 A. That's correct, yes.

22 Q. And again, can you show us the chevron, please?

23 A. The chevron is there (indicating).

24 Q. And the triangles?

25 A. The triangles are there (indicating).

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1 Q. And the worn area on the heel area which shows the --
2 thank you.

3 A. (Indicating).

4 Q. Thank you very much. Why did you do your own?

5 A. The test impressions I was provided with were
6 photocopies, but they didn't actually contain a scale,
7 so I couldn't reproduce them to actual size, so to
8 undertake a comparison and to be satisfied that they
9 were actual size, I produced my own test prints.

10 Q. How does it help you if you are having them made to
11 actual size?

12 A. Well, part of the comparison is to see whether the shoe
13 that you're considering is the same size as the shoe
14 that has deposited the mark, so they both have to be
15 reproduced as exactly as possible to the same scale so
16 that you can do a like-for-like comparison.

17 Q. And that is what you were attempting to do with your
18 work?

19 A. Yes.

20 MS GRAHAME: Thank you.

21 I'm conscious of the time. I know we started later
22 but --

23 LORD BRACADALE: I think what we will do, Ms Grahame, since
24 we started later, is carry on until 11.45 and then we
25 will take a 15-minute break.

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1 MS GRAHAME: Thank you.

2 Can I move back to your report for a moment, please
3 and if we could look at paragraph 20 on page 8. And
4 this now turns on to the examination of the boots of
5 PC Craig Walker which you have already identified for us
6 and again, was there any difference between the way you
7 examined these boots and the way you examined the
8 previous boots from Mr Bayoh?

9 A. No, there wasn't.

10 Q. And did you also carry out some impressions, or test
11 impressions, in the same way you had previously?

12 A. I did, yes.

13 Q. Thank you. And you prepared transparent overlays from
14 them also.

15 A. Yes.

16 Q. And then can we move on, please, to page 9. Do we also
17 see that you then did an examination of the police vest
18 of PC Nicole Short?

19 A. Yes.

20 Q. And can you explain to us how you went about examining
21 the vest?

22 A. Undertook a visual examination of the vest and used --
23 well, we recorded what we could see visually using
24 cameras and scales and then we used a range of different
25 lighting techniques to try to enhance any marks that

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1 might be present and recorded that and used a range of
2 filters within -- with the lighting techniques and
3 within the software that we have for printing the marks
4 to actual size to try to maximise the amount of detail
5 that we could see on the vest.

6 Q. So you looked at the front and back and the inside of
7 the vest?

8 A. Yes.

9 Q. Around the arm holes?

10 A. Yes.

11 Q. And you described earlier how you're looking for things
12 that are visible to the naked eye, but then you're also
13 looking for things that might not be visible to the
14 naked eye.

15 A. That's correct, yes.

16 Q. And you did all of that when you looked at the vest?

17 A. Yes.

18 Q. And we have heard evidence that the vest contains an
19 inside black portion and then a high visibility yellow
20 with silver strip overvest, if you like, on top. Is
21 that what you found?

22 A. Yes. Well, when it was presented to us at Cellmark the
23 items had been separated out. The black vest was within
24 the bag and the yellow vest was within a separate
25 polythene bag within the item itself, so they had been

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1 separated.

2 Q. Right. Thank you. And in paragraph 25 you mention:

3 "[The] black protective police vest, a torch,
4 a leather strap and a sheet of brown paper that
5 I understand was the sheet of paper that this item had
6 been examined on prior to submission for my
7 consideration."

8 And did you examine the bit of paper as well?

9 A. No, we didn't examine that. I understand that was just
10 what would have been used to collect anything that had
11 fallen from the item when it was previously examined and
12 therefore it wasn't relevant to the examinations I was
13 undertaking.

14 Q. Thank you. And you also say:

15 "[The] yellow high visibility fluorescent police
16 vest [was] ... in a further polythene bag."

17 A. Yes.

18 Q. You note that no marks were on the black vest.

19 A. That's correct.

20 Q. Visible or not visible to the naked eye.

21 A. Yes, from the examinations undertaken we didn't see any.

22 Q. Were you looking for footwear marks only, or were you
23 just looking for marks?

24 A. We were looking for footwear marks, marks that could be
25 identified as footwear.

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1 Q. All right.

2 Then at 27 -- I would like to go through this
3 paragraph in some detail:

4 "The fluorescent vest was examined."

5 So, the yellow vest.

6 A. Yes.

7 Q. "A number of dark coloured deposits were observed on the
8 fluorescent fabric at the rear right of this vest to at
9 the juncture of the vertical and horizontal reflective
10 strips of the vest."

11 I wonder if we could, just for a moment, look at
12 some photographs and it may be easier to -- or let's
13 begin, first of all, with ones that you were sent in the
14 appendix to your letter of instruction, photos at PIRC
15 01176. And I'm interested in photographs 10 and 12 on
16 the PDF. So, this is photograph 10 I think, which is
17 "RES_0032.JPG", and then if we could move on to 12 and
18 this is "RES_0034". Those are two marks -- two
19 photographs.

20 A. Yes.

21 Q. Can we look at the first one, 10 please, and do you see
22 the marks there that are visible?

23 A. Yes.

24 Q. And would you point those out to us with the red circle?

25 A. Well, they cover quite an area, but that's part of it.

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1 There are other marks round here and here (indicating).

2 Q. So you were examining all of those marks?

3 A. Yes.

4 Q. And is photograph 12 a close-up of that area, if we
5 could go back to photograph 12?

6 A. It is, yes.

7 Q. Thank you. So we can see the marks a little more
8 clearly in that photograph 12.

9 A. Yes.

10 Q. And what I will do is I will read out part of the report
11 and then we can go back to those photographs if we need
12 to. So this is on page 9, paragraph 12 -- sorry, 27.

13 So:

14 "A number of dark coloured deposits were observed on
15 the fluorescent fabric at the rear right of [the] vest
16 to at the juncture of the vertical and horizontal
17 reflective strips of the vest. These deposits continued
18 on to the fabric part of the horizontal reflective
19 strip. There was black staining to the plastic-coated
20 aspects of the reflective strips and to the police badge
21 on the rear of the vest."

22 Now, I would like to move on to two other
23 photographs, please, before I ask you to explain this.
24 These are taken from a PowerPoint presentation that we
25 looked at on Tuesday with Professor Dawson, which is

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1 SBPI191, and it is slide 13 that I'm interested in. And
2 this is a photograph -- when we heard from
3 Professor Dawson on Tuesday she showed us a picture of
4 the 1995 [sic] photographs that were taken and she
5 showed us a picture of this, which we heard from her was
6 taken in 2022 and showed the results of the vest after
7 fingerprint staining had been applied to the vest.

8 Is this the black staining that you're talking about
9 in this paragraph?

10 A. It is, yes.

11 Q. So we heard from Professor Dawson that photographs were
12 looked at by her that were taken in 1995 [sic] before
13 any forensic tests had been carried out --

14 A. Yes.

15 Q. -- and that was the -- if I can say cleaner looking
16 version of the vest, the one we just looked at,
17 photographs 10 and 12 --

18 A. Yes.

19 Q. -- with the black marks quite visible on the right side
20 of the vest, beside the strip, and then this photograph
21 shows how it arrived in your premises at Cellmark in
22 2022.

23 A. That's correct, yes.

24 Q. So this was after a number of forensic tests had been
25 carried out.

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1 A. Yes.

2 Q. So you recognise this photo as well?

3 A. Yes.

4 Q. So, thank you. If we can go back to paragraph 27 of
5 your report.

6 That's on page 9. And so where you say:

7 "There was black staining to the plastic-coated
8 aspects of the reflective strips and to the police badge
9 on the rear of the vest."

10 That's the black staining from the fingerprint
11 examination previously carried out by SPA, as you
12 understand it?

13 A. Yes, as I understand it, yes.

14 Q. Thank you. And you say there:

15 "I understand ... this staining was the result of
16 treating these parts of the vest with a black powder
17 suspension with a view to developing any fingerprints
18 that might be present. As a consequence of this
19 treatment being applied as a liquid and then having to
20 be removed by a washing process, parts of the yellow
21 fluorescent fabric adjacent to the treated areas have
22 been stained black. This includes the part of the vest
23 on which the dark deposits had been observed."

24 To what extent did that have an impact on your work,
25 Mr Ryder?

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1 A. It obscured part of the detail that was originally
2 present and obviously made the comparison that I was
3 asked to undertake more difficult.

4 Q. To what extent would it have been easier if you had had
5 the opportunity to examine the vest before fingerprint
6 analysis was carried out?

7 A. Well, we would have been able to see the mark in its
8 original condition and to see it before any detail had
9 been lost or obscured as a result of the processes that
10 were undertaken.

11 Q. So, how did you work around that in your assessment of
12 the marks?

13 A. I reviewed the reports, the statements and notes that
14 had been provided in relation to the examinations that
15 had previously been undertaken to understand the
16 processes that had gone on and to look to see if there
17 was any records of the mark that were more detailed,
18 that showed the mark in its pristine condition, or as
19 near to it as we could get, and to request one of those
20 images to work with to carry out the comparison.

21 Q. And was that the 1995 [sic] photographs --

22 A. 2015, yes.

23 Q. Sorry.

24 Sorry, that was my mistake. It was 2015. So it was
25 those marks that showed the vest -- that gave a better

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1 indication for you to use?

2 A. It was the clearest representation of those marks that
3 I could find that was available.

4 Q. Right. And did you rely on that photograph, those
5 images?

6 A. I did, yes.

7 Q. Right, and was that a better approach than looking at
8 the vest as it was in 2022?

9 A. There was more detail present to consider because not
10 only had part of the marks been obscured as a result of
11 that, it was evident from looking at that original
12 photograph and the vest itself that the deposits
13 appeared lighter in colour, or fainter at the time we
14 were given them and I took that to be that it was
15 because the deposits were so fragile that as a result of
16 the continued examination that part of those deposits
17 had been lost from the vest prior to it being examined
18 by me.

19 Q. And how, in your experience, can those items be lost
20 over time?

21 A. Because they're quite fragile and sitting on the surface
22 of the garment, any friction or contact with that would
23 result in those deposits being potentially removed, so,
24 for example, folding it up to put it back in the bag
25 after examination has been completed would be one way in

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1 which such a process could damage the marks and
2 I understand that this had been examined by a number of
3 people over a number of different -- in a number of
4 different ways, so it would have been in and out of the
5 bag on a number of occasions and unavoidably that detail
6 has been lost as a result of those processes.

7 MS GRAHAME: Thank you.

8 Would now be a --

9 LORD BRACADALE: Yes, we will take a 15-minute break now.

10 (11.47 am)

11 (Short Break)

12 (12.07 pm)

13 LORD BRACADALE: Ms Grahame.

14 MS GRAHAME: We were talking about paragraph 27 of your
15 report, on page 9, and if we can look at that again for
16 a moment. Just below halfway down you will see that it
17 says:

18 "As a consequence of this treatment being
19 applied ..."

20 So you had been mentioning the staining with the
21 black powder suspension, the fingerprint analysis that
22 had been done previously:

23 "As a consequence of this treatment being applied as
24 a liquid and then having to be removed by a washing
25 process, parts of the yellow fluorescent fabric adjacent

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1 to the treated areas have been stained black."

2 We looked at that in the photograph --

3 A. Yes.

4 Q. -- immediately before the break:

5 "This includes the part of the vest on which the
6 dark deposits had been observed."

7 A. Yes.

8 Q. I would like to ask you about the washing process. In
9 your experience, do you understand what that washing
10 process involves?

11 A. Well, the powder suspension process, as I understand it,
12 is basically it's a thick black sludge liquid which is
13 painted on to the surface they want to treat and then it
14 reacts with fingerprints. That's what they're trying to
15 develop. The powder within the suspension will stick to
16 the fingerprints and then when you wash it off, it
17 washes away the excess sludge or whatever you want --
18 the suspension, to leave behind or expose the
19 fingerprints that have reacted, but because it is
20 a liquid it's very difficult to control where that is
21 going to go when you're doing the washing process.

22 Q. So that can have an impact on the mark, can it?

23 A. Well, it has done in this case, yes.

24 Q. It has. And can I ask you to comment on some evidence
25 that we heard from Professor Dawson. Perhaps we could

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1 look at SBPI00191, which was a PowerPoint presentation
2 that she gave us on Tuesday, and I would like to look
3 first of all at a number of slides starting with 14. So
4 you will see that this is a -- we heard that this was
5 a photograph of the vest, you will recognise it?

6 A. Yes.

7 Q. And you will see that there are three areas identified
8 there, 1, 2 and 3, with circles.

9 A. Yes.

10 Q. I'm going to be asking you some questions about area 1.
11 Can we look at 15. You will see that there are little
12 red markers that have been applied to the areas.

13 A. Yes.

14 Q. Again, 1 is at the bottom of the silver strip,
15 fluorescent strip on the vest.

16 A. Yes.

17 Q. And then 16, you will see samples that were recovered
18 from the vest and again, you can just see the little red
19 markers showing a close-up of these areas. Again,
20 area 1 at the bottom is the one I'm going to ask you
21 about. You will see the mark there.

22 Then if we can move on to slide 19, which is area 1,
23 and it's a close-up, so this is from the soil on the
24 silver strip, fluorescent strip on the vest that we have
25 looked at and you will see at the bottom -- now,

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1 Professor Dawson talked about area 1 being at the lower
2 edge of the silver fluorescent strip. You can see
3 a little bit of the yellow fabric beneath it, just
4 between the marker and the strip. Do you see that?

5 A. Yes.

6 Q. And she said:

7 "Answer: ... it looked as if it had been wiped or
8 something."

9 And she was asked to give a description of
10 what had maybe caused that appearance and she
11 said:

12 "Answer: It's this sort of regular appearance at the
13 top, or there's a strip that is above the deposit that
14 appears like something has been there that is no longer
15 adhering to [the] fabric."

16 I just wondered if you could comment on whether this
17 washing process that you have described could cause
18 anything like this, or could it be some other --

19 A. It would depend what the deposits were that were there.
20 It could just be the friction that I referred to before
21 by folding it, or whether the fact that you have run
22 water over the item. You would expect the water to be
23 run over the areas where the suspension had been applied
24 and to try to avoid all the other areas that you're not
25 treating to try to preserve them as best you can, but

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1 again, I wouldn't be able to say whether that was
2 a result of washing, or whether that was just the
3 mechanical removal as a result of repeated examinations.

4 Q. Thank you. I would like to move on to paragraph 29,
5 please, of your report, which is on page 10. I think
6 you have touched on this earlier today. You requested
7 further electronic copies and you have given the details
8 of those there --

9 A. Yes.

10 Q. -- of images, and you talk about the:

11 "... vest Photo copy has been reproduced at this
12 laboratory to actual size to represent the dark staining
13 at the time prior to the treatments that have
14 unavoidably impacted on the visualisation of these
15 deposits."

16 I'm interested in this photo that's been reproduced
17 to actual size. Could you explain what you did?

18 A. Well, the image itself has got a scale in it, so what we
19 do is, using the computer software that we use then to
20 print is we calculate the size of the image and we work
21 it out so that the image, when it's printed out, will be
22 one-to-one size and a centimetre on the scale would be
23 a centimetre in the print, so we calculate how to do
24 that and then print it out to actual size.

25 Q. So whatever size the item is, you have an image that is

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1 actual size?

2 A. Yes.

3 Q. Thank you. And you say:

4 "Records of the deposits at the time of my
5 examination have also been made by photographing them
6 under a range of lighting conditions and using filters
7 to try to enhance the appearance of these deposits."

8 Describe what you were doing there?

9 A. It's basically, the vest as it was presented to me was
10 rephotographed and we experimented with different
11 lighting and different filters, trying to find the best
12 way to increase the contrast between the background and
13 the marks to make it as visible as we possibly could, to
14 try to create some detail -- sorry, not create, but to
15 show the detail that's there in its best way so that it
16 would assist our comparison the most.

17 Q. Right. Then you say:

18 "It was my opinion that the item [the photograph 34]
19 was the clearest representation of the deposits under
20 consideration."

21 And I think that's what you mentioned earlier.
22 I called them photographs 10 and 12, but the
23 photograph 12 was the closer-up photograph. You thought
24 that was the clearest representation of the deposits?

25 A. It was, yes.

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1 Q. Thank you. And you say:

2 "No detail was observed beyond that recorded in this
3 image that would in my view further assist in addressing
4 the matters subject to my instructions."

5 A. Yes.

6 Q. Thank you. If we move on to paragraph 30, you say:

7 "I have considered the recorded deposits to
8 determine whether there is any pattern to them that
9 I consider could relate to a pattern element from an
10 item of footwear. No features were present that I can
11 be satisfied are geometric shapes that I would expect to
12 see if they were related to an item of footwear being
13 brought down in forceful contact with this vest."

14 Could you explain that in a little more detail,
15 please.

16 A. What we're looking for is to see if there is any pattern
17 to them -- the marks themselves, to those deposits. If
18 there is anything in there which is pointing towards it
19 being a footwear mark -- are there any geometric shapes,
20 is there an arrangement of the square blocks,
21 an arrangement of triangles, an arrangement of hexagons,
22 whatever the tread pattern might have been, or anything
23 that you might recognise from experience of looking at
24 other footwear that looks like a footwear mark and
25 that's what we were looking for in that instance.

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1 Q. And you say that no features were present that satisfied
2 you that there were those geometric shapes?

3 A. That's correct, yes.

4 Q. And you say:

5 "I have explored the arrangement of deposits further
6 by positioning actual size transparent representations
7 of the footwear patterns in multiple positions over the
8 marks to determine if there is any spatial
9 correspondence between the features in the marks on the
10 vest and those on the respective pairs of footwear."

11 Can you explain what you were doing?

12 A. The impressions that we have seen previously, that we
13 had actually produced, you can transfer them onto
14 a clear acetate sheet, so you have actually got
15 a transparency of the footprint -- I've got one here if
16 it would assist.

17 Q. Is this from your own folder of materials?

18 A. Yes. Are you happy to --

19 LORD BRACADALE: (Mic turned off).

20 MS GRAHAME: Yes, yes.

21 A. So that is effectively what's produced, so you can then
22 put that down on top of the photograph and move it
23 around to try to find whether there's any correspondence
24 that you can see between that and the deposits on the
25 actual photograph.

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1 Q. And that's an actual size --

2 A. It is actual size, yes.

3 Q. -- of the transparency and you had the actual size of

4 the photograph --

5 A. Yes.

6 Q. -- of the original images.

7 A. Yes.

8 Q. And you did a comparison by visually moving them about

9 and checking to see?

10 A. Yes.

11 Q. And you say that:

12 "No such correlation was found that I would consider

13 to be indicative of these deposits having resulted from

14 a contact with the sole of either of these pairs of

15 boots."

16 A. That's correct, yes.

17 Q. And was that the boots of Mr Bayoh?

18 A. Yes.

19 Q. And PC Walker?

20 A. Yes.

21 Q. Thank you. So you couldn't find any items in the

22 transparency and from the sole of the boots that

23 corresponded with the vest?

24 A. I couldn't find a correspondence, no.

25 Q. Thank you. And you have also mentioned there that -- to

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1 go back to the second line:

2 "No features were present that I can be satisfied
3 are geometric shapes that I would expect to see if they
4 were related to an item of footwear being brought down
5 in forceful contact with this vest."

6 I'm interested in the use of that "in forceful
7 contact". What were you thinking of when you described
8 "in forceful contact"?

9 A. Well, I understand that -- from the instruction
10 provided -- that we were investigating the potential
11 that someone had stamped on this vest, so I understand
12 a stamp to be someone bringing down the undersurface of
13 their shoe in a forceful way, which increases the amount
14 of pressure that is applied when the shoe makes contact
15 with the surface it's coming into contact with.

16 Q. If there had not been a forceful contact between the
17 sole of the shoe and the vest, such as a stamp, but
18 perhaps a less forceful movement, or a less clearly
19 defined movement of some sort between the shoe and the
20 vest, could that have caused any of the marks that you
21 saw on the vest?

22 A. It will depend on the extent of the contact and the
23 extent of contact with the part of it. The deposits
24 cover quite a large area, so if it was a single contact
25 and they have all been put down at the same time, there

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1 is no correlation between any of the footwear that
2 I have seen and those shoes and that mark, and there was
3 no features in the entirety as a whole which would
4 support the view that it is a footprint, in my opinion,
5 but if you were to take one particular element of it
6 then I wouldn't be able to rule out that it could have
7 been caused by part of that shoe, but it would have to
8 be deposited in a way that it leaves a mark that isn't
9 recognisable as being left by that shoe.

10 Q. Right. Thank you. Then if we can look at paragraph 31:

11 "As part of my examination I have taken into account
12 that the deposits have been left on a textured fabric
13 surface which has the potential to impact on the clarity
14 and detail recorded in any impressions left."

15 Could you explain a little more about that?

16 A. In reaching the conclusion about whether it's a footwear
17 mark or not, you have to take into account the substrate
18 in which the mark has been deposited on and because it's
19 a textured surface, the expectation is there would be
20 less detail within the mark, so that said, an element of
21 caution was taken to -- against completely eliminating
22 the possibility that it was a shoe because you're not
23 dealing with an ideal situation.

24 Q. And then you go on to say:

25 "I have also been asked to consider whether the

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1 marks are the consequence of a forceful dynamic
2 motion..."

3 Is this the stamp that you were talking about
4 a moment ago?

5 A. Yes.

6 Q. "... which in my experience would have the potential to
7 distort any impressions left."

8 In what way could a forceful dynamic motion distort
9 impressions left?

10 A. You can get a situation where the shoe moves as it
11 deposits the mark. It could ruck the fabric up and
12 crease it and alter the appearance of what deposits
13 might be left behind. It might alter the appearance of
14 the actual mark produced itself because of the
15 additional impact that's applied and change the features
16 slightly that you might expect from that particular
17 shoe.

18 Q. Then:

19 "Nonetheless, I have seen no detail during my
20 examinations that allow me to form a view that these
21 deposits have been left as a result of a contact with
22 the sole of an item of footwear and in particular,
23 either of the considered items of footwear."

24 And that included Mr Bayoh's boots?

25 A. Yes.

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1 Q. And those from PC Walker?

2 A. That's correct, yes.

3 Q. So you had seen no detail during your examinations that
4 allowed you to express the view that the deposits were
5 left as a result of contact with the soles of those
6 boots?

7 A. That's correct, yes.

8 Q. Thank you. Now, you have mentioned the forceful dynamic
9 motion. Again, if the marks were caused not by
10 a forceful dynamic motion such as a stamp, but perhaps
11 a less forceful dynamic motion, would that cause you to
12 alter any of the views you expressed?

13 A. You would take it into account, but it doesn't alter the
14 opinion that there's nothing within those marks that
15 I can see that would allow me to form a view that they
16 have been made by either of those pairs of shoes, or
17 indeed that it's a footwear mark.

18 Q. Thank you. Then in paragraph 32 you say:

19 "Given the nature of the marks it is also my view
20 that I'm not able to exclude the possibility that either
21 of the submitted pairs of footwear could have
22 contributed to this deposited material in some way but
23 that contribution is so indistinct that it is not
24 recognisable as having been made by an item of
25 footwear."

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1 And so can you just tell us what that means?

2 A. It means that the marks are so indistinct that I can't
3 rule out the possibility that a shoe could have made
4 that mark but left a deposit that is so indistinct that
5 you can't recognise what you're seeing. It just isn't
6 recognisable as a footwear mark to me and I see no
7 elements in there that correlate with either of the
8 submitted pairs of shoes.

9 Q. And so if we have heard evidence that there was
10 a foot mark, a tread mark on the rear of this vest,
11 that's not your view as you have expressed in your
12 opinion?

13 A. There is nothing that I have seen that would assist
14 in -- scientifically assist in whether that is
15 a footprint, and/or whether it is either of these pairs
16 of shoes.

17 Q. Thank you. And then in paragraph 33 you say:

18 "Overall it is therefore my opinion there is
19 insufficient definition and detail within the marks on
20 the vest to be able to carry out a meaningful comparison
21 with the submitted footwear and/or to be able to offer
22 an opinion as to the nature of the surface these
23 deposits have been transferred from."

24 And does this go back to what you were saying
25 earlier in terms of a meaningful comparison and not

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1 having the confidence to be able to say one way or the
2 other?

3 A. There's -- yes, it does go back to that and it's a case
4 of there's no character within the marks that would
5 allow me to see what might have caused it, whether it's
6 a shoe, whether it's contact with a pattern on a grid
7 from the floor, whether it's contact with a bench,
8 any -- it could be that there are many different things
9 that could have caused it and I wouldn't be able to
10 offer an opinion whether it was more likely any of those
11 items -- unless there was a correlation found with one
12 of those.

13 Q. Thank you. Can we look at paragraph 34, please, so this
14 is at the top of page 11. I would like to ask you some
15 questions about this paragraph. Let's start to go
16 through it:

17 "Had the mark(s) or part of it been produced by an
18 item of footwear making forceful contact with
19 PC Nicole Short whilst she lay on the ground, there is
20 in my opinion a further expectation of a possible
21 transfer of material to the parts of her vest that were
22 in contact with the ground, particularly if the ground
23 was wet."

24 Could you explain what you mean by that?

25 A. In terms of that it's sort of equal and opposite forces,

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1 in that if someone was to be laying on the ground and
2 a mark was to be deposited on top of them on the
3 opposite side to where they were laying on the ground,
4 you would expect deposits from the shoe but you would
5 also expect deposits from the ground at the same time if
6 they were in contact with it.

7 Q. So when you're talking about forceful contact, are you
8 envisaging a stamp?

9 A. Yes, in terms of forcibly being put down, yes.

10 Q. So if a stamp or multiple stamps had been applied to the
11 rear of the vest, you would expect something on the
12 front?

13 A. There's certainly a potential for that, if it was in
14 contact with the ground, yes.

15 Q. And then you say:

16 "This would most likely be to the front or left side
17 of the vest if the mark on the right side was a result
18 of someone stamping on her."

19 Could you explain what you mean by that?

20 A. In terms of that, it envisages that you're bringing your
21 foot directly down, so given the position of the marks
22 on the vest on the rear right side, the opposite side of
23 the vest would be the left side, so that would be the
24 bit that is in contact with the ground, if it were to
25 come directly down on top of the vest at that point.

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1 Q. So if you were wearing a vest now, Mr Ryder, and the
2 mark was on the rear, on the right of the rear as you
3 looked at it, so perhaps underneath your right arm,
4 where would you have expected a corresponding mark to be
5 on the vest?

6 A. You would expect some contact on this side (indicating),
7 so it's the opposite side to where the contact with the
8 shoe would make. If that is in contact with the ground
9 as a result of the stamp then you might expect to see
10 deposits on that side as well.

11 Q. If we were looking at -- if you were wearing a vest now
12 and we were looking at that, I would have said the left
13 of the vest would be on this side and the right would be
14 on this side, and you're pointing to the opposite of
15 what I would expect. I want to be clear I've got this
16 right.

17 A. When I refer to right and left, I always refer to it as
18 the right and left of the wearer.

19 Q. Right, okay. So if the mark -- if you were wearing the
20 vest that we have seen, where were the marks on that
21 vest, if you were wearing that vest?

22 A. It would be on my right side here.

23 Q. Your right side. You're pointing to your side rather
24 than the rear, rather than your back?

25 A. I will refer to the image again.

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1 Q. Would you like to look at one of the images again?

2 A. Please.

3 Q. We have 10 and 12 which might help. So that's -- let's

4 have a look at image 10. I don't want to get confused

5 about this. This is the rear of the police vest that we

6 have been talking about?

7 A. Yes.

8 Q. Now, as I look at that I see marks on the right-hand

9 side?

10 A. Yes.

11 Q. Besides the right arm hole?

12 A. Yes.

13 Q. And if we turned that vest around where would we see

14 the -- I don't know if we have a photo of the front of

15 the vest actually in this -- oh yes, here we are.

16 Perfect. So we look at this -- we have turned the vest

17 around now, we're looking at the front. Where would you

18 have expected marks to be?

19 A. The bit that's on the opposite side as I would consider

20 it would be around this area (indicating).

21 Q. Right. So let's go back to the previous photograph of

22 the rear, which is photo 10. Sorry. So that's -- the

23 rear of the vest besides the arm and you would expect it

24 to be -- if it was a stamp straight down, you would

25 expect it to be on that point where you added the red

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1 circle?

2 A. Round about there, yes.

3 Q. Do you have an understanding of the position in which
4 the officer who was wearing this vest was on the ground?

5 A. I haven't been provided with that in detail, but in
6 terms of -- if it was -- because it's been described as
7 a stamp, I have taken that to be a direct, downward
8 movement.

9 Q. Thank you. So if the Chair takes a different view, then
10 that might impact on where the front mark would be --

11 A. It would, yes.

12 Q. -- expected to be.

13 A. Yes.

14 Q. Thanks. Can we go back to your report, please,
15 paragraph 34. You have said:

16 "No significant deposits of dirt were observed
17 during my examination of the vest or from examination of
18 photographs of the vest provided to me."

19 And I think earlier you gave evidence that you had
20 examined the whole vest, front and back?

21 A. Yes.

22 Q. And so were you -- does what suggest no significant
23 deposits of dirt were observed, is that including on the
24 front of the vest?

25 A. Yes.

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1 Q. Thank you:

2 "The absence of such deposits could, in my opinion,
3 be considered to support the view that she had not been
4 lying on the ground when the alleged stamp occurred,
5 resulting in the staining that has been the subject of
6 my examinations."

7 A. Yes.

8 Q. "I have, however, been made aware that items of police
9 equipment, including her radio and utility belt, were
10 also being worn with this vest."

11 A. Yes.

12 Q. "As such I am unable to rule out the possibility that
13 this equipment may have prevented a contact occurring
14 between the ground and the vest and therefore precluding
15 the transfer of material to it. This further
16 consideration therefore in my opinion also does not
17 assist in respect of whether the mark was a result of
18 a stamping action."

19 A. That's correct, yes.

20 Q. And this will be a matter for the Chair to decide.

21 A. Yes.

22 Q. But insofar as you are able, you have not been able to
23 find anything supportive of that?

24 A. No, I haven't.

25 Q. Thank you. Can I ask you when you're talking about the

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1 transfer of material from the ground onto the vest,
2 again, would the passage of time impact on that, or the
3 existence of that transfer?

4 A. In this particular instance it is about the erosion of
5 the material that's been transferred through the
6 subsequent examinations. If that item had been
7 recovered and stored in conditions where it wasn't
8 impacted in terms of -- it wasn't abraded, it wasn't
9 lost through various examinations, or moving about in
10 the bag and that sort of thing, then those deposits
11 would have stayed there until the point of an
12 examination, but it's because of the nature of the
13 deposits being fragile and the movement and the friction
14 that's impacted on it, so if it had been packaged in
15 such a way that prevented that, you could come to it
16 many, many years later and still carry out the
17 examination you could have undertaken if you had done it
18 at day one.

19 Q. And where would one find such conditions? Would that be
20 assistance of forensic experts or...?

21 A. It's all about the preservation and packaging of the
22 item. If you preserve -- if you package a footwear mark
23 in the appropriate way, even a fragile one, it will be
24 preserved and prevented from deteriorating.

25 In this case it would be very difficult to have

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1 preserved that mark on that item as it stood because of
2 the nature of it, with it being fabric and being placed
3 in a bag. The ideal thing would have been if it was
4 identified as a key mark at the absolute outset in the
5 beginning, if, for example, this was being undertaken at
6 a murder inquiry, for example, and this was on a victim
7 on the floor, to preserve that what you would do in the
8 ideal situation is cut that out and then take that away
9 and preserve it individually, if the significance of it
10 had been identified at that point.

11 Q. So if individuals had identified it as being of
12 considerable significance at an early stage, that's the
13 type of thing that could have been done?

14 A. It could have been done, yes.

15 Q. And that would have preserved the marks, or any marks
16 that were on the vest at the time?

17 A. It would, but then it's a balance about the other
18 examinations that need to be undertaken and the priority
19 of them and the likely significance, so it's all about
20 the original strategy that's set for the examination.

21 Q. So if that strategy had been developed, perhaps by
22 senior officers, that could have been done with the
23 assistance of forensic experts, could it?

24 A. It could have been done, yes. It is one of those
25 situations where I'm not sure that the significance of

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1 that would be recognised at that point. It is
2 a difficult item to recover and set a strategy for.

3 Q. So it would depend when it was recognised as being
4 possibly significant?

5 A. Yes.

6 Q. But if that had been drawn to the attention of forensic
7 experts at any time, that could have been considered?

8 A. It could have been, yes.

9 Q. Thank you. And that would have perhaps avoided some of
10 the erosion -- possible erosion of the material?

11 A. It could, but if the strategy that was set record -- it
12 did record the image at an early stage, before all the
13 treatments were done, so there was a strategy in place
14 to try to record and maximise the detail that was there.
15 That was then set and then they went on to progress the
16 examination to do the more destructive things, which in
17 my view wasn't an unreasonable set of examinations to
18 do.

19 Q. Going back again to thinking about this transfer,
20 perhaps on the front of the vest from the ground with
21 a forceful dynamic motion being applied to the rear, has
22 the forensic test having been carried out caused
23 a potential impact to erosion?

24 A. I didn't see anything in the earlier photographs that
25 were taken that would suggest there was anything there

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1 that could have been lost.

2 Q. Okay, thank you. We have talked about a scenario if
3 there was not that forceful dynamic motion such as
4 a stamp, or more than one stamp. What if there was
5 a less forceful dynamic motion, not a stamp, that caused
6 the shoe to come into contact with the vest? Again,
7 would you still expect a possible transfer of material
8 from the ground in that situation?

9 A. Not necessarily. It all depends on the circumstances
10 and the position. There may well have been indirect
11 contact with the ground. If they were in direct contact
12 with the ground at the time, regardless of how much
13 pressure was applied, then you probably expect
14 a transfer to have occurred, but again, we've got the
15 equipment in there that we mentioned which may prevent
16 that contact from taking place.

17 Q. And then looking at paragraph 35, please, you have set
18 out your conclusions in this section which the Chair can
19 consider. At paragraph 35 you say:

20 "It is my opinion that the mark(s) in the form of
21 deposits on the rear of the fluorescent police vest in
22 the vicinity of the police badge are poorly defined and
23 it is not possible to offer a view from examination of
24 the marks as to what may be the source of this mark(s)."

25 A. Yes.

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1 Q. So does that open the possibility there could be many
2 different possible sources of this mark?

3 A. In my view, yes.

4 Q. 36:

5 "I do not recognise any features within this mark
6 that would allow me to offer an opinion that it had been
7 made by the under surface (sole) of an item of
8 footwear."

9 A. That's correct.

10 Q. And that would be any item of footwear?

11 A. Yes.

12 Q. 37:

13 "I have found no correspondence with the footwear
14 ... of [Mr] Bayoh or ... PC ... Walker that would allow
15 me to provide an opinion that either of these sets of
16 footwear could have produced this mark..."

17 A. That's correct, yes.

18 Q. 38:

19 "As a consequence of the poorly defined nature of
20 the mark(s) I am also unable to exclude the possibility
21 that either or both of these sets of footwear might have
22 contributed in some way to the mark(s) on the vest."

23 So you can't exclude that possibility either?

24 A. That's correct, yes.

25 Q. And then 39:

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1 "Overall, it is my opinion that the mark(s)
2 considered in this instance are unsuitable to undertake
3 any meaningful comparison and hence do not provide any
4 opportunity to offer an expert opinion that would assist
5 in addressing whether or not the mark(s) on the
6 fluorescent police vest might have been made by the
7 footwear provided to me."

8 A. That's my opinion, yes.

9 Q. And so unfortunately you're not able to assist the Chair
10 in terms of the forensic examination in relation to
11 these marks?

12 A. That's correct.

13 Q. Thank you. I would like to just confirm one other
14 thing. We heard evidence previously in the earlier
15 hearing from an Alison Marven, and Alison Marven gave
16 evidence on 17 June this year. She was a forensic
17 scientist with the SPA in chemistry.

18 A. Yes.

19 Q. Now, we have a transcript of her evidence to this
20 hearing. I will summarise, if I may, what she said and
21 I would like to ask you if you agree with her
22 conclusions:

23 "The partial mark on the high visibility vest was
24 found to have insufficient detail for a meaningful
25 comparison to be carried out."

Transcript of the Sheku Bayoh Inquiry

1 I think --

2 A. I agree with that, yes.

3 Q. -- you agree with that.

4 "Marks on the jacket possibly included a triangle.

5 It is possible that this is one of the elements from the

6 shoes of the deceased but there is really insufficient

7 detail/resolution of marks for any meaningful

8 comparison."

9 A. That's correct, yes. I agree with that.

10 Q. You agree. A meaningful comparison:

11 "So for one pattern element, just a triangle, it's

12 not a unique shape. To say that the triangle was from

13 a certain item, if you have only got one pattern

14 element, that would be quite misleading if you haven't

15 got any of the other pattern elements round about."

16 A. That's correct, and because we're talking about what is

17 potentially a triangle, it may not actually be

18 a triangle that's deposited it, it could be a partial

19 deposition of a four-sided block which has deposited

20 a triangle shape.

21 Q. You mean like a square or a rectangle?

22 A. Yes, it could be because it's a partial contact it might

23 not even be that although you've got a triangular shape

24 that it has actually been deposited by a triangle.

25 Q. Thank you.

Transcript of the Sheku Bayoh Inquiry

1 "We've got a possible triangle but there was nothing
2 else of the pattern of the shoe soles roundabout it."

3 A. Yes.

4 Q. You agree with that as well?

5 A. Yes.

6 Q. And then:

7 "... if there has been a full contact -- contact
8 with the full sole against the item, depending on what
9 the substance the item is made of is, it may be unusual
10 to only get one pattern element and not have anything
11 else show up. If somebody, for example, stood on this
12 table and the table was dusted [she was referring to the
13 table in front of her at the time] I wouldn't expect to
14 only see one part -- if the full sole has come into
15 contact with the table, I wouldn't expect only to see
16 one part of the mark, or one pattern element there.
17 I would maybe expect to see more. You might not have
18 the full mark, but you would expect to see more than
19 just one piece.

20 "Obviously it depends on the shape, if there's
21 a curvature of the item that's been touched, maybe only
22 part of the item does come into contact with the sole of
23 the shoe, but for full sole contact ... -- you might
24 expect to see more than one, but again, it might depend
25 on what's on the sole of the shoe, or if there's been

Transcript of the Sheku Bayoh Inquiry

1 something on the vest that's -- initially that's reacted
2 with something that the shoe has come into contact
3 with."

4 I appreciate that was a long passage. I can go
5 through it more slowly if that would help you. Overall,
6 do you agree with what she said there?

7 A. The expectation is that if a shoe comes into contact
8 with a particular surface, you would -- and it deposits
9 a mark you would expect to see a representation of more
10 than one pattern element. You would expect contact from
11 multiple ones that would be manifested in the mark. You
12 might not get the shoe in its entirety, you might only
13 get a few pattern elements, but you would expect to see
14 at least a few surrounding ones. I mean, there may be
15 an extreme situation whereby the deposit that's been put
16 down by the shoe has only been in contact with one
17 pattern element, so when the shoe comes into contact,
18 the only transfer that occurs is that contaminant from
19 that one block, but we've got a lot of the mark there in
20 terms of its extent and there is one possible triangular
21 shape in there, but that in my view doesn't correspond
22 particularly well with any of the shoes.

23 Q. Thank you. So from what you're saying it sounds like
24 largely you do agree with what Alison Marven said to the
25 Chair about these different issues?

Transcript of the Sheku Bayoh Inquiry

1 A. My expectation would be there would be a mark of greater
2 extent than a single pattern element, yes.

3 MS GRAHAME: Thank you. Thank you very much. Could you
4 give me a moment please.

5 (Pause).

6 Thank you. I have no further questions.

7 LORD BRACADALE: Thank you.

8 Now, there were no Rule 9 written applications. Are
9 there any oral applications?

10 The dean of Faculty.

11 Mr Ryder, I wonder if you would withdraw to the
12 witness room while I hear a submission.

13 (The witness withdrew)

14 (Pause).

15 Yes, Dean of Faculty.

16 Application by THE DEAN OF FACULTY

17 DEAN OF FACULTY: My Lord, contrary to what your Lordship
18 just said we did submit a Rule 9 with regard to
19 Mr Ryder.

20 LORD BRACADALE: Did you?

21 DEAN OF FACULTY: Yes.

22 LORD BRACADALE: Sorry, I didn't realise that.

23 DEAN OF FACULTY: And as part of that we would like to
24 explore what the witness has just said with particular
25 regard to the photographs and the triangular mark there,

Transcript of the Sheku Bayoh Inquiry

1 the photographs at PIRC 01176, as was heralded in the
2 latter parts of the Rule 9 application. I would
3 imagine, my Lord, I will be no more than five or
4 ten minutes.

5 LORD BRACADALE: And do we have these photographs in the
6 system?

7 DEAN OF FACULTY: Indeed.

8 Ruling

9 LORD BRACADALE: Very well, I will allow you to ask these
10 questions.

11 DEAN OF FACULTY: I'm obliged.

12 LORD BRACADALE: Can we have the witness back, please.

13 (The witness returned)

14 MR PAUL RYDER (continued)

15 LORD BRACADALE: Mr Ryder, you're going to be asked some
16 questions by the Dean of Faculty of Advocates who
17 represents two of the attending officers.

18 Dean.

19 Questions from THE DEAN OF FACULTY

20 DEAN OF FACULTY: I'm obliged, my Lord.

21 Mr Ryder, just very briefly, please. We heard from
22 Professor Dawson of Locard's Principle, where every
23 contact leaves a trace; you will be familiar with that?

24 A. Yes.

25 Q. I assume it works in reverse: if there's a trace mark on

Transcript of the Sheku Bayoh Inquiry

1 a garment then that's the result of contact with
2 something?

3 A. Yes.

4 Q. Can we have the photographs again on screen please,
5 PIRC 00176 and -- now I think I have these slightly
6 differently, but can we find photograph RES32, which is
7 page -- I think it was page 48 of my PDF, but -- yes.
8 No, that's slightly different. If we go back up
9 a couple, please. I'm looking for the front of the
10 jacket, please. Yes, there we are. So that's the front
11 of the jacket. It's pretty clean: do you agree with me?

12 A. Yes.

13 Q. So in general it's not a dirty jacket?

14 A. No.

15 Q. And if we go to RES34, please, this is the close-up of
16 the mark, something has left this mark?

17 A. Yes.

18 Q. And just looking -- or these marks, I should say, and in
19 particular if you look immediately below the
20 intersection of the reflective strips, if you could
21 point, please, to what we have been talking about as the
22 triangle.

23 A. Sorry, it's just -- I should try again.

24 Q. Just to the right of the circle you just put on.

25 A. There (indicating) that's what I understand to be the

Transcript of the Sheku Bayoh Inquiry

1 triangle referred to.

2 Q. What about to the right of that? You see a triangular
3 mark? I don't know if I can -- I don't think I can do
4 it, but --

5 A. Are you referring to that there? (indicating).

6 Q. Slightly to the left of that there's a mark that seems
7 to have three sides, do you see that?

8 A. That one? (indicating).

9 Q. Yes, that one.

10 A. It's got three sides but I wouldn't describe that as
11 being a triangle which I could definitively relate to an
12 item of footwear.

13 Q. How else would you describe a shape with three sides?

14 A. It's not regularly sided in terms of it's not got
15 straight edges to the triangle. It's not sharply
16 defined.

17 Q. No, but we have heard already that these things can be
18 blurred as a result of the way in which the foot comes
19 into contact, yes?

20 A. Yes.

21 Q. And that is a three-sided shape, is it not?

22 A. It is.

23 Q. If you look upwards in the photograph and then to the
24 right, there's, I think, three black lines, possibly
25 a fourth if you look to the reflective strip as well.

Transcript of the Sheku Bayoh Inquiry

1 Can you identify those? Yes, certainly three black
2 marks. Would you agree with me that looks like
3 a geometric pattern of some sort?

4 A. There's three, four -- possibly four lines that have got
5 consistent spacing to them, but in terms of the
6 geometric element, I can't see what's caused those.

7 Q. Well, something with a geometric pattern has had to have
8 applied that mark, do you not agree, given the
9 regularity of the spacing between the lines?

10 A. Potentially, but it could also be a single contact and
11 they have separated and that is a result of creases in
12 the fabric. We just don't know.

13 Q. But there are three, possibly four lines effectively in
14 parallel with regular spacing?

15 A. Yes.

16 Q. And you will recall the acetates of Mr Bayoh's boots, we
17 looked at them earlier.

18 A. Yes.

19 Q. They contain on the outer aspect treads which contain
20 parallel lines, don't they? If we go to SPA00024. If
21 you look -- let's look at the left-hand side, if you --
22 there are parallel lines, are there not, there?

23 A. Are you referring to the chevrons?

24 Q. Yes. If you just look at the upward diagonal aspect of
25 each chevron, parallel lines?

Transcript of the Sheku Bayoh Inquiry

1 A. Yes.

2 Q. And there are triangles?

3 A. There are.

4 Q. Now, as you say in your own report, you say:

5 "As a consequence of the poorly defined nature of
6 the marks, I am unable to exclude the possibility that
7 Mr Bayoh's boots might have contributed in some way to
8 the marks on the considered vest."

9 So you can't exclude it, can you?

10 A. I can't exclude it, no.

11 Q. But something left those marks on Nicole Short's vest?

12 A. It did.

13 Q. Something that she encountered since the last time that
14 vest was washed?

15 A. Yes.

16 Q. Yes? And if she put that vest on clean that day,
17 something that happened to her that day?

18 A. Yes.

19 Q. And it could have been a shoe, you can't exclude that?

20 A. I can't exclude that. In terms of the pattern elements
21 that you were referring to though, as part of the
22 examination that we undertook, we did consider whether
23 those could be part of the shoe. The process
24 I described for laying the overlay on the mark to try to
25 find things and the spacing of those elements, although

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1 there is four regular spaced elements, don't correspond
2 with the pattern elements on the shoe.

3 Q. But again, that would depend the way in which a boot
4 interacted with that vest?

5 A. It would.

6 Q. Because there could be scuffing and movement and the
7 like?

8 A. Yes.

9 Q. And when you say you undertook that analysis, given that
10 you were unable to locate the triangle I'm talking about
11 first, do we understand you were looking at a different
12 triangle?

13 A. I was looking at the deposits in their entirety, looking
14 for areas of correspondence that I could see, looking
15 for elements that I could be satisfied could relate to
16 an item of footwear, so that I could form a view (a) it
17 had been formed by a shoe, and (b) whether it could have
18 been formed by either of these two pairs of shoes
19 specifically, and from my examination, I didn't see any
20 character in there that was sufficient to allow me to
21 form that opinion.

22 Q. But you do agree with me we see a three-sided shape mark
23 on the vest?

24 A. I agree there was a three-sided shape there, but from
25 that particular three-sided shape, I wouldn't attribute

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1 to an item of footwear because it's not specific -- it's
2 not sufficiently defined to be satisfied that it's
3 a triangle because of the irregularities to it.

4 Q. Which could be down to scuffing?

5 A. Potentially.

6 Q. And we do see triangular shapes on the acetate of
7 Mr Bayoh's boots?

8 A. There are, but none of them correspond specifically with
9 the triangles that have been explored within that mark.

10 Q. This is really where I'm asking you to get to, Mr Ryder.
11 Something has happened to put that mark on PC Short's
12 vest?

13 A. I agree, yes.

14 Q. And you can't exclude the possibility it was that boot
15 or its companion?

16 A. I can't exclude the possibility it has contributed to
17 that mark in some way. If the entirety of that mark was
18 a single contact with that boot, or either of those
19 boots, what I'm seeing isn't what I would expect to see.

20 Q. But you can't exclude the possibility?

21 A. That it might have contributed to parts of that mark,
22 yes.

23 DEAN OF FACULTY: Thank you. I'm obliged, my Lord.

24 LORD BRACADALE: Mr Ryder, thank you very much for coming to
25 give evidence to the Inquiry. I'm going to adjourn in

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1 a moment and then you will be free to go.

2 I will adjourn now until 10 o'clock tomorrow
3 morning.

4 MS MITCHELL: (Mic turned off).

5 LORD BRACADALE: Very well.

6 Mr Ryder, contrary to what I have just said, would
7 you return to the witness room and you are free to go.

8 (Pause).

9 Ms Mitchell.

10 MS MITCHELL: I'm obliged to the Chair for allowing this.

11 It is understood from what my Lord has said this morning
12 that an application is pending in respect of certain
13 evidence that is going to be heard which has already
14 been pre-recorded. Clearly that's been pre-recorded for
15 a long time and the date which it was supposed to be
16 heard has also been known for a long time.

17 The application is still, as I understand it, not
18 before the Inquiry and I would respectfully submit that
19 the Inquiry ensures that that is done promptly by
20 setting a time limit for later today for that
21 application to be in. That might allow the matter to be
22 dealt with overnight or tomorrow morning and for
23 a decision to be made on that matter and evidence led,
24 if necessary.

25 The Inquiry will of course understand that as it has

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1 already expressed this morning, the evidence of this
2 witness is of some import to the Inquiry and
3 particularly the family of Mr Sheku Bayoh. Given that
4 the Inquiry is not sitting this afternoon, it would no
5 doubt provide ample time for such an application to be
6 before the Inquiry.

7 Unless that's done, my Lord, it does mean that this
8 matter would be carried over until the Inquiry next sits
9 and that's not due to sit until starting the last day,
10 I think, of January, and it really means that this
11 matter would be carried over until February and I would
12 respectfully submit that it is a matter that could and
13 should be dealt with before then.

14 LORD BRACADALE: Thank you, Ms Mitchell. I have noted what
15 you said.

16 I shall adjourn.

17 (1.01 pm)

18 (The Inquiry adjourned until 10.00 am on Friday,

19 9 December 2022)

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