

# OPUS 2

## INTERNATIONAL

London Bridge Inquests

Day 13

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Opus 2 International - Official Court Reporters

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1 Thursday, 23 May 2019  
 2 (10.03 am)  
 3 THE CHIEF CORONER: Good morning, Mr Hough.  
 4 MR HOUGH: Good morning, sir. We're continuing with  
 5 evidence of the confrontation of the armed officers with  
 6 the attackers and the first witness today is  
 7 PC Tim Andrews.  
 8 THE CHIEF CORONER: Thank you.  
 9 PC TIMOTHY ANDREWS (affirmed)  
 10 THE CHIEF CORONER: Good morning, Mr Andrews.  
 11 A. Good morning.  
 12 THE CHIEF CORONER: Please do take a seat if you would like  
 13 to sit.  
 14 A. Thank you.  
 15 THE CHIEF CORONER: Just make yourself comfortable, and all  
 16 I suggest if you sit is just bring the microphone  
 17 slightly closer to your face. That's great, thank you.  
 18 Questions by MR HOUGH QC  
 19 MR HOUGH: Would you please give your full name and rank for  
 20 the court?  
 21 A. Yes, I am PC Timothy Andrews, 2764AS currently attached  
 22 to Southwark Police Station, sir.  
 23 Q. Thank you. Officer, you understand I'm asking you  
 24 questions first on behalf of the Coroner and you may  
 25 then have some questions from some other lawyers.

1

1 A. Thank you.  
 2 Q. You also know that you're here to give evidence about  
 3 events in the Borough Market area on Saturday,  
 4 3 June 2017.  
 5 A. Yes.  
 6 Q. You made your witness statement about those events on --  
 7 your principal witness statement on 1 August 2017. You  
 8 may refer to that as you wish.  
 9 A. Thank you, sir.  
 10 Q. In June of 2017, were you based at Peckham Police  
 11 Station?  
 12 A. Yes, sir.  
 13 Q. On the afternoon and evening of 3 June 2017, were you on  
 14 duty working a late shift?  
 15 A. Yes, sir.  
 16 Q. I think your colleague with whom you were working was  
 17 PC Bartosz Tchorzewski, from whom we heard yesterday?  
 18 A. That's correct.  
 19 Q. Were you both, you and your colleague, in plain clothes  
 20 and in an unmarked vehicle?  
 21 A. That's correct, sir.  
 22 Q. I think you were in black jogging bottoms and a black  
 23 zipped top?  
 24 A. That's correct.  
 25 Q. With some black trainers that had distinctive white

2

1 soles?  
 2 A. Yes, sir.  
 3 Q. And we'll see those in some of the images.  
 4 Did a time come when you had to return the unmarked  
 5 car to Walworth Police Station?  
 6 A. Yes, sir.  
 7 Q. What time was that?  
 8 A. Bear with me.  
 9 Q. I think you say it was around 10.00 pm?  
 10 A. Yes, it would have been, yes, towards the end of the  
 11 shift, sir, yes, that's correct.  
 12 Q. When you got to Walworth Police Station, were you  
 13 expecting a marked car to ferry you back to Southwark?  
 14 A. Yes, that's correct.  
 15 Q. We know that PCs Sam Balfour and Sophie Conning were the  
 16 crew of that car; do you recall that?  
 17 A. Yes, sir.  
 18 Q. At around the time when you were due to be collected, do  
 19 you recall hearing some radio calls to an event that was  
 20 unfolding?  
 21 A. Yes, sir.  
 22 Q. Where were you when you heard those calls?  
 23 A. I was at Walworth Police Station.  
 24 Q. Where, more specifically; what were you doing?  
 25 A. I was just waiting to be picked up, I think I was in the

3

1 yard, the back yard of Walworth Police Station.  
 2 Q. Did the calls come over your personal radio?  
 3 A. Yes, sir.  
 4 Q. What do you recall them saying?  
 5 A. I believe initially it was a van had crashed into some  
 6 people at London Bridge/Borough Market.  
 7 Q. What did you do in response to those calls?  
 8 A. As I'm a response driver I said to PC Balfour that  
 9 I would drive the car towards Borough Market.  
 10 Q. So you were going to take over as driver of the marked  
 11 police car --  
 12 A. That's correct.  
 13 Q. -- in which PCs Balfour and Conning had come to collect  
 14 you?  
 15 A. That's correct.  
 16 Q. Did you then all head to the scene on blue lights and  
 17 sirens?  
 18 A. Yes, sir.  
 19 Q. Do you recall how long it took you to get there?  
 20 A. I'd probably say no more than 3 minutes from Walworth  
 21 Police Station to Borough Market on blue lights.  
 22 Q. While en route, did you receive any more information on  
 23 your radio about what was happening and where?  
 24 A. It's just more that I believe the van had crashed on  
 25 London Bridge. The problem I had is my radio was either

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1 in my pocket or down in the centre console because I was  
 2 driving, so I didn't hear quite as much as probably the  
 3 other officers .  
 4 Q. Where did you head towards?  
 5 A. Borough Market.  
 6 Q. Why did you go to the market specifically rather than  
 7 towards the bridge?  
 8 A. Because I had seen somebody in front of us had gone  
 9 straight onto the bridge and we were directed more  
 10 towards Bedale -- I think it was Bedale Street.  
 11 Q. Why were you directed towards there?  
 12 A. That's because some people were pointing and I could see  
 13 another police car had just pulled into Bedale Street  
 14 ahead of us.  
 15 Q. Thank you. If we can locate Bedale Street on a plan,  
 16 you will see a plan come up next to you, it is  
 17 {MP0006/1}. If you look over to the right, you will see  
 18 Bedale Street going north off Borough High Street?  
 19 A. Yes.  
 20 Q. Did you make a turn from Borough High Street into Bedale  
 21 Street?  
 22 A. Yes, the left turn into Bedale Street from Borough High  
 23 Street .  
 24 Q. So you are coming north up Borough High Street and  
 25 turned left into Bedale Street?

5

1 A. That's correct.  
 2 Q. When you got into Bedale Street, which is the road  
 3 bordering the covered market area of Borough Market on  
 4 the east side, what did you see there?  
 5 A. There was a police car pulled up so I pulled up directly  
 6 behind that. I could see someone was getting a first  
 7 aid kit out of the boot of that car and -- can you see  
 8 the Globe pub?  
 9 Q. Globe Tavern which would have been on your right --  
 10 A. Globe Tavern.  
 11 Q. -- shortly after entering Bedale Street.  
 12 A. Yes, so that gap isn't actually quite as wide,  
 13 I believe, as it portrays on the map there, but I could  
 14 see someone was lying on the prone position on the floor  
 15 being treated by some officers as we pulled up.  
 16 Q. As you pulled up there, did you and your colleagues get  
 17 out of the car?  
 18 A. Yes, sir.  
 19 Q. What did you see when you got out?  
 20 A. I saw that officers were dealing with a gentleman on the  
 21 floor, administering first aid to him, and with that we  
 22 were -- people were obviously shouting at us, shouting  
 23 that "They've gone down there, they've gone down there",  
 24 pointing towards the -- I think it's the alleyway that's  
 25 pretty much opposite.

6

1 Q. Now, how long were you out of the car before you heard  
 2 those shouts directing you into the market?  
 3 A. No more than 10, 20 seconds, probably. It was pretty  
 4 much as soon as we got out the car.  
 5 Q. So you didn't have much time to speak to your colleagues  
 6 before you heard those shouts?  
 7 A. No, not at all .  
 8 Q. Where were the people who were shouting and pointing?  
 9 A. Pretty much standing in the road as soon as we got out  
 10 the car, straight there.  
 11 Q. Did they say anything more than "They went that way" or  
 12 "They went down there"?  
 13 A. No.  
 14 Q. Who do you think they were referring to?  
 15 A. I was assuming the driver of the van.  
 16 Q. By this stage, did you know or did you believe that this  
 17 was anything more than a road traffic accident?  
 18 A. Me personally, no.  
 19 Q. We've heard from some of your colleagues that they, by  
 20 this stage, may have appreciated that something more  
 21 serious was going on; you say you weren't. Is that  
 22 because you had been focused on driving?  
 23 A. Predominantly, yes, and I wasn't listening to the radio  
 24 transmissions quite as much because like I said, my  
 25 radio wasn't -- normally we wear our radios here, it is

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1 a lot clearer for us to listen to, but because I was  
 2 plain clothes, I hadn't had that luxury. My radio was  
 3 down by the side so I didn't hear quite as much as my  
 4 colleagues.  
 5 Q. You say you were directed into an alleyway leading into  
 6 the market. You have identified it as the alleyway  
 7 immediately opposite. We've heard from others that --  
 8 from your colleagues that the people may have been  
 9 directing into Middle Road, the alleyway further up --  
 10 A. That's --  
 11 Q. -- Bedale Street?  
 12 A. -- that's correct, my mistake, it wasn't that one  
 13 directly, it was the other one slightly further along.  
 14 Q. Who did you go with to that area?  
 15 A. There was myself, PC Tchorzewski, Conning and Balfour.  
 16 Q. What equipment did you have with you?  
 17 A. I had -- I was wearing my stab vest, I had an asp, CS  
 18 and radio and cuffs .  
 19 Q. At this point as you were heading towards Middle Road,  
 20 did you have any view that your safety might be at risk?  
 21 A. Due to the fact that there was quite a lot of excitable  
 22 people, understandably, I was thinking more along the  
 23 lines of this doesn't seem quite as I'd first imagined  
 24 as a road traffic accident.  
 25 Q. Did you do anything about that concern?

8

1 A. Not immediately. I just had my radio, I was listening  
 2 to the radio, but then as I'm sure you'll come on, as  
 3 I walked round the corner, I was confronted by the three  
 4 gentlemen.  
 5 Q. Did you have your asp out at this stage?  
 6 A. I don't recall if I had it at that stage.  
 7 Q. In your witness statement, page 2, bottom third, you  
 8 have a paragraph which begins:  
 9 "I had racked my asp because I feared for the safety  
 10 of myself and other members of the public."  
 11 And you describe doing that before you got into  
 12 a position where you saw any attackers; does that  
 13 refresh your memory, or do you think --  
 14 A. Yes, that's probably the case, sir.  
 15 Q. So looking at your statement, you think that you did  
 16 rack your asp before you came across the attackers?  
 17 A. Yes.  
 18 Q. So something in your mind at the time was telling you  
 19 that you needed to have your asp at hand?  
 20 A. Yes.  
 21 Q. And ready to use?  
 22 A. Yes, sir.  
 23 Q. As you moved into the alleyway could you initially see  
 24 anybody ahead of you?  
 25 A. Not initially, sir.

9

1 Q. Members of the public?  
 2 A. I am recalling there was a chap on a bike who just kept  
 3 cycling away from us.  
 4 Q. Did you and your colleagues move down the alleyway?  
 5 A. Yes, sir.  
 6 Q. At what speed?  
 7 A. Just walking speed.  
 8 Q. As you were initially walking down the alley, could you  
 9 see clearly to the end?  
 10 A. No, it curved slightly.  
 11 Q. As you reached the curve, which I think is around the  
 12 middle of Middle Road, could you at that point start to  
 13 see towards the end where the alleyway leads into  
 14 Stoney Street?  
 15 A. Yes, sir.  
 16 Q. What did you see there?  
 17 A. Three males.  
 18 Q. What did you first notice about them?  
 19 A. That one of them was wearing a -- I think it was a white  
 20 football shirt, and they were stood three abreast,  
 21 basically, across the street.  
 22 Q. Where were they facing? Were they facing towards you or  
 23 away when you first saw them?  
 24 A. Towards me.  
 25 Q. In your statement you say that the man you identified

10

1 with the football top also had camouflage trousers --  
 2 A. Yes.  
 3 Q. -- is that a detail you recall?  
 4 A. Yes, sir.  
 5 Q. Were they holding anything that you noticed?  
 6 A. They had knives.  
 7 Q. Did you notice anything about those knives, length or  
 8 appearance?  
 9 A. They looked like kitchen knives, sort of 8 to 10 inches  
 10 long, I would estimate.  
 11 Q. Did you notice anything else about them?  
 12 A. That they had blood on them.  
 13 Q. Did you notice anything particularly about the other two  
 14 men, their appearance, what they were wearing?  
 15 A. I hadn't noticed so much about the other two,  
 16 unfortunately.  
 17 Q. Well, we know that they were wearing what looked like  
 18 suicide vests, or at least canisters belted across their  
 19 torsos. Did you notice those when you first saw them?  
 20 A. No, sir.  
 21 Q. But nevertheless, seeing these three men holding  
 22 blood-stained knives, did it now dawn on you that this  
 23 was a terror attack?  
 24 A. Absolutely.  
 25 Q. What did you do?

11

1 A. I believe I activated my emergency button on my radio  
 2 requesting urgent assistance to our location.  
 3 Q. Were you able to get through on your radio?  
 4 A. I believe the initial transmissions came out, yes.  
 5 Q. At that stage, were you aware where your colleagues  
 6 were?  
 7 A. Yes.  
 8 Q. They were close to you, were they?  
 9 A. Yes.  
 10 Q. What else did you do? In your statement you describe  
 11 holding out your arm to stop your colleagues passing  
 12 you?  
 13 A. Yes.  
 14 Q. At that moment, did you or the men you were facing move,  
 15 move forwards? What we've heard from some of your  
 16 colleagues is that there was a short stand-off.  
 17 A. Yes.  
 18 Q. Is that something you recall?  
 19 A. Yes.  
 20 Q. How did the stand-off end?  
 21 A. Due to the fact that there was nobody in between us and  
 22 them, I would have said to them "Let's start heading  
 23 back" because I knew my other colleagues were back where  
 24 we'd left the car, so I was hoping that they might -- we  
 25 might draw them to us and they might follow us.

12

1 Q. What did you next see or hear? If it helps, it's page 3  
 2 of your statement towards the top.  
 3 A. Towards the top, did you say, sir?  
 4 Q. Yes, towards the top, the first main paragraph. You  
 5 describe suddenly seeing glass smashing around you?  
 6 A. Yes, sir, and that was the problem, we didn't  
 7 actually -- couldn't realise or work out where this  
 8 glass was coming from.  
 9 Q. So there was suddenly, as it were, an explosion of  
 10 glass?  
 11 A. Yes.  
 12 Q. Were you aware at that point that one of your colleagues  
 13 had been injured?  
 14 A. Yes, PC Tchorzewski.  
 15 Q. Could you see what sort of injury he had suffered?  
 16 A. Yes, he had suffered a laceration to the top of his  
 17 head, centre of his head, just above his forehead.  
 18 Q. Did you indicate to your colleagues that you should be  
 19 getting back before or after he suffered that injury?  
 20 If you can't remember, please say so.  
 21 A. No, I don't.  
 22 Q. In any event, did you and your colleagues start moving  
 23 back down Middle Road?  
 24 A. Yes, very slowly we started to withdraw.  
 25 Q. Were you backing away facing the attackers or had you

13

1 turned?  
 2 A. We were facing the attackers as we backed away.  
 3 Q. Did a time come, however, when you turned and went back  
 4 facing towards Bedale Street?  
 5 A. I don't -- I think we backed the whole way, it's just as  
 6 we came round the curve that's where we lost sight of  
 7 them.  
 8 Q. In any event, did you get as far as Bedale Street?  
 9 A. I don't believe we did.  
 10 Q. Did you get towards the Bedale Street end of Middle  
 11 Road?  
 12 A. Yes.  
 13 Q. While you were doing that, were you continuing to use  
 14 your radio?  
 15 A. Yes, sir.  
 16 Q. What were you saying or requesting?  
 17 A. Trojan assistance.  
 18 Q. So armed officer assistance?  
 19 A. Yes, sir.  
 20 Q. As you got towards the Bedale Street end of Middle Road,  
 21 had you received any responses, any promises of Trojan  
 22 assistance or any acknowledgment of your calls?  
 23 A. Not that I was aware of, sir.  
 24 Q. At that point you say you'd lost sight of the men. What  
 25 did you and your colleagues then do?

14

1 A. Well, felt that we needed to keep them in eye contact,  
 2 obviously, so we started to advance again towards their  
 3 direction.  
 4 Q. How far back down Middle Road did you go?  
 5 A. It's difficult to say. Probably I reckon we were  
 6 three-quarters of the way back towards...  
 7 Q. So near the Stoney Street end?  
 8 A. Sorry?  
 9 Q. Stoney Street is the road on the left --  
 10 A. Yes.  
 11 Q. -- going north, which is on the other side of  
 12 Borough Market.  
 13 A. Do you mean when we advanced where did we get to?  
 14 Q. Yes.  
 15 A. Oh yes, sorry, beg your pardon. Yes, we got to the  
 16 junction of Stoney Street.  
 17 Q. Before I ask you about what happens from that point, may  
 18 I just show you some CCTV stills and see if they assist  
 19 any of your recollection.  
 20 First of all, {DC7181/270}. If you look at the  
 21 still, the image at the bottom of the screen, this is  
 22 a still from mobile phone footage. Does this depict the  
 23 view you had of the attackers coming towards you down  
 24 Middle Road?  
 25 A. Yes, sir.

15

1 Q. And then page 276 of the same document, please.  
 2 {DC7181/276}. Now, what we appear to see on this  
 3 footage, which is from a camera mounted within  
 4 Borough Market, is the men continuing to advance towards  
 5 that central junction of Middle Road, and you and your  
 6 colleagues appear at this stage to have largely turned  
 7 and be going back.  
 8 A. Yes, sir.  
 9 Q. Does that refresh your memory that most of you appeared  
 10 to have turned at some point?  
 11 A. Yes, sir.  
 12 Q. And then {DC7181/277}, please. Do we see here that,  
 13 from a different view, you and PC Tchorzewski and PC Rae  
 14 were heading back down Middle Road but you appear to be  
 15 looking over your shoulder to keep the attackers in  
 16 view?  
 17 A. Yes, sir.  
 18 Q. Now, there were also some members of the public around  
 19 you. Were you even aware of them at the time?  
 20 A. Not at all, sir, no.  
 21 Q. And then another perspective, {AV0065/15}, please,  
 22 that's another view of the men as they approached you.  
 23 And then {AV0065/17} of the same document, we can see  
 24 the men heading back towards Stoney Street and that  
 25 confirms your evidence that a time came when they headed

16

1 back, you'd got towards the Bedale Street end?  
 2 A. Yes, sir.  
 3 Q. We can take that off screen now.  
 4 As you reached Stoney Street after you had lost  
 5 sight of the attackers and then gone back after them,  
 6 did you get towards the corner which gave you a view  
 7 down Stoney Street?  
 8 A. Yes, sir.  
 9 Q. I think we can see a view of that at {PH0716/1}. If you  
 10 look at this photograph, the end of Middle Road is just  
 11 over slightly on the left with the police tape across  
 12 the entrance. Do you see that?  
 13 A. Yes, sir.  
 14 Q. And there is the view down Stoney Street with the police  
 15 car, it's an ARV, has crashed into some furniture, and  
 16 then a further ARV further down the street; do you see  
 17 that?  
 18 A. Yes, sir.  
 19 Q. If we leave that photograph up on the screen, please.  
 20 As you reached that corner, did you look into  
 21 Stoney Street?  
 22 A. Yes, sir.  
 23 Q. Was it well lit?  
 24 A. Yes.  
 25 Q. What could you see?

17

1 A. I could see that one of the suspects was in the middle  
 2 of the road and the other two were slightly further --  
 3 yes, the other two suspects were slightly further on,  
 4 they were assaulting a male.  
 5 Q. What side of the road were they on?  
 6 A. As I look down as if you're walking towards Borough High  
 7 Street, they were on the left-hand side.  
 8 Q. So close to the covered market that we see in this  
 9 photograph?  
 10 A. Yes, sir.  
 11 Q. How far were they away from you?  
 12 A. Maybe between, I'd probably say around 30 metres,  
 13 40 metres.  
 14 Q. At this stage were you aware of your colleagues being  
 15 near you?  
 16 A. As in the ones Balfour and ...?  
 17 Q. Yes.  
 18 A. Yes.  
 19 Q. You have said that you saw two of the suspects attacking  
 20 a man; was that your first view of them?  
 21 A. Prior to seeing them earlier?  
 22 Q. Yes.  
 23 A. Yes, sir.  
 24 Q. So your first view once you had got into Stoney Street?  
 25 A. Yes, sir.

18

1 Q. How was the man positioned, the person they were  
 2 attacking?  
 3 A. He was bent over at the waist.  
 4 Q. What could you see the suspects, the two men, doing?  
 5 A. Stabbing him.  
 6 Q. Could you actually see the knives?  
 7 A. Yes, sir.  
 8 Q. How were they moving their arms?  
 9 A. Just aggressively stabbing him.  
 10 Q. You are making a motion suggesting a movement from the  
 11 shoulder into the side.  
 12 A. Yes.  
 13 Q. What did you do seeing that scene?  
 14 A. We started to head towards them.  
 15 Q. Were you continuing to call on your radio for armed  
 16 help?  
 17 A. Yes, sir.  
 18 Q. At that point, as you began approaching the man being  
 19 attacked, what did you see?  
 20 A. One of the Trojan ARV units pulling into Stoney Street.  
 21 Q. How quickly did it seem to be coming forward?  
 22 A. Sorry, sir?  
 23 Q. How quickly did it seem to be coming forward?  
 24 A. The ...?  
 25 Q. The ARV.

19

1 A. Quickly.  
 2 Q. How did you feel when you saw it?  
 3 A. Extremely relieved.  
 4 Q. As it approached, how close did it get to the attack  
 5 that you were witnessing?  
 6 A. More or less right on top of it.  
 7 Q. How close had you got forward towards the attackers  
 8 because, as you say, you had come forward when you saw  
 9 a person being attacked?  
 10 A. Probably within 5, 10 metres, I would say.  
 11 Q. So you could see the ARV very clearly?  
 12 A. Yes.  
 13 Q. However its headlights, we know, were on?  
 14 A. Yes, sir.  
 15 Q. Were they at all obscuring your view?  
 16 A. It came over slightly to the left of me, so I wasn't  
 17 particularly glared.  
 18 Q. As the ARV approached, what did you see the officers  
 19 inside doing?  
 20 A. One of the officers immediately got out from the --  
 21 Q. From which side?  
 22 A. The passenger side.  
 23 Q. He was holding a firearm, was he?  
 24 A. Yes.  
 25 Q. How was he holding it?

20

1 A. As he got out it was initially pointing down towards the  
2 ground, but then one of the three started closing him  
3 down very rapidly.  
4 Q. So he'd come out of the passenger door on your right?  
5 A. Yes, yes. Or fairly -- because it turned in slightly,  
6 so it was -- there was -- the side of the car was sort  
7 of facing me.  
8 Q. But if we imagine you facing the car, the passenger side  
9 would be more on your right and the driver side more on  
10 your left?  
11 A. Yes, sir.  
12 Q. So the officer got out of the passenger door slightly on  
13 your right, and he initially had his firearm down, and  
14 you say you then saw one of the attackers starting to  
15 close him down?  
16 A. Yes.  
17 Q. Before the ARV arrived and the officer got out, was that  
18 attacker actually in the process of attacking, stabbing  
19 the man?  
20 A. No, sir.  
21 Q. What was he doing?  
22 A. He was pacing about. It looked like to me he was  
23 looking for somebody else to attack.  
24 Q. As the armed officer got out and the man started closing  
25 him down, what did the armed officer do?

21

1 A. He raised his gun.  
2 Q. How fast was the attacker coming at the armed officer?  
3 A. He was running at him.  
4 Q. What was he doing with his hands?  
5 A. He was holding them out in an aggressive manner with the  
6 knives raised.  
7 Q. You say knives: it was your perception that there were  
8 two knives, was it?  
9 A. That was my perception, yes, sir.  
10 Q. Could you hear the officer say anything?  
11 A. Not at the time, no, sir.  
12 Q. Were you saying anything?  
13 A. I was, sir. I was saying "Shoot him, shoot him".  
14 Q. How close did the attacker get to the officer?  
15 A. I would say 2 to 3 yards away from him.  
16 Q. Was the officer moving during this time, going forward,  
17 going back, or just staying stationary?  
18 A. I think he was stationary.  
19 Q. I'm sorry?  
20 A. I think he was stationary at the time.  
21 Q. As the attacker got, as you say, 2 or 3 yards from the  
22 officer, what did the officer start doing?  
23 A. Raised his gun up.  
24 Q. And then?  
25 A. Shot him.

22

1 Q. Could you tell how many rounds were being fired?  
2 A. No, sir.  
3 Q. Multiple rounds?  
4 A. There was a number, but I couldn't tell you a number,  
5 any specific ...  
6 Q. What happened to the attacker as those shots were fired?  
7 A. He fell to the floor.  
8 Q. Immediately?  
9 A. Pretty -- yes, I would say immediately.  
10 Q. What did the armed officer do as the suspect went to the  
11 ground?  
12 A. I think he backed off slightly, keeping the gun on him.  
13 Q. Meanwhile were you aware of anything happening on the  
14 other side of the ARV, on the driver's side?  
15 A. Yes.  
16 Q. What did you see happening there?  
17 A. The two males who were attacking the gentleman suddenly  
18 turned around and started to head towards the car, to  
19 the firearms car.  
20 Q. So they disengaged from the attack, did they?  
21 A. Yes, sir.  
22 Q. And they started moving towards the car. At the time  
23 they started moving towards the car, do you recall that  
24 the car doors on that side were open or closed?  
25 A. I don't recall, sir.

23

1 Q. Were you aware at some point of armed officers getting  
2 out of that side of the car?  
3 A. Yes, sir.  
4 Q. How many armed officers?  
5 A. Two.  
6 Q. What did they do as they got out?  
7 A. They shot the other two males.  
8 Q. The impression you're giving is that what happened very  
9 quickly, that they got out and shot almost immediately  
10 afterwards.  
11 A. Yes, sir.  
12 Q. Were they able to get out fully from the car, as far as  
13 you could see?  
14 A. I couldn't tell, sir.  
15 Q. What were the attackers doing in the moments before  
16 those officers fired?  
17 A. Closing them down.  
18 Q. As far as you could tell, how close did they get to  
19 them?  
20 A. Probably within the same sort of distance, I believe, so  
21 3 metres away or something like that, 3 yards.  
22 Q. So once again you had an impression of the attackers  
23 rushing the officers?  
24 A. Yes, sir.  
25 Q. Again, tell us if you can't remember, but can you recall

24

1 what they were doing with their hands?  
 2 A. No, I can't recall, sir.  
 3 Q. Did you hear any of the officers saying anything before  
 4 firing?  
 5 A. I didn't hear anything, sir.  
 6 Q. You say in your witness statement that your view of the  
 7 part of the incident involving the officers coming from  
 8 the driver's side was slightly blocked by the angle of  
 9 the ARV as against your position; is that right?  
 10 A. Correct, sir.  
 11 Q. So you had a better view of the shooting of the first  
 12 attacker in the sequence who we know was Khuram Butt?  
 13 A. That's correct.  
 14 Q. Before we move on to what happened in the immediate  
 15 aftermath of the shooting, may I show you some more CCTV  
 16 stills, just to identify yourself and what you were  
 17 seeing.  
 18 A. Yes, sir.  
 19 Q. First of all, {PH3883/1}. Now, we can see here the  
 20 attackers beginning to attack the member of the public,  
 21 Mr Filis. That's the attack you saw, is it?  
 22 A. That's correct.  
 23 Q. Now, the CCTV stills suggest that in fact all three  
 24 attackers engaged in the attack.  
 25 A. Yes.

25

1 Q. Your recollection from the time, though, was that one of  
 2 them was slightly apart from it?  
 3 A. That's correct, yes.  
 4 Q. {PH3885/1}, please. We see there that PC Tchorzewski is  
 5 running forward; were you aware of him running forward  
 6 as the attack was going on --  
 7 A. Yes, sir.  
 8 Q. -- as you did? We see the ARV coming up the -- coming  
 9 up Stoney Street as you described. Next, {PH3887/1}.  
 10 Is that you that's come into shot just from the left  
 11 wearing all black but with the white soled trainers?  
 12 A. Yes, sir.  
 13 Q. Then {PH3889/1}. Does this show how close you had  
 14 reached, the position you had reached, when the armed  
 15 officer was getting out of the right-hand side of the  
 16 ARV?  
 17 A. Yes, sir.  
 18 Q. And this suggests that you were positioned slightly over  
 19 to the right of the road, therefore, as you say, to give  
 20 you a slightly better view of that side of the ARV?  
 21 A. Yes, sir.  
 22 Q. And then {PH3891/1}, please. We see that you remained  
 23 in that position as the armed officer came across the  
 24 front of the ARV?  
 25 A. Yes.

26

1 Q. And is it right that your view of the armed officer with  
 2 the gun in position, first of all at low raise --  
 3 A. Yes, sir.  
 4 Q. -- was between you and the ARV?  
 5 A. Yes.  
 6 Q. Then, please, {PH3892/1}. We see on this image that the  
 7 officer appears to have raised his firearm with one of  
 8 the attackers starting to move towards him?  
 9 A. Yes, sir.  
 10 Q. You're not shown in this image directly, but I think we  
 11 can see that the -- just some faint shadows to the left  
 12 of the shot. Were you still quite close behind PC  
 13 Tchorzewski at this point?  
 14 A. Yes, sir.  
 15 Q. Then {PH3894/1}. We see there, as you say, the attacker  
 16 coming towards the officer, the officer holding his  
 17 ground and holding the gun up. Then {PH3896/1}, we can  
 18 see in the next instance the attacker is closing down  
 19 the officer, but the officer appears to have given  
 20 ground a little, perhaps to maintain distance between  
 21 them?  
 22 A. Yes, sir.  
 23 Q. You weren't, in the heat of the moment, actually aware  
 24 of the officer moving back though?  
 25 A. No.

27

1 Q. We can take that off screen now.  
 2 Now, that last image showed that you had moved  
 3 forward, again, a little. By the time that the shots  
 4 had been fired, were you once again quite close to the  
 5 armed vehicle and where the suspect had fallen?  
 6 A. Yes, sir.  
 7 Q. After the firing had ended, did you have any exchange  
 8 with any of the armed officers?  
 9 A. Yes, one of the officers was shouting "Cuffs, cuffs".  
 10 Q. And you interpreted that as an instruction to get your  
 11 cuffs out and cuff one of the suspects?  
 12 A. Yes, sir.  
 13 Q. Where was the officer and the attacker now?  
 14 A. The attacker was on the floor and sort of outside the  
 15 Wheatsheaf pub.  
 16 Q. Which is on the right-hand side of the road, I think?  
 17 A. Yes, sir, and the officer had just withdrawn slightly as  
 18 well.  
 19 Q. There were some barriers outside the Wheatsheaf to  
 20 enclose a seating area outside. Was the attacker near  
 21 those?  
 22 A. Yes, sir.  
 23 Q. Did you approach him?  
 24 A. Yes, sir.  
 25 Q. How did he appear as you got to him?

28

1 A. He was -- had his hands clenched on his chest, and there  
2 was -- he was covered in blood.  
3 Q. But was he giving any signs of life other than the hands  
4 clenched?  
5 A. Yes, he was groaning and he was moving his arms.  
6 Q. Did you get all the way up to him?  
7 A. Yes, sir.  
8 Q. Did you apply the cuffs?  
9 A. I believe so, yes.  
10 Q. How did you apply them? In what position?  
11 A. It's basically called a front stack because his hands  
12 were already in that position, I just put the cuffs  
13 directly on him.  
14 Q. As you did that, did he react at all?  
15 A. No.  
16 Q. Did you see him move at all?  
17 A. Yes, he was moving.  
18 Q. You describe in your witness statement his eyes opening  
19 and him rolling from side to side?  
20 A. Yes, sir.  
21 Q. If we can bring up another image on screen {AV0089/33}.  
22 Now, this is an image, at around this time, viewed from  
23 a CCTV camera at the other end of Stoney Street behind  
24 the ARV. The firearms officers' faces have been  
25 obscured with black dots. And if you look over towards

29

1 the Wheatsheaf side, you can see that one figure, if you  
2 put the cursor on it, please, because I think the  
3 furthest firearms officer up the page -- yes, that one,  
4 over to the right, please -- that, I think, is the  
5 officer who was covering the suspects; is that right?  
6 A. Yes, sir.  
7 Q. If we move slightly over to the left, there's a figure  
8 in black approaching; do you think that's you  
9 approaching --  
10 A. Yes, sir.  
11 Q. -- to cuff the suspect?  
12 As you had cuffed him and were close to him, could  
13 you now see anything about what else he was wearing?  
14 A. Yes, sir, as I looked down around at his waist I could  
15 see that he had a brown belt on and it appeared to be  
16 some plastic bottles that had been gaffer-taped.  
17 Q. What do you think it was?  
18 A. A suicide belt.  
19 Q. Did you have any doubt about that?  
20 A. No.  
21 Q. What did you say to the armed officer?  
22 A. I obviously asked him if he had seen what was around the  
23 waist and that we needed to get everybody back.  
24 Q. Did he indicate whether he had or hadn't seen the vest?  
25 A. I believe -- I couldn't tell.

30

1 Q. How did he react to you saying that?  
2 A. Telling us all to get back.  
3 Q. Now, given that he told you to get back, and hadn't done  
4 so before, in fact, had called you forward, would that  
5 suggest to you that perhaps he had not seen the belt  
6 before then?  
7 A. That's correct.  
8 Q. Now, were you also aware of other armed officers asking  
9 for suspects to be cuffed?  
10 A. Yes.  
11 Q. When was that in the sequence? Was that after you had  
12 seen what you thought to be a suicide vest or before?  
13 A. Before I'd seen it.  
14 Q. So, really, simultaneously with the officer asking you  
15 to cuff Khuram Butt, one of the other armed officers was  
16 calling for cuffs for the other suspects?  
17 A. Yes.  
18 Q. Did any of your colleagues respond to that request on  
19 the other side of the street?  
20 A. Yes, PC Ian Rae.  
21 Q. Where did he go?  
22 A. He started to come across to the other two who were on  
23 the floor.  
24 Q. Were you aware whether he managed to apply cuffs?  
25 A. I know he got sort of close to them, but I don't know if

31

1 he applied cuffs.  
2 Q. As the armed officer told you to get back once you had  
3 told him about the apparent suicide vest, where did you  
4 go?  
5 A. Myself and PC Rae headed towards the Market Porter pub.  
6 Q. I think the Market Porter pub is further north up  
7 Stoney Street, so away from the viewer in this  
8 photograph; is that right?  
9 A. That's correct.  
10 Q. And over on the left at the junction with Park Street?  
11 A. That's correct.  
12 Q. As you went up there, were you making any radio calls?  
13 A. Yes, I'd radioed in that three males had been shot.  
14 Q. If we can bring up a transcript on screen, please  
15 {DC8183/11}. If we look at an entry down towards the  
16 bottom of the page, at 22.18.09, the entry is recorded:  
17 "Female shot".  
18 Do you think that that is your call but incorrectly  
19 transcribed?  
20 A. Correct.  
21 Q. What did in fact say?  
22 A. "Three males shot".  
23 Q. That's timed at 22.18.09, which is about 1 minute and 20  
24 seconds after the shots were fired; can you recall where  
25 you were when you were making that call?

32

1 A. No, sir.  
 2 Q. In any event, did you go inside the Market Porter?  
 3 A. I did, sir.  
 4 Q. Once inside, did you find members of the public who had  
 5 been effectively holed up in there?  
 6 A. Yes, sir.  
 7 Q. Did you also find a person who had suffered a stab  
 8 injury?  
 9 A. Yes, sir.  
 10 Q. We heard that that was Gavin Stacey, from whom we have  
 11 heard evidence. Did you assist with the first aid for  
 12 Mr Stacey?  
 13 A. Yes, sir.  
 14 Q. While you were doing so, did you hear further gunshots  
 15 ringing out outside?  
 16 A. Yes, sir.  
 17 Q. At one stage, did you go back outside to get first aid  
 18 kit from armed officers?  
 19 A. Yes, sir.  
 20 Q. While you were there, what was the scene in the street?  
 21 A. I could obviously see the blue lights of the ARVs but  
 22 there was a lot of smoke, so it was quite difficult to  
 23 make out.  
 24 Q. We know that in the period that followed the initial  
 25 shooting, armed officers remained holding cover over the

33

1 suspects for quite some time?  
 2 A. Yes, sir.  
 3 Q. First of all from close to them and then from behind the  
 4 ARV; is that what you saw?  
 5 A. I could see as I came to the door of the Market Porter,  
 6 I could definitely see firearms officers with weapons  
 7 trained on the three.  
 8 Q. You got the first aid kit back into the pub. A short  
 9 while later, were you joined by a medic from the armed  
 10 units?  
 11 A. Yes, sir.  
 12 Q. After a time, were people in the pub escorted away by  
 13 armed officers?  
 14 A. Yes, sir.  
 15 Q. Did you remain with the injured man initially?  
 16 A. Yes, sir.  
 17 Q. Did you also help others at the scene?  
 18 A. Yes, sir.  
 19 MR HOUGH: Those are all the questions I have. I'll just  
 20 check whether anyone else has any questions for you.  
 21 No questions from anyone.  
 22 MS BARTON: Sorry, Jonathan, I was a bit slow there.  
 23 Questions by MS BARTON QC  
 24 MS BARTON: May I ask one issue. I ask questions on behalf  
 25 of City Police and I just want to ask you this, if

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1 I may. You said that when the firearms officers got out  
 2 of the ARV, you didn't hear any warning shouted by those  
 3 officers. We've heard from one of your colleagues that  
 4 he did hear a number of warnings. Do you think you  
 5 didn't hear it because, first of all, you were shouting  
 6 loudly and repeatedly "Shoot them"?  
 7 A. Absolutely, yes.  
 8 Q. And not only were you shouting, but members of the  
 9 public, who we see in the CCTV clips, were throwing  
 10 a chair and a bread basket at the attackers who were  
 11 attacking the man on the ground?  
 12 A. Absolutely, yes.  
 13 Q. So it's not that the warnings didn't happen; it's that  
 14 you didn't hear them?  
 15 A. Absolutely correct.  
 16 MS BARTON: Thank you very much.  
 17 MR HOUGH: Thank you. Those are all the questions anybody  
 18 has for you. May I just take this opportunity to thank  
 19 you for your efforts on the night and for your  
 20 considerable courage in approaching those attackers, and  
 21 also to thank you for coming to give evidence.  
 22 A. Thank you, sir.  
 23 THE CHIEF CORONER: And can I simply echo those sentiments  
 24 that have been expressed: thank you very much for  
 25 everything you did.

35

1 A. Thank you, sir.  
 2 MR HOUGH: Sir, the next witness is Simon Edwards.  
 3 THE CHIEF CORONER: Thank you.  
 4 MR SIMON EDWARDS (sworn)  
 5 THE CHIEF CORONER: Good morning, Mr Edwards.  
 6 A. Good morning, sir.  
 7 THE CHIEF CORONER: Please make yourself comfortable, if you  
 8 wish to sit that's absolutely fine. If you wish to  
 9 stand, equally that's fine. Just make yourself  
 10 comfortable. Pull the microphone slightly closer  
 11 towards you. That's great. That will help amplify your  
 12 voice.  
 13 A. Thank you.  
 14 Questions by MR HOUGH QC  
 15 MR HOUGH: Would you please give your name for the court?  
 16 A. Simon Edwards.  
 17 Q. Mr Edwards, you understand that I'm asking questions  
 18 first on behalf of the Coroner and then you may or may  
 19 not be asked questions by other lawyers?  
 20 A. I do, yes.  
 21 Q. You also know that you're here to give evidence about  
 22 events in or near Borough Market on 3 June 2017?  
 23 A. Correct, yes.  
 24 Q. Your witness statement about those events is dated  
 25 27 June 2017 and you may refer to that as you wish.

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1 On that Saturday night, were you out socially in  
2 Borough Market, in the Borough Market area, with your  
3 partner, Nichole, and some friends?  
4 A. I was, yeah.  
5 Q. Had you been for dinner at a Mexican restaurant next to  
6 the Wheatsheaf on Stoney Street called El Pastor?  
7 A. That's correct, yes.  
8 Q. We can identify that on a plan, first of all,  
9 {MP0006/1}. We see the Market Porter and the  
10 Wheatsheaf, and between them El Pastor.  
11 After having dinner there, did you initially have  
12 a drink on the corner of Stoney Street at the  
13 Southwark Tavern?  
14 A. We attempted to go in but it was quite busy so we didn't  
15 actually enter.  
16 Q. And then after that attempt, did you then go to the  
17 Wheatsheaf for a final drink?  
18 A. That's correct, yes.  
19 Q. We can see where that is on the plan, just to the south  
20 end of Stoney Street on the left as you're going up from  
21 Southwark Street.  
22 If we can bring up a photograph of the Wheatsheaf,  
23 {DC7283/125}. We there see that at the frontage of the  
24 pub there are two doors giving entry, and we know there  
25 was also a seating area outside at the time with some

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1 barriers around it.  
2 Did you go into the interior of the pub?  
3 A. Yes, I went inside, yes.  
4 Q. At what time did you arrive?  
5 A. Roughly I'd say about between 9.30 and 9.45, roughly.  
6 Q. How busy was the pub?  
7 A. Yes, it was quite busy at the front area round the bar,  
8 and round the back as well, yeah.  
9 Q. To see how the bar and the pub are laid out, may we  
10 please have on screen {MP0018/1}. Now, we're looking  
11 here on the left at a plan of the pub and on the right,  
12 an overview, a computer-generated overview. Can you see  
13 that you can enter the pub through either of those doors  
14 at the front and, as you go in on either side there is  
15 a sort of partition dividing the front area? That  
16 partition leads up to the bar which is in a roughly  
17 rectangular shape in the middle of the pub?  
18 A. That's correct, yes.  
19 Q. Where did you initially go to have your drink?  
20 A. Once we got served round the bar area we kept to the  
21 left-hand side and sat at the back of the pub on what  
22 I'd describe as sort of picnic tables at the back. That  
23 was the only place we could actually get a seating area  
24 for our group.  
25 Q. Did a time come when you decided to leave the pub?

38

1 A. It did, yeah.  
2 Q. What time was that?  
3 A. I'd say roughly between 10.10 and 10.15.  
4 Q. Did you get up first, among your friends, along with  
5 a friend called Rudi, Rudi Thirion?  
6 A. That's correct, yes.  
7 Q. Where did you head?  
8 A. As we came out the back of the pub, so you're walking  
9 towards the doors, we made our way to the right-hand  
10 door to exit the pub through that door.  
11 Q. So it was the right-hand door from your perspective, the  
12 left-hand door on the plan?  
13 A. Correct, as you look at the pub it would be the  
14 left-hand door from outside.  
15 Q. The one to the south on Stoney Street?  
16 A. Correct.  
17 Q. As you moved towards that door, were you aware of  
18 something out of the ordinary happening?  
19 A. Not as I got towards the door, no.  
20 Q. Where did you get before you realised something was out  
21 of the norm?  
22 A. Probably about 2 metres out onto the pavement area  
23 outside the door.  
24 Q. So you had got a little onto Stoney Street?  
25 A. Yes.

39

1 Q. What did you see there?  
2 A. There was a lot of screaming and commotion, and as  
3 I looked to my left-hand side, I've seen three males  
4 walk in a line, walking towards me.  
5 Q. Now, if we bring up a photograph, {DC7283/125}, how far  
6 did you get out into the road before you saw these  
7 males?  
8 A. I was probably still on the pavement, so a metre outside  
9 the door. I don't recall standing in the road as such.  
10 As soon as I came out, really.  
11 Q. You say the men were in Stoney Street?  
12 A. Correct.  
13 Q. Which direction?  
14 A. As I came out the door, I looked left towards Black &  
15 Blue restaurant.  
16 Q. How far were they away from you?  
17 A. I'd probably say between 20 or 30 metres.  
18 Q. What did you notice about them?  
19 A. They were spaced out and walking in a line, and at the  
20 time I thought they had red sticks in their hands  
21 because it was quite dark looking down there, but there  
22 was something glowing in their hands.  
23 Q. Were there other people in the street?  
24 A. No, I had a clear view of all three.  
25 Q. Was anybody around you saying anything that you could

40

1 hear?

2 A. Yeah. People were screaming to get back in the pub, and

3 I probably was on the pavement for about 5 to 10

4 seconds, no more, I got pulled back in the pub along

5 with my friend Rudi, and that's when we entered the pub

6 again.

7 Q. In that short period while you saw the men, could you

8 tell anything about their appearance?

9 A. No, it was quite dark. Like I say, it was -- I just --

10 I could just tell they had something red in their hands.

11 It was quite distinctive to see that.

12 Q. How were they moving?

13 A. They were just walking. They weren't running, they were

14 just walking up the street. I would say at just

15 a normal pace.

16 Q. Did you perceive them though as the source of the

17 threat?

18 A. Yes, they looked -- they didn't seem to fit in with

19 everyone else's reaction. They seemed quite -- they

20 weren't shouting or making any noise, so they did stand

21 out, yes.

22 Q. While you looked at them, did any of them make any

23 particular movements before you got back inside the pub?

24 A. Yeah, before I entered back into the pub, as I looked at

25 them, the one on the right-hand side seemed to disappear

41

1 into the market for a short time, and then I think he

2 came back into sight before I entered the pub.

3 Q. What did you think he was doing?

4 A. I wasn't sure at the time, to be honest.

5 Q. What did you think, appreciating that there was some

6 sort of threat, what did you think was going on?

7 A. I thought there might have been a fight or a group of

8 men fighting. That was my initial reaction, yes.

9 Q. For how long did you have them in view?

10 A. When I first came out, probably, yeah, between 5 and 10

11 seconds.

12 Q. In that period, did you notice anything else about them

13 beyond what you've told us, other than the three of them

14 initially walking down Stoney Street, one of them

15 breaking off and them holding these red sticks?

16 A. No, that's all I could make out.

17 Q. What caused you to go back in the pub? Did you ...?

18 A. I got dragged back in by someone behind me, so you know,

19 I was quite -- I was just more gazing at them really.

20 I didn't go back in of my own accord, someone behind me

21 was screaming, pulling me back in.

22 Q. Do you know who that was?

23 A. Yeah, that was my wife, Nichole, yes.

24 Q. Okay, if we can bring up another photograph

25 {DC7283/124}, we can see there a view from the inside of

42

1 the pub. Is it right that the door through which you

2 were pulled back was the door over on the right of the

3 screen beyond the partition?

4 A. That's correct.

5 Q. So the door through which you had come?

6 A. Correct.

7 Q. If we leave that on the screen for a moment, what was

8 then done by the people inside the pub?

9 A. As we got pulled back in I think it was a member of the

10 staff closed the door behind and there was a latch on

11 the top, and the member of staff pulled the latch up to

12 lock the door.

13 Q. So the door was secured at the top, but not at the

14 bottom?

15 A. At the top, no, top only.

16 Q. After the door had been secured, what did people in the

17 pub do?

18 A. There was a lot of screaming and I think most people

19 made their way to the back of the pub, where we

20 initially were sitting when we first went in.

21 Q. Where did you go, then?

22 A. Me and my friend Rudi, we stayed by the door, by the

23 windows.

24 Q. Were you aware what your other friends and your partner

25 were doing?

43

1 A. Not at that time, no.

2 Q. Why did you stay near the door?

3 A. I suppose I was curious to see what was going on,

4 really, because I still didn't have an understanding of

5 what was occurring on the street outside.

6 Q. May we bring up a CCTV still from the inside of the pub,

7 {AV0067/7}. Now, this is a still from around the time

8 that we're concerned with. Can we see you on this

9 still?

10 A. Yes.

11 Q. Where were you?

12 A. I've got the -- I'm just on the right-hand corner.

13 Q. So if we put the cursor on the screen over on the right,

14 are you being indicated there?

15 A. No, just come back one.

16 THE CHIEF CORONER: So you've almost got your back to the

17 camera?

18 A. Yes, I think that's me there, yes.

19 MR HOUGH: So initially, at any rate, there were a number of

20 people looking through the windows, but some of those

21 people retreated?

22 A. Yeah.

23 Q. Did you stay there looking through the windows, both the

24 glass windows of the pub doors and the glass windows

25 between the pub doors?

44

1 A. Correct, yes.  
 2 Q. What did you see of the men as you looked through those  
 3 windows?  
 4 A. Obviously as we went back in they got nearer towards the  
 5 pub, and I think initially one of them tried to enter  
 6 the pub on the other door, on the other side, but that  
 7 was all locked, so then they made their way to the door  
 8 we were in front of.  
 9 Q. Could you see anything about the man as he approached?  
 10 A. No, not as he approached. As he got to the door I could  
 11 make out a lot more.  
 12 Q. And what description can you give of him from that side?  
 13 A. As he got to the door I could make out he had an Arsenal  
 14 football top on and he also had a knife in his hand.  
 15 Q. Did you notice anything about the knife, how it  
 16 appeared?  
 17 A. It was a long sort of a kitchen knife, it was a long  
 18 blade on it, yes.  
 19 Q. As he got to the door, what did he do?  
 20 A. He tried to gain entry through the door we'd come back  
 21 in through, it was locked at the top, he kicked the door  
 22 and the bottom of the door started to flex because it  
 23 wasn't locked on the bottom, so I think that might have  
 24 encouraged him to try and give a bit more force to come  
 25 through the door.

45

1 Q. Did anyone on the inside do anything to stop that?  
 2 A. Yes, my friend Rudi, he put his foot against the bottom  
 3 of the door to secure it, so then when he tried to enter  
 4 again, there was no flex or give on the door, and it  
 5 gave the impression then that it was solid.  
 6 Q. Did he continue kicking the door?  
 7 A. He did, for a time, and he then started to, with the  
 8 butt of his knife, smash on the windows.  
 9 Q. Could you get any impression of his facial appearance  
 10 and his expression at the time?  
 11 A. Yes, I was standing right -- well, there was only the  
 12 glass between the two of us, so I had a good view. He  
 13 seemed pretty calm. He wasn't, to my impression, saying  
 14 anything. He just seemed quite calm and he was just  
 15 determined to try and get in through the door really.  
 16 It didn't seem to put him off that it was locked and  
 17 that's when he sort of made his attempt to go through  
 18 the glass.  
 19 Q. So an entirely calm expression?  
 20 A. Yeah, yeah. He wasn't shouting, he didn't look  
 21 flustered by it, he was just pretty calm and, he was,  
 22 yes, just trying to get through the door, really, yes.  
 23 Q. What else can you remember about his appearance: his  
 24 skin colour and hair?  
 25 A. Yes, he was of Asian appearance, black hair and with a

46

1 black beard.  
 2 Q. Did you know where the other two men were at that point?  
 3 A. I could see two other guys behind him moving around, but  
 4 they never approached the door; they were just behind  
 5 him.  
 6 Q. As he pounded on the glass, did it break? Did it give?  
 7 A. The windows did, yes, because they were little segments,  
 8 so they did give, yeah.  
 9 Q. But because the windows were only small segments, that  
 10 didn't give him access?  
 11 A. No, not at all, no.  
 12 Q. We can bring up a view of the scene from the CCTV,  
 13 {DC7181/309}. If we zero-in on the screen below, we see  
 14 a view with one of the attackers directly outside.  
 15 Where are you in the shot, if we can see you?  
 16 A. I'm in the left-hand corner of that photograph.  
 17 Q. So the man, probably the largest in the photograph with  
 18 his back to the screen?  
 19 A. Yes, correct.  
 20 Q. So you, by this stage, had moved a little way back from  
 21 the door?  
 22 A. Yeah.  
 23 Q. And is it your friend, Rudi, that we can see close to  
 24 the door?  
 25 A. Yes, he was the only one in front of me, so that would

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1 be Rudi at the door, yes.  
 2 Q. With his foot against the bottom?  
 3 A. Correct, yes.  
 4 Q. Now, we know that the time of this -- the real time, is  
 5 22.16.29, which is just -- which is -- the screen time  
 6 is 16 seconds behind real time, and that's just 20  
 7 seconds before the gunfire begins.  
 8 Could you see, as you were looking at the man,  
 9 anything else about what he was wearing?  
 10 A. Yeah, he had canisters strapped around his torso.  
 11 Q. And what colour were they?  
 12 A. I think they were black.  
 13 Q. In your witness statement you recall silver.  
 14 A. Okay, sorry, yes. Yes.  
 15 Q. What did you think they were?  
 16 A. Yeah, I thought it was some sort of a bomb.  
 17 Q. Did you now realise that this was a terrorist attack  
 18 rather than something gang or crime-related?  
 19 A. Yeah.  
 20 Q. How long did this kicking at the door last?  
 21 A. Maybe 10 to 20 seconds.  
 22 Q. Did something happen then to distract the attention of  
 23 any of the men outside?  
 24 A. Yeah.  
 25 Q. What happened?

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1 A. As the guy in the Arsenal top was attempting to smash  
2 the windows, a guy walked past behind his left shoulder  
3 and the two guys with him set upon him and then he went  
4 to join them.  
5 Q. How quickly did they move?  
6 A. Yeah, the guy sort of walked into the other two  
7 attackers, so they were straight on him and the guy in  
8 the Arsenal top, he actually, I think, ran over to join  
9 them.  
10 Q. Did they appear to be working in concert?  
11 A. Yeah, they was all -- all three of them were attacking  
12 the gentleman, yeah.  
13 Q. In your witness statement, you describe them as running  
14 at him like a pack of wolves?  
15 A. Yes, that's correct, yes.  
16 Q. As they got to him, what did they do?  
17 A. They were doing a stabbing motion into the torso area.  
18 Q. So they were making stabbing motions with their hands  
19 towards his torso area?  
20 A. Correct.  
21 Q. Could you see the knives connecting?  
22 A. No, because they had their backs towards me. I could  
23 just see their arms moving in and out quite quickly.  
24 Q. How many times did you see them striking?  
25 A. I'd say at least five.

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1 Q. What did you think you were witnessing? What did you  
2 think they were trying to do?  
3 A. I was under the impression they were trying to inflict  
4 as much injury to him as they could.  
5 Q. Did the man stay standing?  
6 A. He did. He bent over.  
7 Q. So he bent over, but didn't go down to the ground?  
8 A. No, I don't recall seeing him fall to the ground, no.  
9 Q. What did you and your friends in the front of the pub  
10 then do?  
11 A. My friend Rudi unlocked the top of the door and started  
12 to open the door.  
13 Q. What did you think he was trying to do?  
14 A. To go out and help the guy who was getting attacked.  
15 Q. What did you do?  
16 A. I pulled him back.  
17 Q. Was the door then closed again?  
18 A. Correct, yes.  
19 Q. So your friend had the impulse to go out but you didn't  
20 want him to put himself in harm's way?  
21 A. That's correct, yes.  
22 Q. At that point, what was the next thing you heard or saw?  
23 A. When they'd finished attacking the gentleman, the one in  
24 the Arsenal top, he started to walk back towards the  
25 pub.

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1 Q. Could you see whether he was reacting to anything?  
2 A. No, he just turned around and started to walk towards  
3 the door again.  
4 Q. What then did you see or hear?  
5 A. My first impression was the room in the pub, it filled  
6 up with blue lights.  
7 Q. So blue lights just flooding the interior?  
8 A. Yes.  
9 Q. Could you see what was going on outside through all this  
10 light?  
11 A. I could -- I mainly focused on the one guy in the  
12 Arsenal top. The other two had disappeared out my  
13 vision, I think, but yeah, I still had vision of one of  
14 them, yes.  
15 Q. What was he doing now?  
16 A. He was still walking towards us, but then I think his  
17 attention drew to what was behind him, and I think he  
18 turned around.  
19 Q. Could you see anything else happening outside?  
20 A. I think I could actually see police cars then, yeah.  
21 Q. You saw the police cars; coming from which direction?  
22 A. As you stand by that window, you have a clear view to  
23 the left-hand side on Stoney Street, and so my view on  
24 the right was limited, and so I seen police officers on  
25 my left-hand side looking out.

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1 Q. You saw some police officers on the left-hand side. Did  
2 they have guns?  
3 A. They were standing by a pillar and they had their arms  
4 raised as if they had a gun, but I couldn't quite make  
5 that out. This happened quite quick.  
6 Q. Did you hear sirens?  
7 A. I believe I did, yeah.  
8 Q. Were you able to hear clearly what was being said or  
9 what was happening in the street outside?  
10 A. No, I had no idea what was being said in the street.  
11 Q. As the man was, as you say, distracted and started  
12 moving slightly to the side, what then did you see or  
13 hear?  
14 A. I heard a volley of bullets.  
15 Q. Could you actually see the confrontation in which the  
16 man was shot?  
17 A. I'd seen he was looking at the police officers and then  
18 next thing I knew there was the sound of gunfire, so  
19 then I dropped to my knees to take cover.  
20 Q. As you describe it, it doesn't sound as though you saw  
21 the confrontation very clearly, the actual movements of  
22 the officer and the man; is that right?  
23 A. That's correct, yes.  
24 Q. You say you heard a volley of bullets and then you  
25 instinctively got down?

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1 A. Correct.  
 2 Q. From where did the bullets seem to be coming, which  
 3 direction?  
 4 A. To be honest, I didn't really have any idea of  
 5 direction. Yeah, it was -- yeah, I couldn't really  
 6 answer that.  
 7 Q. As you went down, did you feel anything?  
 8 A. Not initially, no.  
 9 Q. Did you see what was going on around you inside the pub?  
 10 A. There was a lot of screaming by then and I looked round  
 11 the back as well, and everyone seemed to be low down and  
 12 crouching.  
 13 Q. Did you remain down in a crouched or lowered position?  
 14 A. Yeah, I was crawling around still keeping low, so below  
 15 the window line.  
 16 Q. Could you see whether anyone around you had been hurt?  
 17 A. Yeah. A gentleman to my left was on the floor and there  
 18 was quite a lot of blood.  
 19 Q. Where was it coming from?  
 20 A. The head.  
 21 Q. Were you able, however, to see the wound that he'd  
 22 suffered?  
 23 A. No.  
 24 Q. Could you tell what had hurt him?  
 25 A. I couldn't physically tell, but I had a good impression

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1 it was probably a bullet.  
 2 Q. May we look at a few more CCTV stills, {AV0067/12}.  
 3 This is timed at 22.16.47 in real time, so that's just  
 4 a few seconds, three or four seconds, before the bullets  
 5 are fired. Is that you by the door that we can see?  
 6 A. Yeah, that's me nearest the window, yes.  
 7 Q. So you had a grandstand view, apart from the effect of  
 8 the lights outside?  
 9 A. Correct, yeah.  
 10 Q. And I think Rudi immediately behind you?  
 11 A. Yes.  
 12 Q. And then the gentleman in the checked shirt we know is  
 13 Neil McLelland, the man who was injured?  
 14 A. Yes.  
 15 Q. Then page 16 of the same document, please {AV0067/16}.  
 16 This is the moment the attackers were shot. You are  
 17 still outside -- directly outside the window, and we can  
 18 see Mr McLelland leaning forward to look. Were you  
 19 aware of him being there at all?  
 20 A. No, I wasn't, no. I didn't realise he was behind me.  
 21 Q. And then {AV0067/20} of the same document, please. Now,  
 22 that's the moment of the shots being fired. If we look  
 23 immediately to your left, we can see a sort of cloud of  
 24 smoke that we believe is where the bullet entered the  
 25 window before striking Mr McLelland. So the bullet

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1 came, if that's right, directly past you?  
 2 A. Yes, it looks that way, yeah.  
 3 Q. Were you even aware of it?  
 4 A. No.  
 5 Q. And then {AV0067/21} please of the same document, we see  
 6 you, as you've described, starting to go down, and  
 7 Mr McLelland evidently affected.  
 8 {AV0067/22}, you've now gone into a crouching  
 9 position, as you've described, and then {AV0067/23},  
 10 you've gone into a crouching position and moved  
 11 towards -- a little further back away from the window.  
 12 Does that all accord with your memory of how you  
 13 moved?  
 14 A. Yeah.  
 15 Q. What could you see Rudi doing as you were moving around  
 16 at a low level?  
 17 A. Yeah, I didn't really have sight of Rudi, to be honest,  
 18 but looking at that, it looks like he's kept standing  
 19 up.  
 20 Q. And {AV0067/28} of the same document, please. Now, it  
 21 looks as though some people have gone over towards  
 22 Mr McLelland to assist him?  
 23 A. Yes, that would be Rudi on top of him giving him first  
 24 aid.  
 25 Q. And then {AV0067/30}, please. And {AV0067/31}.

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1 Is this right: that Rudi went to Mr McLelland's  
 2 assistance giving him first aid really very quickly.  
 3 A. Yes, very, very quickly, yes.  
 4 Q. That last still is just 15 to 16 seconds after the shots  
 5 were fired, so he was providing assistance really very  
 6 quickly?  
 7 A. Yeah.  
 8 Q. We can take that off screen now.  
 9 Did somebody at that point throw a towel from the  
 10 bar for assistance?  
 11 A. Yes, Rudi requested it to stop the bleeding and  
 12 I believe someone near the bar passed over a bar towel,  
 13 yes.  
 14 Q. At this point did your partner notice that you had some  
 15 blood on your face?  
 16 A. She did, yes, and when I seen her after the first round  
 17 of shots, she pointed out that I had blood all over my  
 18 face. I wasn't aware.  
 19 Q. Did you check yourself for any wounds?  
 20 A. Yes, I just felt my face and my ear and just did a check  
 21 with my hand, and yes.  
 22 Q. Could you find any?  
 23 A. I couldn't find any at the time, no.  
 24 Q. Was Rudi continuing to provide first aid for  
 25 Mr McLelland?

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1 A. Yeah, he stayed with him the whole time.  
 2 Q. I think by this stage, he was applying pressure to  
 3 a head wound?  
 4 A. Correct.  
 5 Q. But nevertheless, was Mr McLelland continuing to bleed  
 6 out?  
 7 A. Yeah.  
 8 Q. After a time, did you turn back to the pub door to see  
 9 what was going on?  
 10 A. I did, yeah.  
 11 Q. What did you see or hear?  
 12 A. There was a volley of bullets, and because I was more  
 13 concerned with the gentleman who had been injured, when  
 14 the bullets stopped, I opened the door.  
 15 Q. So you were opening the door to try to get help for the  
 16 man who had been injured?  
 17 A. Yeah, I just needed some assistance because I knew it  
 18 was a serious situation here.  
 19 Q. You were doing that even though there had been  
 20 bullets -- gunfire ringing out just a few seconds  
 21 before?  
 22 A. Yeah, that's right, yes.  
 23 Q. As you opened the door, could you see outside?  
 24 A. I could, yeah.  
 25 Q. What could you see there?

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1 A. In my line of sight next to a pillar, I remember seeing  
 2 three police officers, and then directly in front of me,  
 3 there was the guy in the Arsenal top on his back.  
 4 Q. How far away from you was he?  
 5 A. He was probably, when I opened the door, probably  
 6 2 metres.  
 7 Q. Did you notice anything else about him apart from that  
 8 he was lying?  
 9 A. He was lying down, I remember him being handcuffed and  
 10 his legs were moving, they were twitching, so I knew he  
 11 wasn't dead, yeah.  
 12 Q. Did he still have the garment you thought was a suicide  
 13 vest?  
 14 A. He did, yes, that was still in place.  
 15 Q. As you got outside, did you say anything to try to  
 16 attract the officers' attention?  
 17 A. Yes, we shouted at the police to bring a paramedic in.  
 18 Q. Were the officers saying anything back?  
 19 A. They were shouting at me to get back in the pub.  
 20 Q. You describe in your witness statement this turning into  
 21 something of a shouting match?  
 22 A. Yes, it did, yeah.  
 23 Q. You give the impression that you were, by this point,  
 24 really desperate to get help for the man inside?  
 25 A. I was, yeah. I was fearful that because he had a head

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1 injury that every second was critical.  
 2 Q. If we bring up another still on screen {AV0067/32}, can  
 3 we see there you down in a crouching or kneeling  
 4 position with the door open looking out on this first  
 5 occasion?  
 6 A. Yes, that would be me, yes.  
 7 Q. After that short exchange with the officers, did you  
 8 close the door again?  
 9 A. I did, yeah.  
 10 Q. After you did, did you hear or see anything else going  
 11 on outside?  
 12 A. Yeah, there was another volley of bullets.  
 13 Q. After those bullets, did a time come when you opened the  
 14 door once again?  
 15 A. Yes, that's correct.  
 16 Q. How long after?  
 17 A. Maybe 10 seconds.  
 18 Q. Why were you opening the door again?  
 19 A. To get a paramedic into the pub.  
 20 Q. So once again, looking out of the pub to call for help  
 21 despite the danger?  
 22 A. Correct, yes.  
 23 Q. What did you do to ask for assistance this time?  
 24 Speaking?  
 25 A. I was just shouting, but I wasn't aware if they could

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1 hear me, so I did a motion like that (indicates) towards  
 2 the officers to try and make out that someone was  
 3 seriously injured in the pub.  
 4 THE CHIEF CORONER: Just do that motion again.  
 5 MR HOUGH: For the transcript, you are making a motion of a  
 6 hand going across the neck, a death motion?  
 7 A. Correct.  
 8 Q. May we put on screen a further document, {AV0067/33}, we  
 9 can see you have opened the door again on this further  
 10 occasion?  
 11 A. That's correct, yes.  
 12 Q. We can take that off screen. As you looked outside on  
 13 that second occasion, could you again see the attacker  
 14 lying 2 or 3 metres away?  
 15 A. Yes, correct, he hadn't moved.  
 16 Q. Were his legs continuing to move, to twitch?  
 17 A. I don't recall seeing him move at that time, no.  
 18 Q. Did you, after a while, after a short time, close the  
 19 pub door again?  
 20 A. I did, yes.  
 21 Q. Were there any further occasions when you opened the  
 22 door?  
 23 A. I can't remember how many times, maybe two to three, so  
 24 maybe one more, but I'm not 100 per cent on that.  
 25 Q. At one point over this period, did you move further back

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1 into the pub?  
 2 A. I did at one point, yeah. That's when I got made aware  
 3 that I had blood on my face.  
 4 Q. Why did you do that?  
 5 A. To check on the people I was with, that they were okay.  
 6 Q. After a short time of going out in this way and trying  
 7 to call for help, did you become aware of armed officers  
 8 approaching the pub?  
 9 A. Yeah. At first one of the armed officers came to the  
 10 door on the left-hand side.  
 11 Q. I think we've got a -- so the left-hand side door is the  
 12 door opposite from you through the partition?  
 13 A. Correct, yes.  
 14 Q. We understand that to be at about 10.30, about  
 15 14 minutes after the initial gunfire; would that accord  
 16 with your recollection?  
 17 A. Yeah, to be honest I had no idea of time from when it  
 18 first started, but that would probably fit in, yes.  
 19 Q. What did the officer do as he got to that door?  
 20 A. He tried to open it by banging on it, but it was locked.  
 21 Q. Did you do anything about getting the door opened?  
 22 A. I think I shouted to open the door because I think the  
 23 bar staff had the keys for that one, that was key  
 24 locked, so they needed the keys to open that.  
 25 Q. Did they proceed and open it?

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1 A. They did.  
 2 Q. What did the officer then say or do on getting entry?  
 3 A. He was shouting "Evacuate", to get everyone out the pub.  
 4 Q. Where were you at the time that that shout was being  
 5 made?  
 6 A. I was -- I think I was one of the first out, I was on  
 7 the door, I think I opened it again.  
 8 Q. We can bring up another still image {AV0067/36}. Is  
 9 this the scene of officers evacuating people from the  
 10 pub?  
 11 A. Yes, that's how I recall it, yeah.  
 12 Q. You say you were one of the first out; is that because  
 13 they were effectively shepherding people out?  
 14 A. Yes, as soon as they got -- I think the intention was  
 15 just to evacuate the pub as quickly as they could.  
 16 Q. Which direction did you turn after going out of the pub?  
 17 A. I turned left.  
 18 Q. And how far did you go?  
 19 A. Probably about 10 metres, no more, and I stopped.  
 20 Q. Why did you stop?  
 21 A. I was waiting for everyone else I was with to make sure  
 22 they got out safely.  
 23 Q. Did they all join you?  
 24 A. Everyone apart from Rudi.  
 25 Q. We know that Rudi, in fact, remained with Mr McLelland;

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1 is that something you discovered later?  
 2 A. That's correct, yes.  
 3 Q. When you gathered the rest of your group together, did  
 4 you follow the police cordon away from the area?  
 5 A. Yes, we went away, as instructed.  
 6 Q. Now we saw in the CCTV imagery that as the police were  
 7 shepherding people out of the pub, there was a line of  
 8 police officers by the side of them, some of whom had  
 9 ballistic shields; do you remember any of that?  
 10 A. I remember passing a lot of -- more officers as we left  
 11 the scene, they were coming to the scene, yeah,  
 12 I remember passing quite a few, yeah.  
 13 Q. During your walk away from the scene, did you become  
 14 aware that you had in fact been injured as a result of  
 15 the gunfire?  
 16 A. Yeah, mainly because when I was standing on the street  
 17 people were passing me asking me what I'd done, so  
 18 I didn't really realise how much blood was on my face,  
 19 and then I got a stinging sensation in my knee.  
 20 Q. What were the nature of your injuries?  
 21 A. I am led to believe it was shrapnel from the actual  
 22 police bullets.  
 23 Q. Did you, as you got away from the scene, find, I think,  
 24 an Addison Lee taxi and persuade the driver to take you  
 25 to hospital?

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1 A. Yes, there was already a lady in there and I asked if  
 2 I could jump in to make my way to hospital, yes.  
 3 MR HOUGH: Thank you very much. Those are all my questions.  
 4 I will just check if anyone else has any questions for  
 5 you.  
 6 No, I don't detect that anybody does. Thank you  
 7 very much for your evidence, also for all your efforts  
 8 to get help for Mr McLelland on the night who of course  
 9 did survive, despite the injury to his head.  
 10 THE CHIEF CORONER: And again, thank you very much indeed  
 11 for coming, not only, as you say, to give your account,  
 12 but thank you for everything you did that night.  
 13 A. Thank you.  
 14 THE CHIEF CORONER: Thank you.  
 15 MR HOUGH: Sir, would that be a convenient moment for our  
 16 break?  
 17 THE CHIEF CORONER: Yes, we'll break there and sit again at  
 18 11.50.  
 19 (11.30 am)  
 20 (A short break)  
 21 (11.52 am)  
 22 MR HOUGH: Sir, we have now reached the end of evidence from  
 23 eyewitnesses to the attack.  
 24 THE CHIEF CORONER: Yes.  
 25 MR HOUGH: And we are moving to some expert evidence, first

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1 of all from Michael Andrews, on collision investigation .  
 2 PC Michael Andrews. Perhaps he can be called .  
 3 PC MICHAEL ANDREWS (sworn)  
 4 THE CHIEF CORONER: Good morning, officer.  
 5 A. Good morning, sir. Michael Andrews, police constable  
 6 based within the Metropolitan Police Service within the  
 7 Forensic Collision Investigation Unit where my role is a  
 8 senior forensic collision investigator for the east of  
 9 London.  
 10 THE CHIEF CORONER: Thank you. Please make yourself  
 11 comfortable. I know you've got quite a few documents  
 12 there, so if it's easier to sit and spread things out,  
 13 that's absolutely fine .  
 14 A. Thank you, sir .  
 15 Questions by MR HOUGH QC  
 16 MR HOUGH: PC Andrews, you have already given your name and  
 17 rank and details . You appreciate I'm asking you  
 18 questions first on behalf of the Coroner and that you  
 19 may then get some questions from other lawyers.  
 20 You've also identified your role as senior forensic  
 21 collision investigator ; is it right that you joined the  
 22 Metropolitan Police Service in 2001?  
 23 A. That is correct, sir , yes.  
 24 Q. And have been investigating collisions as a forensic  
 25 collision investigator since 2008?

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1 A. That's correct, January 2008, sir , yes.  
 2 Q. You set out your qualifications at page 3 of your main  
 3 report. Perhaps you could summarise those for us,  
 4 please.  
 5 A. So I have the City & Guilds Certificate in forensic  
 6 police collision investigation . I am also a certified  
 7 automotive engineer, a member of the Institute of the  
 8 Motor Industry and a member of the Institute of Traffic  
 9 Accident Investigators amongst numerous other collision  
 10 investigation and vehicle examination qualifications ,  
 11 sir .  
 12 Q. Thank you. In relation to this case, were you  
 13 instructed to reconstruct the movements of the van, the  
 14 Renault Master panel van, as it moved across the bridge,  
 15 as a result of which Xavier Thomas and  
 16 Christine Archibald both died?  
 17 A. That's correct, sir , yes.  
 18 Q. You prepared, I think, two main reports into this  
 19 matter. First of all a main report running to 49 pages,  
 20 dated 29 November 2017?  
 21 A. That's correct, sir , yes.  
 22 Q. And an additional report dated Wednesday,  
 23 14 November 2018.  
 24 A. That's correct, yes.  
 25 Q. I'll deal with those in order, the main report first , if

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1 I may.  
 2 As regards scene examination, when were you called  
 3 out to the scene of this terrorist attack?  
 4 A. Sir, I was called to the scene at 11.00 pm on the day in  
 5 question, sir , from home as the on-call senior for the  
 6 Metropolitan Police Service .  
 7 Q. When were you given access?  
 8 A. I was allowed access to the scene at approximately  
 9 7.00 am on the morning of Sunday the 4th, so  
 10 approximately nine hours later .  
 11 Q. For your examination, was the road closed to allow you  
 12 full access?  
 13 A. That's correct, sir . London Bridge was closed, allowing  
 14 me access to the entirety of the bridge, up to  
 15 Duke Street Hill , where the van crashed.  
 16 Q. In that examination, were you assisted by two colleagues  
 17 surveying the scene with laser scanners?  
 18 A. That's correct, sir . Two of my colleagues attended with  
 19 me.  
 20 Q. Did you prepare an album of photographs of the scene,  
 21 showing your observations which you prepared into  
 22 an album?  
 23 A. That's correct, sir , an album containing 58 photos.  
 24 Q. May we begin with some basic information about  
 25 London Bridge, which you provide from page 4 of your

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1 report through to page 6, and may we bring up for this  
 2 purpose a view of the bridge from the north, taken from  
 3 your album, {DC5005/6}. This is, I think, a view based  
 4 on one of your -- or taken from one of your scene  
 5 photographs, looking at the bridge from the north?  
 6 A. That's correct, sir . Approximately level with the  
 7 junction with Monument Street, perhaps a little bit  
 8 further south.  
 9 Q. Could you describe the roadway over London Bridge?  
 10 A. London Bridge itself is subject to a 20-mile an hour  
 11 speed limit, it's known as -- also known as the A3, if  
 12 you were to look at a map. There are three lanes in  
 13 each direction for the majority. Lane one, as you can  
 14 see to the left of this photograph, is bound by a solid  
 15 white line, it is a bus lane for -- at any time. Lanes  
 16 two and three, moving to the right of the photograph,  
 17 therefore, are for all other vehicles, and lanes two and  
 18 three are separated by a central lane line .  
 19 Q. How wide are each of the lanes?  
 20 A. Each lane is about 3 metres wide, sir .  
 21 Q. We can see a central reservation, a kerbed central  
 22 reservation, separating the two carriageways. How high  
 23 is the kerb of that central reservation?  
 24 A. The central reservation kerb was approximately  
 25 15 centimetres, so half a ruler that you would have

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1 taken to school as a school child.  
 2 Q. We can also see there is a substantial kerb each side of  
 3 the roadway going up to the barrier, the balustrade at  
 4 the water side. How high is the kerb on each side?  
 5 A. Sir, the kerbs to the footpath were 10 centimetres, 0.1  
 6 of a metre high.  
 7 Q. How wide is the kerb on each side?  
 8 A. So the east footpath was 7 metres wide, that being the  
 9 one on the left -hand side of the photograph as you look,  
 10 and the west footpath, 5 metres wide, although it did  
 11 vary across the length of the bridge.  
 12 Q. So the footpath on which the van drove was 7 metres  
 13 wide?  
 14 A. 7 metres wide, sir, yes.  
 15 Q. May we go now to page 8 of the same document, please  
 16 {DC5005/8}. We can see here fairly clearly an image of  
 17 the wall at the side of the bridge. How high is the  
 18 wall itself and then the railing above?  
 19 A. So the wall itself was 0.8 of a metre high, with the  
 20 railing measuring 0.3 of a metre, so that's  
 21 80 centimetres and 30 centimetres on top of the wall,  
 22 a total of 1.1 metre, 110 centimetres.  
 23 Q. Turning to your section on environmental features on  
 24 page 6 of your report, how was the condition of the road  
 25 surface on the roadway over the bridge?

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1 A. Both the road and the footpath were in a good condition.  
 2 They didn't have any defects which would have adversely  
 3 affected either a vehicle or a pedestrian travelling  
 4 across.  
 5 Q. At the time of the incident, would the footpath and  
 6 pavement have been dry or wet?  
 7 A. My view, sir, has come purely from CCTV, I wasn't there  
 8 at the time, and it appeared that the road surface in  
 9 the CCTV displayed a sheen like it was damp, but it  
 10 wasn't raining at the time, looking at the footage, so  
 11 it probably was raining earlier in the evening.  
 12 Q. We've heard evidence and actually seen footage  
 13 suggesting that there was rain around 7 o'clock that  
 14 evening.  
 15 A. Okay, sir.  
 16 Q. How was the street lighting along the centre of the  
 17 bridge?  
 18 A. The street lights were present in the centre of the  
 19 carriageway, so within the central reservation, and they  
 20 consisted of double street lights, so a single pole with  
 21 one light either side over each carriageway. There's  
 22 currently generally two styles of street light that you  
 23 will see, the amber, the sodium high-pressure light  
 24 which casts an amber hue over the road surface, and  
 25 there's now a newer whiter LED type, and it appeared it

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1 was those white LED types. With me not getting to the  
 2 scene until 7 o'clock, I couldn't tell you if every  
 3 street light was working, but the CCTV certainly  
 4 indicates that they were operational.  
 5 Q. So a generally well lit carriageway?  
 6 A. Yes.  
 7 Q. As well as the poles for the street lights in the  
 8 central reservation, was there also towards the north of  
 9 the bridge a CCTV pole in the central reservation?  
 10 A. That's correct, sir, yes.  
 11 Q. You identify that at paragraph 3.1.4 of your report as  
 12 being 71 metres south of the junction between  
 13 London Bridge and Monument Street?  
 14 A. Yes, sir.  
 15 Q. Which would place it towards the north of the bridge?  
 16 A. Yes, sir.  
 17 Q. And this pole is important, is this right, because  
 18 you've used it as a reference point from which a number  
 19 of distances are measured?  
 20 A. Yes, sir. It's an easily recognisable point to measure  
 21 from.  
 22 Q. Thank you. May we now begin to identify the marks you  
 23 noted at the scene and what you deduced from them. You  
 24 cover those from page 7 of your report. And may we go  
 25 first of all to page 7 of the document we've been

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1 looking at {DC5005/7}. Moving south from the north end  
 2 of the bridge, down the southbound carriageway where the  
 3 van went, where did you first identify marks going  
 4 south, significant marks, and what were they?  
 5 A. So the marks that I actually attributed to the van, sir,  
 6 there was three separate sets of what I would describe  
 7 as tyre prints actually on -- within the east footpath.  
 8 They were all generally commenced towards the east kerb,  
 9 in terms of the southbound carriageway, so the left as  
 10 you look on the photograph, and moved towards the left,  
 11 as you look in the photograph, towards the east wall of  
 12 the bridge, and then back towards the southbound  
 13 carriageway.  
 14 The tyre marks themselves appear to be from the van  
 15 as the tread pattern matched the tyres fitted to the van  
 16 and later, viewing CCTV, it's quite apparent that the  
 17 van created the marks.  
 18 Q. Looking at the photograph here, we have a marker at  
 19 point 35.  
 20 A. That's correct, sir.  
 21 Q. A yellow marker with a number 35 on it.  
 22 A. That -- sorry.  
 23 Q. What does that indicate?  
 24 A. Number 35 was the first visible tyre mark that I could  
 25 see. The black box was not at the scene at the time and

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1 the yellow marker, as you describe, is just to the right  
 2 of that as you can see that in the photograph on the  
 3 left-hand side.  
 4 Q. I was going to say, was there also any other mark on or  
 5 near the kerb around here?  
 6 A. Yes, sir, there's what I would call a kerb strike mark.  
 7 It is a more pronounced mark indicating that the vehicle  
 8 had been driven up the kerb at that point.  
 9 Q. If we look at page 8 of the same document again  
 10 {DC5005/8}, can we see on this photograph the tyre mark  
 11 which you identified as the first moving south over the  
 12 pavement?  
 13 A. Yes, sir. The easiest way to spot it, approximately in  
 14 the middle of the photograph, some people may have  
 15 issues with the screen, but you can see a blue --  
 16 a green stud towards the foreground, towards the bottom  
 17 of the photo, and what I believe is a blue stud towards  
 18 the background, and in between those two studs is  
 19 a curved black mark, which is curving to the right as  
 20 you look at the photograph.  
 21 Q. Do we see that that curved mark points towards or  
 22 appears to continue towards the yellow marker with the  
 23 number 36 on it further in the pathway?  
 24 A. That's correct, sir, yes. So that was the end of that  
 25 mark that I could appreciate on the footpath. The

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1 difficulty I had, what was particularly difficult within  
 2 the bridge, is the marks were actually more noticeable  
 3 when you looked northbound, more than likely due to the  
 4 angle of the sun.  
 5 Q. Looking at your paragraph 4.2.4, what did you deduce  
 6 from the mark and its curve?  
 7 A. So given the southbound travelling vehicle, sir, in  
 8 order for the vehicle to have mounted as you look at the  
 9 photograph, the left-hand footpath, the east footpath,  
 10 it must have been steered generally to the left.  
 11 However, that mark is curved to the right. So it  
 12 tends to indicate the van was steered sharply onto the  
 13 footpath, but as it was being driven over the footpath,  
 14 it was steered back to the right, a steering input by  
 15 the driver.  
 16 Q. At what point, by reference to the CCTV camera, did the  
 17 mark commence?  
 18 A. So the mark commenced with it being about 75 metres  
 19 south of the pole and concluded 94 metres south of the  
 20 pole with it being approximately 4 metres at point 36 on  
 21 the photograph, 4 metres from the kerb edge.  
 22 Q. May we now move to page 9 of the album, {DC5005/9}.  
 23 I think this photograph shows the next stretch of  
 24 pavement; is that right?  
 25 A. Sorry, sir?

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1 Q. Does this show the next stretch of pavement looking  
 2 south?  
 3 A. Yes, it does sir, yes.  
 4 Q. What were you able to observe here?  
 5 A. Again, there's a set of tyre marks. You can see in the  
 6 foreground, number 37 on the left-hand side with the  
 7 green stud, and number 39 to the yellow stud on the  
 8 right-hand side. Whilst the marks aren't particularly  
 9 appreciable, certainly on the screen in front of me, at  
 10 the start, the most appreciable on the screen in front  
 11 of me is the second green stud up in the photograph, and  
 12 you can see it again curving round to the left. These  
 13 marks commenced 125 metres south of the camera pole, so  
 14 approximately 32 metres after the other one had ended,  
 15 with the ... I've got the tyres the wrong way round in my  
 16 report, I've just noticed.  
 17 So the offside mark starting at 39 would have been  
 18 4 metres east of the kerb and the one at 37, the  
 19 left-hand side of the photograph, 6 metres east of the  
 20 kerb.  
 21 Q. Does this show the van's movement as it was steered back  
 22 towards the carriageway after that first mounting?  
 23 A. It does, sir, yes. You can see it clearly had turned to  
 24 the right in the view of the photograph. So this  
 25 photograph was taken looking southbound.

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1 Q. If we look at page 10 of the album {DC505/10} I think we  
 2 can see those marks from the opposite direction, looking  
 3 north and, as you've indicated, shown a bit clearer when  
 4 one looks north?  
 5 A. Yes, sir. The marks throughout on the bridge were more  
 6 appreciable looking northbound, probably due to the  
 7 angle of the light.  
 8 Q. Did you make any observations towards the end of these  
 9 marks where we see the yellow board with the number 40  
 10 on it?  
 11 A. I did, sir. You can see the white substance in that  
 12 photograph, and it was also mingled with what appeared  
 13 to be a blood-like substance. I have no idea who that  
 14 may have come from.  
 15 THE CHIEF CORONER: You've told us the footway is about  
 16 7 metres wide.  
 17 A. That's correct, sir.  
 18 THE CHIEF CORONER: So if we look at this photograph, the  
 19 mark in the distance we can see closest to the  
 20 balustrade or the wall would be about a metre from that  
 21 wall --  
 22 A. Yes.  
 23 THE CHIEF CORONER: -- would that be...  
 24 A. Approximately, sir, yes.  
 25 THE CHIEF CORONER: Because you said it's about 6 metres

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1 from the kerb.  
 2 A. That's when it commenced, sir, yes.  
 3 MR HOUGH: But based on these images, it wouldn't appear  
 4 that any part of the van would have struck the  
 5 balustrade in this mounting?  
 6 A. There's no indication at all, sir, no, from damage to  
 7 the balustrade.  
 8 Q. Looking now at your paragraph 4.2.8, did you then  
 9 identify marks from a second mounting of the kerb?  
 10 A. I did, sir. Again, they commenced at a sharp angle onto  
 11 this footpath, the left-hand footpath as you travel  
 12 south, and at the start, the orientation of the marks  
 13 indicated the van was being steered left onto the  
 14 footpath.  
 15 Q. Can I pause you and just show another photograph on  
 16 screen, page 13, please {DC5005/13}.  
 17 A. The silver box was not there. That was mine.  
 18 I neglected to move it before I took the photograph.  
 19 But the nearside mark, so the left-hand mark by number  
 20 7, nearside being passenger side, commenced 160 metres  
 21 south of the same CCTV camera pole and again, the  
 22 offside mark, 168 metres, which is the mark to the top  
 23 and right of number 7.  
 24 Q. Did you find kerb strike marks here too?  
 25 A. I did, indeed, yes.

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1 Q. What type of curve was described by the marks you found  
 2 here?  
 3 A. So, as you can probably see on the image, the right-hand  
 4 mark, if you go from just to the right of the silver  
 5 case up to the yellow number mark, there's  
 6 a discolouring to the road surface. That's more than  
 7 likely a continuation of the mark that I couldn't  
 8 appreciate at the scene.  
 9 But the nature of the mark and certainly the  
 10 nearside mark indicates the van was being steered to the  
 11 left, the marks are curved to the left. As they  
 12 continued, their orientation changed and went back to  
 13 the right, indicating, again, a steered movement to the  
 14 right.  
 15 Q. Bring up another photograph just at this point,  
 16 {DC5005/15}, please. Does this show continuation of the  
 17 marks as you observed and marked them out?  
 18 A. Yes, sir. So you have the yellow being the passenger  
 19 side and -- sorry, the yellow being the driver side and  
 20 the white being the passenger side, the direction of  
 21 travel being from the camera lens towards the railway  
 22 bridge at London Bridge, and you can see the curved  
 23 right nature in the marks.  
 24 Q. So was it over this stretch of pavement that we're  
 25 looking at that the van started to be steered back right

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1 towards the carriageway?  
 2 A. Indeed, sir, yes.  
 3 Q. At this second mounting, as the van headed towards the  
 4 balustrade, how close did it get?  
 5 A. It got to within 20 to 30 centimetre of that wall and  
 6 balustrade in the left of the image.  
 7 Q. If we view this from the other direction, we'll see it  
 8 on page 17 {DC5005/17}. Can we see there looking at the  
 9 blue markers and the trajectory they describe, how close  
 10 the side of the van got to the wall at the outside of  
 11 the kerb?  
 12 A. Yes, sir, and if you follow the blue markers up the  
 13 image, you have an item of black debris there and  
 14 a white marker immediately above that. As I mentioned  
 15 earlier, the easiest way that I would refer to the  
 16 30 centimetres is my school ruler that I used to take to  
 17 school.  
 18 Q. If we look at page 16, I think we'll see that particular  
 19 area even more clearly {DC5005/16}.  
 20 A. What you must bear in mind is that when I marked these  
 21 marks, the markers were to the right extremity of the  
 22 tyre mark, so the actual tyre mark itself lies within  
 23 the left extremity, and as you look at it, you can  
 24 probably make out a fainter white line within the shadow  
 25 of the railing, which would probably be the extremity of

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1 the tyre to the passenger side.  
 2 Q. Thank you. We can also see two broken pieces of  
 3 plastic, one closer to the viewer and one slightly  
 4 further away. What were they?  
 5 A. That was the nearside door mirror from the van, sir.  
 6 Q. So the casing of the nearside wing mirror?  
 7 A. That's correct, sir, yes.  
 8 Q. Now, at what height was the railing by comparison with  
 9 the van and its door mirror?  
 10 A. So, as I mentioned, the wall was 0.8 and the railing was  
 11 0.3, so a total of 1.1 and the van's offside mirror  
 12 measured in its post-impact position was also  
 13 1.1 metres. Comparable, but with a lack of any defined  
 14 scratching on top of the silver on the railing I cannot  
 15 be certain whether the wing mirror came off as a result  
 16 of an impact with the top of the railing, the  
 17 balustrade, or as a result of an impact with  
 18 a pedestrian.  
 19 Q. If the wing mirror had scratched along the railing for  
 20 a distance, would you have expected to see scratch marks  
 21 there?  
 22 A. I would have expected to, sir, yes.  
 23 Q. And there weren't any?  
 24 A. There weren't any, no.  
 25 Q. So that would suggest either that the wing mirror had

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1 had a sharp initial contact rather than a scraping  
 2 contact with the top of the wall, or a contact with  
 3 a pedestrian?  
 4 A. Indeed, sir. Combined -- as you mentioned, the lack of  
 5 scratching combined with the forensic evidence from  
 6 Louissa Marsh about Mr Thomas and his impact, I would be  
 7 surprised if it was not him that impacted that wing  
 8 mirror, but I cannot be certain by any means.  
 9 Q. We'll come to that when we deal with your second report  
 10 a little later.  
 11 Now, as you have indicated, it is likely from the  
 12 CCTV footage that it's in this stretch of road that  
 13 Xavier Thomas and Christine Delcros were both struck?  
 14 A. That's indeed correct, sir, yes.  
 15 Q. If we look at this area of pavement, we can see that if  
 16 they had been over to the left side with the vehicle  
 17 bearing down on them from behind, they would have had  
 18 nowhere to go to the left?  
 19 A. Indeed, sir, yes.  
 20 Q. Did you then, moving south over the bridge, identify  
 21 a further set of marks, suggesting another mounting of  
 22 the kerb?  
 23 A. They did, sir, so a third mounting of the kerb. The  
 24 nearside mark being 257 metres at the passenger side and  
 25 the offside, the driver's side being 259 metres south of

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1 that same CCTV camera pole.  
 2 Q. I think we can see those if we look at page 25 of the  
 3 same bundle {DC5005/25}. Can you describe the curve  
 4 which the marks made at this point?  
 5 A. So, again, the orientation and where the marks commence  
 6 indicated the van had been steered left back onto that  
 7 footpath, but at the commencement of the marks visible  
 8 in the photographs, again, you can see the yellow studs  
 9 curving round to the right as you look at the image, it  
 10 again indicated the steering angle in the vehicle had  
 11 been changed back towards the right. Again, another  
 12 steering input by the driver.  
 13 Q. If we look at the yellow markers and the marks beside  
 14 them, it would appear that the van didn't go out as far  
 15 as towards the wall on this occasion as it had on the  
 16 previous occasion?  
 17 A. On the previous two, sir.  
 18 Q. On the previous two.  
 19 A. The closest it got to the wall was on the second  
 20 movement onto the bridge.  
 21 Q. Now, if we bring up now page 28 of the bundle of the  
 22 album {DC5005/8}, where did the marks end as the van was  
 23 being driven back towards the carriageway?  
 24 A. So the nearside, the passenger side mark ended at 15,  
 25 that being the nearside passenger side, and it

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1 continued, as you can see it then at 18 there was  
 2 a scuffing to the road surface between the white studs  
 3 approximately centre to the picture.  
 4 Q. I think we can see that a bit more clearly on the next  
 5 page, 29. {DC5005/29}. Is that the scratch mark you  
 6 were referring to?  
 7 A. Indeed, sir, yes. So quite a significant gouge to the  
 8 road surface. Again, I cannot be certain what created  
 9 this, but it's possible that as the van bounced off the  
 10 kerb that its nearside, its passenger side, one of its  
 11 passenger side wheel rims dug into the road surface.  
 12 Q. So that's the body or chassis of the van bouncing on its  
 13 suspension and causing the wheel rim to connect with  
 14 the road surface?  
 15 A. Potentially, yes.  
 16 Q. Looking at your paragraph 4.2.15, did that scratch mark  
 17 lead on to further marks?  
 18 A. So there was a tyre mark from there in lane two of the  
 19 carriageway, southbound carriageway.  
 20 Q. We can see that on the next page, {DC5005/30}.  
 21 A. At number 19, that was visible 316 metres south of the  
 22 same camera pole, and around 4 metres west of that east  
 23 kerb, so 4 metres to the right as you look at the  
 24 photograph, or a metre from that bus lane line.  
 25 Q. This depicts, does it, the van continuing at an angle

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1 across the southbound carriageway?  
 2 A. It certainly appears to, sir. Between the spokes of the  
 3 motorcycle wheel and the back end of the Toyota that you  
 4 can see visible in the photograph, there is another --  
 5 a further red stud, you can just about make that out,  
 6 the path indicating the van has come off the footpath.  
 7 Q. We can just see it through the spokes of the motorcycle  
 8 front wheel towards the top?  
 9 A. That's correct, sir, yes. So if you were to come down  
 10 from the rear lights of the Toyota in the picture, to  
 11 meet the wheel, the top of the wheel of the motorbike,  
 12 and go to the right just a little bit, there's a red  
 13 mark visible through the spokes of the motorcycle.  
 14 Q. Did you also find marks on and around the central  
 15 reservation?  
 16 A. That's correct, sir. So there was, at the time I -- on  
 17 the east side of the central reservation, the right-hand  
 18 side is --  
 19 Q. Can we go to page 32 first of all {DC5005/32}.  
 20 A. The side nearest the southbound carriageway as you  
 21 travel south.  
 22 Q. Can we see that marked out with your markers 21 to 23  
 23 here?  
 24 A. Indeed, sir, the actual tyre mark itself commenced at  
 25 23, which is the third yellow cone up on the photograph,

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1 and as you look at that photo, hopefully you'll be able  
 2 to see quite a defined black edge to the tyre mark as it  
 3 runs across the top of the central reservation. That  
 4 mark extended up to the yellow cone at 24, which you  
 5 can't read, but is just beneath the bus as you look at  
 6 the photograph.  
 7 Q. I think we might see that on {DC5005/33}. We can see it  
 8 a bit more clearly there.  
 9 A. And that mark was 12 metres long, it was -- number 23  
 10 was 337 metres south of the camera pole. Given the  
 11 position of the marks, the van clearly mounted the  
 12 central reservation and headed in towards the -- headed  
 13 towards the northbound carriageway as it travelled  
 14 south. That mark must have been created by a nearside  
 15 tyre.  
 16 Q. Why is that?  
 17 A. Passenger side. If it had been the driver's side, the  
 18 offside, the van would have collided with that lamppost.  
 19 It physically could have not fit if it was a driver's  
 20 side mark.  
 21 Q. Does that mark have any distinctive characteristics?  
 22 A. It does, sir. The mark displayed what I would describe  
 23 as an underinflated tyre mark. Particularly as you look  
 24 towards the second blue stud up, so just into the  
 25 northbound carriageway, you can probably make it out

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1 better, there's two black lines on the extremity of the  
 2 tyre. So what happens there is the wheel rim of the  
 3 tyre without any air in the tyre sits on the body of the  
 4 tyre itself and the heat built up in the tyre is  
 5 sufficient to create, in effect, parallel lines for  
 6 a tyre mark, an underinflated tyre mark.  
 7 Q. Given both the fact of those lines and the particular  
 8 appearance of them, what could you deduce about the  
 9 state of the nearside front tyre?  
 10 A. Given that, as I said already, it's nearside, it means  
 11 one of the tyres is likely to have punctured at this  
 12 point. There were no underinflated tyre marks prior to  
 13 this point, which is indicative of it therefore being  
 14 punctured at that point. But because the mark didn't  
 15 continue all the way to where the van came to a rest,  
 16 which you can just see at the top of the photograph,  
 17 I can't be certain if at that point whether the tyre was  
 18 completely deflated, as in had no air in, 0 psi, or was  
 19 deflated to a lesser degree or greater degree, depending  
 20 on how you wish to view it.  
 21 Q. So it's unlikely that by this point the tyre was  
 22 completely flat?  
 23 A. It's lost a proportion of its air at this point, sir.  
 24 It must have been able at this stage for the mark to  
 25 have been created like that for the wheel rim to have

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1 made contact with the tyre carcass, but in order to do  
 2 that, we have obviously the bouncing up and down on the  
 3 suspension and the kerbs, which may have allowed it to  
 4 momentarily do it because it hadn't lost all its air.  
 5 Q. Just a couple of further questions about that. You said  
 6 that it was one of the nearside tyres which was deflated  
 7 by this stage. Are you able to tell us based on the  
 8 condition of the van as found which of the two?  
 9 A. Yes, sir, the front side, the front nearside, the front  
 10 passenger side.  
 11 Q. Second question: were there any of the previous marks  
 12 attributed to the van which displayed the signs of  
 13 an underinflated, partially deflated tyre?  
 14 A. None of them which would be indicative of that, sir.  
 15 For an underinflated tyre we generally tend to see the  
 16 two thick black outer marks and, as you look through the  
 17 images, and as you've shown them, we can see a tyre  
 18 print throughout, and we don't have those clearly  
 19 defined edges which I would expect to see if the tyre  
 20 was flat.  
 21 Q. So do we take it that the tyre started to deflate  
 22 somewhere around the central reservation where it went  
 23 over?  
 24 A. Indeed, sir, yes.  
 25 Q. May we now, looking at your 4.2.18, look at some

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1 particular marks on the central reservation kerb, first  
 2 of all page 31 of the album {DC5005/31}. Were you able  
 3 to detect any particular marks on the central  
 4 reservation kerb?  
 5 A. Again, sir, there was two very defined scratch marks  
 6 within the central reservation at the number boards  
 7 closer to us.  
 8 Q. Page 32 might show it a bit more clearly.  
 9 A. So numbers 21 and 22, and particularly 21 you can see  
 10 quite a defined scratch mark there.  
 11 Q. What do you think made those?  
 12 A. The underside of the van, sir. At the vehicle  
 13 examination there was a number of scratch marks under  
 14 the van and in viewing some of the CCTV, you can also  
 15 see sparks coming off from under the van, from the back  
 16 of the van. So, in essence, the underside of the van  
 17 impacted with that 15 centimetre high kerb.  
 18 Q. May we now go to page 35 of the album which shows the  
 19 next stretch of road south of that central reservation  
 20 where the van went over. We know, and it's obvious from  
 21 the position of the van, that it passed down this  
 22 stretch of road toward the traffic lights going the  
 23 wrong way down the northbound carriageway?  
 24 A. That's correct, sir, yes.  
 25 Q. Did it leave any marks over this stretch of the road?

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1 A. So, again in the distance of the photo you have two  
2 yellow cones to identify the marks.  
3 Q. But just before we get to those, on the stretch of road  
4 between the marks you've just identified and beyond the  
5 traffic lights, so parallel with the scaffolding on the  
6 pavement side, are there any marks?  
7 A. Sir, between the conclusion of the underinflated tyre  
8 mark, which I mentioned at the back of the bus, and  
9 those marks there, there were no appreciable marks, sir.  
10 Q. You were going to tell us about some further marks,  
11 further south in that northbound carriageway. For that  
12 purpose, may we have the next page {DC5005/36}. Can you  
13 tell us about these marks, please?  
14 A. So, again, sir, we have a set of tyre marks curving to  
15 the right, 25 being the driver's side and 27 being the  
16 passenger side, the orientation of the van makes that  
17 quite clear, being steered to the right and, as you can  
18 see, they're straddling the lines which at this point is  
19 between lanes one and two of the northbound carriageway.  
20 So the vehicle travelling southbound within the  
21 northbound carriageway.  
22 Q. Where do they lead?  
23 A. They lead across the lane one as you can see by the  
24 marker studs towards the two number boards by the  
25 driver's side of the van. So across there and across

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1 the west footpath. And the marks concluded at an impact  
2 with the railings, which is just south of the Barrow Boy  
3 & Banker pub and the railings protecting the drop to the  
4 Boro Bistro area.  
5 Q. How did the marks appear; what were their particular  
6 characteristics over this stretch leading up to the  
7 point of collision?  
8 A. So the marks were quite clearly steered to the right,  
9 and closer examination of them showed that they were  
10 what I would describe as striated. This is a very  
11 typical type of mark where a vehicle is travelling too  
12 fast for the steered angle that is desired. It cannot  
13 maintain its curved path.  
14 Q. What does a striated mark look like?  
15 A. So what we get in a striated mark is if you were to --  
16 to put it as bluntly as possible, if you were to think  
17 of what I would describe as a skid mark where you  
18 slammed the brakes on, you would see, generally,  
19 a straight line with the ridges of the tyre going  
20 through that straight line, quite a black defined mark.  
21 In an incident of where the tyre mark is still  
22 rotating but struggling to hold the amount of grip to  
23 the right, in essence, the tyre slips out of the curved  
24 path but it's still rotating, so we get little black  
25 lines, or striations within the tyre mark, across the

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1 tyre mark.  
2 Q. And you've indicated in that explanation that the marks  
3 across the tyre mark itself suggest something about how  
4 the vehicle is being managed?  
5 A. It does. The vehicle was being steered to the right,  
6 and the marks are created when the cornering force, so  
7 that steered path force, overcomes the level of grip  
8 available. So the tyres are fighting for two things:  
9 they want to travel at that speed that the vehicle is  
10 travelling at, and they want to make that steered path,  
11 they want to turn that corner. So the whole time it's  
12 what I would describe as the tyre/grip trade-off:  
13 they're fighting each other.  
14 If it exceeds the level of available grip, then  
15 something's got to give; it's either the speed's got to  
16 reduce or the curved path has got to -- it can't be  
17 maintained.  
18 So the striations are created because it's slipping  
19 outside of that desired curved path, the steered path.  
20 Q. Were there any other characteristics of these marks that  
21 told you anything about the state of that nearside front  
22 tyre?  
23 A. In particular at that point, no, but the creation of the  
24 marks and the reasons as to why they were created may  
25 have been exacerbated by the fact that that tyre was

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1 underinflated.  
2 Q. Looking at your 4.2.23, was there an absence of certain  
3 marks that would have told you something about the tyre?  
4 A. So, as I previously mentioned, we're talking about  
5 a tyre being deflated completely or partially inflated,  
6 so partially underinflated. Within that mark, there was  
7 no wheel rim scratch marks on the road surface, so as  
8 I mentioned before on the previous scratch mark in the  
9 southbound carriageway, it's likely that the wheel rim  
10 dug in and created the scratch mark. So if you think  
11 that the tyre is slipping outside of the curved path and  
12 it is partially underinflated, it allows some movement  
13 in that tyre, with potential movement of the tyre there  
14 is also the possibility to have scratch marks and wheel  
15 rim scratches.  
16 With a lack of wheel rim scratches at that point, it  
17 would suggest the tyre was not completely deflated at  
18 this point.  
19 Q. So given the way the van was being steered, as shown by  
20 those striated marks, you would have expected, had the  
21 tyre been fully deflated, to see scratch marks as well?  
22 A. Indeed, yes.  
23 Q. You didn't see them --  
24 A. Mm-hm.  
25 Q. -- so the front nearside tyre, which we'll see ended up

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1 fully deflated, probably wasn't fully deflated over this  
 2 stretch, so over any part of the journey?  
 3 A. That's correct, sir, yes. Ultimately I cannot tell you  
 4 what was in that tyre prior to the journey. I know it  
 5 suffered a full deflation because of the vehicle exam  
 6 that I did, and at some stage during that journey, or  
 7 prior to it coming to rest, it must have suffered  
 8 a puncture. The likelihood, given the movement of the  
 9 van and the physical evidence and the marks, is  
 10 indicative of it suffering a partial deflation at the  
 11 kerb strike on the central reservation and gradually  
 12 deflating fully to the point when I got to the scene it  
 13 was deflated.  
 14 Q. Now, may we now look at page 39 of the bundle just to  
 15 see some of the final marks that you identified.  
 16 Did you find marks very close to the point of  
 17 collision?  
 18 A. I did, sir. So the 26 and 28, the outer two cones on  
 19 the image, are the end of these tyre marks that I was  
 20 just describing. 29 was a secondary mark and it runs  
 21 across the photograph from right to left between the two  
 22 red studs. So as the van impacted with the railings  
 23 which you can see had become dislodged, the front of the  
 24 van in essence slows down quicker than the rest of it  
 25 and therefore it rotates around its centre of gravity.

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1 The mark between 29 and the red stud next to the rear  
 2 driver's side wheel is an indication of that rotation  
 3 and the sideways movement of the van.  
 4 Q. May we look at the next page {DC5005/40}, just for  
 5 another view of that, a closer view.  
 6 A. And as you can see, it goes from 29 up to the edge of  
 7 the van, so the van -- that tyre must have moved  
 8 sideways across that -- across, creating the mark, and  
 9 that's because of the impact with the railings and its  
 10 changing speed and momentum has caused it to rotate  
 11 around its centre of gravity.  
 12 Q. I think we saw on the CCTV footage, just a sign of the  
 13 van bouncing off and moving slightly clockwise.  
 14 A. Mm-hm.  
 15 Q. Is that the motion that would have made this mark?  
 16 A. Yes, so the tyre would have still been in contact with  
 17 the footpath at that time.  
 18 Q. Now, we can take that off screen now.  
 19 Is it also right that you identified a number of  
 20 other marks on the road surface which you concluded were  
 21 not attributable to the movements of the van, but no  
 22 doubt attributable to other traffic?  
 23 A. Yes, sir, that's correct, so there were various scratch  
 24 marks and other tyre marks which, when I saw the CCTV,  
 25 it's quite clear had nothing to do with the van.

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1 Q. I'm not going to take you through those. Somebody else  
 2 may, if they wish, but it's evident from the CCTV  
 3 footage that they had nothing to do with it.  
 4 Did you, based on your observations of the marks,  
 5 prepare a plan which shows the various marks you found  
 6 and enables us to trace the movement of the van?  
 7 A. That's correct, sir, yes.  
 8 Q. And I think we can see that at {DC5007/1}. Can we see  
 9 there marked in red the various tyre marks you've told  
 10 us about, showing the three mountings of the kerb?  
 11 A. That's correct, sir, yes. So in essence, going from the  
 12 top of the plan to the bottom, so north to south, the  
 13 first two are the first mounting. The third, coming  
 14 down, is the second mounting. The fourth mark coming  
 15 down is the third mounting. So the first two were  
 16 separated because they weren't appreciable, and you then  
 17 have the scratch mark and the tyre mark across the  
 18 southbound carriageway and then the marks across the  
 19 central reservation, prior to the bottom set of marks  
 20 which were those tyres marks I spent a lot of time  
 21 describing being striated, at the bottom of the plan.  
 22 Q. Thank you very much.  
 23 Now, we can take that off screen and we'll come back  
 24 to it shortly. May I now ask you about the van, which  
 25 you addressed from page 12 of your report. First of

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1 all, was it your view, as you described, that the impact  
 2 with the railings caused the van to rotate clockwise?  
 3 A. Yes, sir.  
 4 Q. And if we look at {DC5005/44}, we might see another  
 5 indication of that movement. Do we see from this  
 6 photograph that the rotation clockwise caused the  
 7 nearside load door of the van to contact with the  
 8 traffic light pole?  
 9 A. That's correct, sir, quite a defined pole impact, for  
 10 want of a better word, indicating that it rotated into  
 11 that pole.  
 12 Q. Now, if we continue looking at that photograph, can we  
 13 see that the nearside front tyre, as you've described,  
 14 was fully deflated by the time that you got to it?  
 15 A. Yes, sir.  
 16 Q. And the nearside rear tyre was not deflated?  
 17 A. That's correct, yes.  
 18 Q. If we go next to {DC5005/50}, we can see here a focus on  
 19 the nearside front corner, the corner of the bumper unit  
 20 and headlight casing.  
 21 A. Mm-hm.  
 22 Q. What did you find here?  
 23 A. So that appeared to me to be a fibrous-type mark, so  
 24 there was fibres within in, clothing fibres, and you can  
 25 see streaks within the photograph, and if you were to

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1 look very carefully, certainly towards the upper left of  
 2 those streaks, there's almost like pimples. I think of  
 3 an old jumper that's got lots of little bobbles on it.  
 4 It kind of looked like that to me, as the best  
 5 description.  
 6 Q. I think we've got a closer view on the next page  
 7 {DC5005/51}.  
 8 A. So there appear to me to be tiny fibres within the  
 9 plastic.  
 10 Q. Are those what we can see slightly over towards the  
 11 left?  
 12 A. Predominantly towards the left, sir, yes.  
 13 Q. What does that suggest?  
 14 A. So in impacts, particularly with forcible contact,  
 15 there's a phenomenon called plastic fibre transference,  
 16 I've seen it on two occasions in 11 years of collision  
 17 investigation work, and in essence the forceful contact  
 18 occurs over a split second, probably less than about  
 19 a quarter of a second. That impact is high energy, and  
 20 energy cannot be lost, it has to be maintained. So what  
 21 can occur is melting of the plastic components. So that  
 22 melting occurs over a very rapid time and then very  
 23 quickly re-solidifies, which enables fibres to be  
 24 plucked from clothing, externally if it is an impact  
 25 with a pedestrian. It also happens internally in

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1 a forceful impact with a driver and other people within  
 2 a vehicle on plastics. Because it melts and  
 3 re-solidifies very quickly, as I say, it plucks the  
 4 fibres, and you can also get the reciprocal, you can  
 5 also get some melting of the plastic and melted plastic  
 6 being deposited on the item of clothing.  
 7 Q. Thank you. I'll ask you about that phenomenon later  
 8 when we come to your second report.  
 9 May we now look at {DC5005/52} of the same. Do we  
 10 see that on the nearside front you also detected that  
 11 the door mirror had become detached, consistent with  
 12 your finding the casing on the pavement?  
 13 A. That's correct, sir, yes. In essence, if you have the  
 14 B&Q sign, follow it up and to the left, there's  
 15 a vertical black mount for it, just the camera side, my  
 16 side, of the front passenger window.  
 17 Q. We can also see over to the right of that shot the dent  
 18 which was caused to that front nearside load door as  
 19 a result of the control panel of the traffic light being  
 20 forced into it.  
 21 A. Yes, sir, from the rotation as we described.  
 22 Q. And then at page 41, please, of the same bundle  
 23 {DC5005/41}, looking at the collision from the other  
 24 side, can we see, not surprisingly, that there was very  
 25 extensive collision damage to the offside front?

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1 A. Indeed, sir. The wing had been peeled back. There's  
 2 another photograph which shows the angle of the front  
 3 driver's side wheel, and when you compare the two you  
 4 can quite clearly see that the front wheels are  
 5 misaligned to one another. For your steering you want  
 6 them to be relatively the same and we ended up with one  
 7 almost at 90 degrees to the other.  
 8 What's also quite of note in this image, if you look  
 9 at the gap in the railings where the railings would have  
 10 been, you can see the gap between what would have been  
 11 the footpath and where the railings should have been,  
 12 quite an impact to do that.  
 13 Q. Thank you. If we turn now to section 5 of your report  
 14 on page 14, and we can take that photograph off the  
 15 screen, did you and your colleagues perform  
 16 an examination of the van?  
 17 A. That's correct, sir. In essence, my part of that was  
 18 the mechanical side of it, was it mechanically sound to  
 19 be on the road. And I conducted that in line with  
 20 a forensic exam and we basically delved in and out as  
 21 and when required and I was able to when a certain part  
 22 had been forensically examined, my mechanical side being  
 23 done post the forensic side of it.  
 24 Q. And it's a fairly common task, as I understand it, for  
 25 someone in your position to examine a vehicle which has

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1 been heavily damaged to determine whether there were any  
 2 faults before the collision which would have or could  
 3 have contributed to it.  
 4 A. That's correct, sir. As I mentioned earlier,  
 5 I'm a certified automotive engineer. Every fatal  
 6 collision that I have reconstructed and certainly all my  
 7 colleagues have, we examine that vehicle to see if there  
 8 is a mechanical reason as to why the incident occurred.  
 9 Q. Was there any pre-existing defect which could have  
 10 contributed to this collision?  
 11 A. No, sir.  
 12 Q. Looking at 5.1.2 and 5.1.3 of your report, did you find  
 13 damage to the offside front wheel, as you described, the  
 14 gross misalignment?  
 15 A. Yes, sir, and obviously that would be -- a misalignment  
 16 of the steering wheel could potentially impact on what's  
 17 occurred and the steered path. So the wheels are  
 18 connected to what is called the steering rack, which  
 19 eventually goes to the steering wheel in the car by  
 20 tracked control arms. Where the tyre had gone into the  
 21 railings it had bent this track control arm so it's  
 22 just, in essence, a piece of metal, and it had bent it  
 23 out of shape allowing the two wheels to be approximately  
 24 at 90 degrees to each other. So one was going to the  
 25 right, whereas the other one would have been going

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1 straight on.

2 Q. I think also the damage to the offside front caused some  
3 consequent damage to the brake connections?

4 A. That's correct, sir. So in that wheel arch, between the  
5 main body of the chassis of the vehicle to the brake  
6 calipers will actually brake the wheels, was a flexible  
7 hose. That flexible hose carries the brake fluid which,  
8 when you put your foot on your brake pedal, causes your  
9 brakes to slow you down.

10 That flexible hose has a crimped end attached to the  
11 body work and the extension due to the movement of the  
12 wheel had caused the hose to be ripped from the crimped  
13 end.

14 Q. Were you satisfied that all of this damage was caused in  
15 the collision?

16 A. Yes, sir, based on a number of factors. The -- during  
17 the vehicle exam, the brake fluid had escaped from that  
18 side, so the brakes in this vehicle were on a diagonal  
19 split. The front driver's side was connected to the  
20 rear passenger's side and the reciprocal, and within  
21 where the brake fluid is contained under your engine,  
22 there's a slight barrier between the two separate sides.  
23 There was still fluid in the other side and the brakes  
24 still braked those wheels. They didn't brake the front  
25 driver's side and the rear passenger's side because

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1 there was no fluid in there.

2 Given the impact damage with the railings and CCTV  
3 footage showing that the vehicle was driven and braked  
4 and the angle that the tyre had come to and therefore  
5 the extension of that hose pipe, brake hose,  
6 I'm confident that it occurred at that impact with those  
7 railings.

8 Q. We will come a little later to the CCTV image showing  
9 that there was braking.

10 Now, you've referred to the nearside front tyre  
11 deflating, and when it is likely to have started  
12 deflating, namely around the contact with the central  
13 reservation. Would that deflation have had any effect  
14 on the management of the van?

15 A. It will have affected handling. It will have affected  
16 its ability to steer to some degree.

17 Q. Do we take it, though, from your findings that it would  
18 only have had that effect from the point of the mounting  
19 of the central reservation?

20 A. That's highly likely, sir, but as I previously stated,  
21 I cannot tell you what state that tyre was in prior to  
22 the impact, however, given the state of the other tyres,  
23 it's highly likely it was reduced to the state it was  
24 because of the collision and it quite possibly was  
25 correctly pressurised at the time of the start of the

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1 incident.

2 Q. So before the van struck the central reservation, was  
3 there anything about it, any damage, which would have  
4 affected, adversely affected the steering and management  
5 of the van?

6 A. No, sir.

7 Q. I think also in your examination of the van you found  
8 hair on the underside, which was attributable to  
9 Christine Archibald?

10 A. That's correct, sir, yes.

11 Q. May we now move through to your reconstruction of the  
12 movement of the van. I think you used your various  
13 observations to reconstruct the movement of the van and  
14 its speed, both from the marks you made and from  
15 a review of the CCTV evidence?

16 A. That's correct, sir, yes.

17 Q. And for that purpose I think you prepared a 335-page  
18 album with one frame after another from the CCTV camera  
19 looking down over the bridge?

20 A. That's correct, sir, yes.

21 Q. May we go back to your plan with the marker numbers,  
22 {DC5007/1}. You have told us that the van was driven  
23 south and mounted the footpath first 75 metres south of  
24 the camera pole.

25 A. Mm-hm.

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1 Q. I think it was driven over the footpath for 72 metres in  
2 that first mounting?

3 A. That's correct, sir, yes.

4 Q. And, as you've told us, there was some evidence of blood  
5 at the end of those markings?

6 A. Yes.

7 Q. The van then mounted the footpath for a second time, you  
8 told us 160 metres south of the camera pole?

9 A. Yes.

10 Q. And it was driven over the footpath for what distance  
11 then?

12 A. 48 metres prior to rejoining the carriageway.

13 Q. If we look at {DC5011/6}, can we see just over to the  
14 left, a CCTV shot showing the van as it's mounting the  
15 kerb for the second time?

16 A. It's about to be steered to the left, I believe, and  
17 mount the kerb, yes, for a second time.

18 Q. And then may we go to page 109 of the same document  
19 {DC0511/109}. Can we see the van as it is leaving the  
20 kerb on the occasion of this second mounting?

21 A. That's correct, sir, yes.

22 Q. Now it was this mounting of the kerb which affected  
23 Xavier Thomas and Christine Delcros based on their last  
24 recorded positions on CCTV; is that right?

25 A. That's correct, sir, and that was particularly

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1 noticeable with the lady in white trousers that you can  
 2 see in this image.  
 3 Q. Is this right: that you couldn't, from your observation  
 4 of CCTV and the marks, be sure that the van had struck  
 5 Xavier, but you later were informed about other forensic  
 6 evidence on that subject and dealt with that in your  
 7 second report?  
 8 A. That's correct, sir, yes.  
 9 Q. And you've told us that in this second mounting, the van  
 10 went very close to the bridge wall and at that point,  
 11 the nearside door mirror struck the wall or a pedestrian  
 12 and came off.  
 13 A. That's correct, sir, yes.  
 14 Q. Did you perform a calculation of the speed of the van  
 15 over this mounting?  
 16 A. I did, sir.  
 17 Q. Now, did you do that first of all by taking the position  
 18 of the van in two CCTV stills?  
 19 A. That's correct, yes.  
 20 Q. May we go to {DC5010/8}. Was this the first still you  
 21 used?  
 22 A. That's correct, yes.  
 23 Q. And then {DC5010/12} of the same document. Was this the  
 24 other still that you used?  
 25 A. Yes, sir.

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1 Q. And did you seek to calculate the speed of the vehicle  
 2 over that distance which was the second mounting of the  
 3 kerb?  
 4 A. That's correct, sir, yes. In essence, speed is distance  
 5 divided by time, we talk about miles per hour and that  
 6 is how many miles do you travel in one hour. So knowing  
 7 a distance from a curved path between fixed points gives  
 8 me the distance factor of that equation, and therefore  
 9 I just need the time. In essence, CCTV is a collection  
 10 of still images that when you play through, creates the  
 11 moving image. If you think back again to your school  
 12 days, you used to do the scribbles and you used to do  
 13 the flick pad, you had still images and then they would  
 14 move whatever you may have drawn creating that moving  
 15 image. That's what we have with CCTV.  
 16 So there's a gap, a time gap between each image, and  
 17 if we can establish that time gap between each image  
 18 with a number of images I have a length of time, so  
 19 I have the time element of the equation and then from  
 20 there get the speed.  
 21 Q. I think you identified that there was 0.04 of a second  
 22 between each frame?  
 23 A. That's correct, sir, yes, for this camera.  
 24 Q. You had 131 frames between those two, so 5.24 seconds.  
 25 A. Yes.

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1 Q. Distance, 68.75 metres, I think.  
 2 A. That's correct, sir, yes.  
 3 Q. And what was your speed calculation?  
 4 A. So that comes out at 13.12 metres a second.  
 5 Q. And in miles per hour?  
 6 A. 29 miles an hour.  
 7 Q. So on the second mounting of the pavement a speed  
 8 calculation of 29 miles per hour, and is that quite  
 9 a precise calculation?  
 10 A. It is, sir, yes. I would not hesitate to say the van  
 11 was travelling at about 30 miles an hour. Of course, it  
 12 must be remembered that that's an average, so it could  
 13 be going faster at one end and slower at the other.  
 14 Q. I think over that distance, there's no sign from the  
 15 brake lights on the CCTV that it was being braked?  
 16 A. No, sir.  
 17 Q. May we now have {DC5011/139} on the screen. Can we see  
 18 that as the van was leaving the pavement on this second  
 19 occasion, it was appearing to scatter pedestrians before  
 20 it?  
 21 A. Yes, sir. So not only behind it in the image, but  
 22 I believe this is an impact with a pedestrian just on  
 23 the front driver's side corner, which the next image  
 24 I think in my album showed a pedestrian moving again.  
 25 I do not know who the pedestrian was.

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1 Q. We've heard about pedestrians struck in that area.  
 2 Then if we look next, just to make the comparison at  
 3 page 164 of the same bundle, we can see the van is there  
 4 steered from that position of striking the pedestrians  
 5 back to the left about to make the third mounting of the  
 6 kerb?  
 7 A. That's correct, sir, yes.  
 8 Q. And if we look to the left, can we see a crowd of  
 9 pedestrians not far from a bus stop?  
 10 A. That's correct, yes.  
 11 Q. Is it right that it appears from this image that the van  
 12 is being driven and aimed at a group of pedestrians?  
 13 A. It's certainly being steered up the footpath, sir. What  
 14 was going through the driver's head, I could only  
 15 speculate.  
 16 Q. But nothing to affect his steering to prevent him  
 17 steering as he wanted to?  
 18 A. No, sir. At this stage the van had -- or the driver of  
 19 the van had the capability of steering it, braking it  
 20 and accelerating it.  
 21 Q. May we now turn to the third mounting of the pavement,  
 22 very briefly before the break. Your paragraph 7.2.14,  
 23 back to the main plan, {DC5007/1}. At what point did  
 24 the van mount the kerb for the third time and for what  
 25 distance did it travel?

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1 A. So it's the fourth set of red markings down. Again, the  
 2 marks were created as it's already on the footpath, but  
 3 the marks were for at least 44 metres on this occasion,  
 4 prior to rejoining that southbound carriageway.  
 5 Q. And that movement was captured on CCTV more clearly than  
 6 any of the others; is that right?  
 7 A. It certainly was. The entirety of the movement was  
 8 captured from the CCTV, the images you've been showing,  
 9 and also I've seen it on bus CCTV as well.  
 10 Q. It was in this mounting that the van collided with  
 11 Christine Archibald and then carried her forward?  
 12 A. That's correct, sir, yes.  
 13 Q. Can we bring up {DC5010/13}. Can we see that that's the  
 14 point of initial impact?  
 15 A. It's around about that stage, sir, yes.  
 16 Q. As we know, she was caught under the offside front tyre  
 17 and pushed across the carriageway; is that your  
 18 understanding too?  
 19 A. That's correct, sir, yes.  
 20 MR HOUGH: Sir, would that be a convenient moment for our  
 21 lunch break?  
 22 THE CHIEF CORONER: We'll break there and we'll sit again at  
 23 2 o'clock.  
 24 (1.00 pm)  
 25 (The Luncheon Adjournment)

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1 (2.10 pm)  
 2 MR HOUGH: Good afternoon, Mr Andrews. You know you remain  
 3 under oath?  
 4 A. Yes, sir.  
 5 Q. We had been discussing your reconstruction of the second  
 6 mounting of the footpath by the van, and I was just  
 7 going to deal with your calculation of the speed on that  
 8 occasion, which you address at paragraph 7.2.16, and  
 9 also on page 43 in your appendix 5.  
 10 A. It's the third movement onto the van, sir.  
 11 Q. Pardon me, sorry?  
 12 A. It's the third movement onto the van that calculation.  
 13 THE CHIEF CORONER: Third, yes.  
 14 A. 7.2.16 was the third --  
 15 Q. Yes, I'm sorry, you are quite right, the third mounting  
 16 of the pavement.  
 17 I think you calculated the speed on this mounting by  
 18 taking two stills, which you identify as stills 9 and 12  
 19 in your album MPA9?  
 20 A. That's correct, sir, yes.  
 21 Q. If we can look at those {DC5010/11} should, I think, be  
 22 the first. That's the first of those stills, is it?  
 23 A. That's correct, sir, yes.  
 24 Q. Then {DC5010/14} of the same album, please. I think  
 25 that's the second of those stills and they mark, do

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1 they, the start and end of the third mounting?  
 2 A. That's correct, sir, yes.  
 3 Q. Did you once again work out the time taken by the number  
 4 of frames and the time period between frames?  
 5 A. Exactly the same method, sir, yes.  
 6 Q. What was your distance and speed calculation on this  
 7 occasion?  
 8 A. Distance of 78.3 metres over a time of 5.12 seconds.  
 9 Q. Again, giving a speed of?  
 10 A. 15 metres per second, or just over, which is 34 miles  
 11 an hour.  
 12 Q. Now, on this occasion we know, as you said earlier, the  
 13 van struck Christine Archibald, but didn't pass fully  
 14 over her?  
 15 A. That's correct, sir, yes.  
 16 Q. Are you able to explain from your viewing of the footage  
 17 and from the marks why it didn't pass fully over her?  
 18 A. At 34 miles an hour I'd normally expect a pedestrian  
 19 involved in an impact with a vehicle to be projected  
 20 forward and up to some degree over the bonnet. We're  
 21 obviously talking about a reasonably high-sided vehicle  
 22 in terms of this van. We also have the van in essence  
 23 bouncing, for want of a better word, up and down, its  
 24 suspension, due to the impacts of the kerb and the  
 25 manoeuvres.

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1 So that, with the bouncing and the movement,  
 2 combined with the -- meant that the front driver's side,  
 3 the offside of the tyre, couldn't pass over her and in  
 4 essence, dragged her along the road surface.  
 5 Q. Now, comparing this speed of 34 miles per hour with your  
 6 calculation of 29 miles per hour for the previous second  
 7 mounting, does that suggest that the van over this  
 8 period was being marginally accelerated?  
 9 A. Marginally, sir, yes, we have a difference of 5 miles  
 10 an hour.  
 11 Q. Is it right, again, from both the observations and the  
 12 speed calculations, and also from the CCTV footage, that  
 13 there was no braking at any point up to this stage?  
 14 A. It would certainly appear that way, sir. There were no  
 15 emergency-style tyre marks. Whilst that in itself isn't  
 16 definitive, because the van was fitted with an anti-lock  
 17 braking system, at the times when it was in view on the  
 18 CCTV there were no visible brake lights to indicate  
 19 there was any manner of braking, emergency or lesser.  
 20 Q. At what point did you first see any sign of braking from  
 21 the vehicle and its lights?  
 22 A. It was, in essence, just prior to it mounting the  
 23 central reservation.  
 24 Q. If we bring up on screen {DC5011/298}. Now this,  
 25 I think, is an image of the van after it struck

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1 Christine Archibald before it has reached the central  
 2 reservation?  
 3 A. That's correct, sir, yes.  
 4 Q. If we focus on the rear lights we can see the extent to  
 5 which they're illuminated.  
 6 A. Yes, sir.  
 7 Q. Then if we look next at {DC5011/309} of the same file,  
 8 let's move slightly further across to the right, towards  
 9 the central reservation, can we see that the lights  
 10 appear to be brighter?  
 11 A. Yes, sir, and the other significance is there also  
 12 appears to be a light in the centre of the van, a third  
 13 brake light.  
 14 Q. So both the illumination of the third brake light and  
 15 the brightness -- the additional brightness that we can  
 16 see from the main rear lights, indicates that there is  
 17 braking going on at that point?  
 18 A. Yes, sir.  
 19 Q. And that's, I think, just before the van mounts the  
 20 central reservation?  
 21 A. That's correct, sir, yes.  
 22 Q. That's the first time in the -- certainly over the  
 23 second and third mountings where the van is visible and  
 24 there's any sign of braking?  
 25 A. That's correct, sir, yes.

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1 Q. Looking at your paragraph 7.2.21 --  
 2 A. Mm-hm.  
 3 Q. -- it's right, isn't it, that the van was seen in the  
 4 rear camera, rear-mounted camera of a bus which was  
 5 stationary at the south end of the bridge?  
 6 A. That's correct, sir, yes.  
 7 Q. Using the footage from that camera, did you calculate  
 8 the speed over the particular stretch where the van  
 9 struck Christine and carried her along?  
 10 A. So the stretch from -- is from basically lane two of the  
 11 southbound carriageway towards the central reservation  
 12 and ... I believe that was 27 miles an hour. I've lost  
 13 my place.  
 14 THE CHIEF CORONER: 7.2.22 I think is the ...  
 15 A. 27 miles an hour, sir, yes. And that incorporated,  
 16 I think, going over the central reservation.  
 17 MR HOUGH: I think for that calculation, you took two  
 18 frames. If we look at the first one, {DC5010/18}.  
 19 A. That's correct, sir. I was just looking at my images to  
 20 confirm exactly where the calculation I took it from.  
 21 As you can see, there's an expansion joint just in front  
 22 of the wheels, on the bridge there, an expansion joint  
 23 for the bridge, and it's from that point until when you  
 24 move to the next image, the end of the straight ahead  
 25 arrow, if you like, on the road surface.

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1 Q. So the speed calculation you performed on this occasion  
 2 was of the van as it was carrying Christine over the  
 3 last stretch towards the central reservation and then as  
 4 it went over the central reservation?  
 5 A. Yes, a continuation, sir.  
 6 Q. So this is the start point of frame 16, if we then move  
 7 to the next page, we will see frame 17, is that the next  
 8 frame that you used as part of the speed calculation  
 9 {DC5010/19)?  
 10 A. The end point, yes sir.  
 11 Q. While we've got this frame on screen, I think we can see  
 12 some visible sign on the nearside of the van towards the  
 13 bottom of it scraping along the central reservation?  
 14 A. Creating the scratch marks that we described before  
 15 lunch, sir, yes.  
 16 Q. And looking at your 7.2.22, and your page 44, what  
 17 calculation of speed did you make on this occasion?  
 18 A. Again, sir, exactly the same method, time and distance,  
 19 a distance of 8.5 metres between those two points, over  
 20 0.7 of a second, coming out at just over 12 metres per  
 21 second, which is 27 miles an hour.  
 22 Q. Now that's a speed that is slightly slower than the  
 23 previous speed. Between the point that the -- the  
 24 stretches where you made those two calculations, there  
 25 was some braking?

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1 A. Yes, sir.  
 2 Q. There was also the impact with the central reservation?  
 3 A. Indeed. So you have a combination of the braking and  
 4 the impact of the central reservation potentially  
 5 slowing the van, and this calculation is also  
 6 susceptible to more subtle errors because it's a shorter  
 7 distance over a shorter time, you change one of those  
 8 factors and it has a bigger error margin within the  
 9 calculation itself, whereas the other two were over  
 10 a longer distance and a longer time, so a change in  
 11 a couple of metres or something along those lines has  
 12 actually very little effect.  
 13 Q. Thank you. Does this suggest that when Christine was  
 14 pushed into the central reservation by the van it was  
 15 travelling at about 27 miles per hour?  
 16 A. Yes, sir.  
 17 Q. And therefore that was about the force that pushed her  
 18 into the central reservation?  
 19 A. That's correct, sir, yes.  
 20 Q. Finally, did you carry out a speed calculation for the  
 21 speed of the vehicle as it approached the point of  
 22 collision?  
 23 A. I did, sir, and that's based on those striated marks  
 24 that I was talking about before the lunch break. Care  
 25 really needs to be taken with using this because it's

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1 based on a vehicle with all its tyres inflated and, as  
 2 I've discussed, there is a partial deflation on that  
 3 front nearside, so the loss of control which these marks  
 4 exhibited may have been exacerbated by that  
 5 underinflated tyre and it may not wholly have been due  
 6 to the level of steering that the driver employed on the  
 7 vehicle. So whilst they can still be using  
 8 calculations, it has to be taken carefully and that came  
 9 out with a speed of 26 miles an hour to 36 miles  
 10 an hour. However, that is comparable to the damage  
 11 sustained by the van during the impact with the  
 12 railings, and that calculation, the van would have been  
 13 travelling at that speed at the commencement of those  
 14 marks.  
 15 Q. If we look at those marks again, {DC5005/39}, and  
 16 {DC5005/40} I think gives a better image of the mark.  
 17 Is it this mark that you used?  
 18 A. No, sir, the mark -- it would be probably around  
 19 page 34, a few images earlier.  
 20 THE CHIEF CORONER: These were the marks you showed us in  
 21 the roadway?  
 22 A. That's correct, sir, the striated marks that  
 23 I described.  
 24 MR HOUGH: Yes, {DC5005/33}, please, of the same bundle.  
 25 Yes.

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1 A. Again sir, no, I would go for ...  
 2 THE CHIEF CORONER: I think it's the one -- next on --  
 3 A. Page 36 --  
 4 MR HOUGH: Page 36, please?  
 5 A. -- in the same bundle. {DC5005/36}. So these marks  
 6 here, the striated marks I described with the turn to  
 7 the right.  
 8 Q. Yes, of course.  
 9 A. It is indicative of a loss of control because the tyres  
 10 haven't got the traction to steer the curved path at the  
 11 speed at which the van was travelling. The caveat that  
 12 I do put on that is the fact that the underinflated tyre  
 13 may have exacerbated that loss of control, which is why  
 14 I have quite a wide range of speed: a 10 mile an hour  
 15 range. But that speed range is totally consistent with  
 16 the level of damage sustained by the van on impact with  
 17 the railings.  
 18 Q. Is this right: in order to calculate the speed based on  
 19 this sort of mark, you need first of all to apply  
 20 a formula which gives you the radius which is describing  
 21 the mark?  
 22 A. Indeed, sir, the radius of the curved path.  
 23 Q. And then you use that radius in a further calculation  
 24 which determines speed?  
 25 A. That's correct, sir, yes.

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1 Q. You do a separate calculation for each of the sides of  
 2 the vehicle, each front tyre?  
 3 A. I did, sir, yes, on this occasion.  
 4 Q. And you come up with a speed for each of the tyres based  
 5 first of all on the road surface being wet and then on  
 6 it being dry?  
 7 A. That's correct, sir. So ideally when I would attend  
 8 a fatal collision I would conduct skid tests,  
 9 a deceleration test to find the level of deceleration  
 10 between the tyres and the road surface, ideally in the  
 11 vehicle that created those marks, because that best  
 12 replicates the surface marks. With this incident, as  
 13 I described earlier, the road surface displayed a sheen,  
 14 it appeared to be damp. Clearly when I got there and  
 15 was dealing with my part of the investigation, the road  
 16 surface was dry. That has an impact on the level of  
 17 deceleration which would have an impact on the resultant  
 18 speed calculation. So the rate of deceleration, I took  
 19 an average from a database of skid test results that we  
 20 have at my place of work, and that average for dry and  
 21 wet to then come out with a range of speed to best  
 22 assist the court.  
 23 Q. I think that the range that the calculations produced  
 24 was on the offside, 29 to 31 miles per hour?  
 25 A. That's correct, yes.

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1 Q. And on the nearside, 31 to 33 miles per hour?  
 2 A. That's correct, yes.  
 3 Q. As I understand it, the nearside mark is a more reliable  
 4 indicator of speed; is that right?  
 5 A. Yes, sir, because it -- just going back through my  
 6 memory. So the ideal mark to use in these circumstances  
 7 is the mark that follows the centre of gravity  
 8 closest -- the path of the centre of gravity to the  
 9 closest.  
 10 So if all the criteria are met, which they're not in  
 11 this circumstance, because the best criteria is all four  
 12 marks replicated, because the back of the vehicle has to  
 13 be tracking outside the front of the vehicle, and this  
 14 is going quite deep into the reconstruction of collision  
 15 investigation, all four marks is the best position to be  
 16 in, obviously I didn't have that here.  
 17 When you use the specific mark that most closely  
 18 follows the centre of gravity, you then give a range of  
 19 plus or minus 10% due to a skid -- a slipping tyre.  
 20 Skidding is probably a bad word to use, but that is, in  
 21 essence, if we were to do a skid to stop, we would do  
 22 plus or minus 10%, but of course it's slipping outside  
 23 of the curved path.  
 24 Incorporating that in with the usage of both marks  
 25 gives me that 10 miles an hour speed range.

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1 Q. Now, if you apply the 10 miles an hour range to the  
2 average of both, you get that figure of 26 to 36; is  
3 that correct?  
4 A. That's correct, sir, yes.  
5 Q. But if you apply the margin of error just to the  
6 nearside mark, which is, as you've said, the more  
7 reliable one, what's the figure you get?  
8 A. It turns out to be 28 to 36, and that's due to rounding.  
9 You might think 31 less 10% is 3 miles an hour; it is  
10 28, doing the maths in my head.  
11 Q. Now, to what extent is this margin of error a matter of  
12 caution and to what extent does it reflect the fact that  
13 the speed really could be anywhere in that range?  
14 A. It is a matter of caution but the speed could be  
15 anywhere within that range. It will more than likely  
16 lie anywhere within that range. However, it is entirely  
17 consistent with all the speed calculations over the  
18 bridge, all tending to indicate, surmising, sir, that  
19 the van was travelling at about 30 as it went across the  
20 bridge.  
21 Q. And the calculation suggests, does it, that in those  
22 last moments until it collided with the railings, it was  
23 similarly travelling at about 30?  
24 A. Indeed, sir, yes. 26 to 36, it's 4 to 6 miles an hour  
25 either way. It's entirely consistent with the level of

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1 impact damage sustained. Probably a little under 30 for  
2 impact because there will have been speed loss due to  
3 the rotation and the slipping of the wheels. But it is  
4 entirely consistent the whole way across the bridge with  
5 that 30 miles an hour summary in essence.  
6 Q. And certainly no heavy braking in the last stretch?  
7 A. There is no indication of any heavy braking at any  
8 point. I can't discount it because the vehicle was  
9 fitted with ABS, but in terms of what we would generally  
10 see with the critical curve mark, it's usually -- and  
11 I am being very general -- usually with a driver driving  
12 too fast to go round a bend, and in London tends to come  
13 out the curved path and hit a tree or a lamppost,  
14 something along those lines, and this is very similar in  
15 circumstances, whether he had his foot on the brake or  
16 the throttle at the moment of impact, I couldn't say  
17 with that.  
18 Q. May we now move to the part of your report where you  
19 deal with the movements of Xavier Thomas and  
20 Christine Archibald.  
21 Xavier Thomas, first of all. I think you conclude  
22 from your viewing of the CCTV footage that his position  
23 on that footage was consistent with him being struck  
24 during the second mounting of the pavement?  
25 A. Yes, sir.

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1 Q. And given what we saw of the van passing very close to  
2 the wall, and since we know it came from behind him, it  
3 can readily be seen that he would have found it very  
4 difficult to get away from the van?  
5 A. That's correct, sir, yes. In viewing the footage there  
6 are numerous pedestrians that run both ways, one way,  
7 and then retreat the other way.  
8 Q. But just to be clear, because of the lack of footage,  
9 you simply can't say whether they could or did attempt  
10 any final movement to dodge the impact?  
11 A. I can't say sir, no.  
12 Q. Next, Christine Archibald and her fiancé Tyler Ferguson,  
13 their movements. Did you note from the CCTV that they  
14 did try to take avoiding action?  
15 A. Yes, it's clear on the footage that she took -- they  
16 took attempts to avoid the van as it mounted the  
17 footpath on the third time, running to their left,  
18 travelling south across the bridge, the east bridge  
19 wall, prior to heading back to the west, towards the  
20 carriageway.  
21 Q. We've seen the footage but if we can bring up a still of  
22 that, it's {DC7201/25}. I think we can see on the upper  
23 image where Christine and Tyler were before the van  
24 mounted the pavement for the third time, and then on the  
25 lower image, Christine in the course of attempting to

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1 move out of the way.  
2 We can take that off the screen now.  
3 May we now turn to the actions of the van driver who  
4 we believe was Youssef Zaghba.  
5 A. Yes, sir.  
6 Q. Assuming that the van struck Xavier, as to which we'll  
7 turn in a moment, did you conclude that it did so at the  
8 speed approximately 29 miles per hour, the speed on that  
9 second mounting?  
10 A. Yes, sir, as I described before lunch that is an average  
11 speed, so the speed could be a little bit higher at one  
12 end and a little bit lower at the other, but it would be  
13 around 29 miles an hour.  
14 Q. And using the same qualifications and reservations, no  
15 doubt, when the van struck Christine, did it do so at  
16 the speed of approximately 34 miles per hour, the  
17 average speed on the third mounting?  
18 A. That's correct, sir, yes.  
19 Q. But it then, when taking her over the central  
20 reservation, was going at the slightly slower speed of  
21 around 27 miles per hour?  
22 A. Yes, sir.  
23 Q. You established the movement of the van on the pavement  
24 on all three occasions and then across the southbound  
25 carriageway, both by the marks and the CCTV evidence,

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1 and I think you found no inconsistency between the marks  
2 and the CCTV evidence?  
3 A. Indeed, sir. The marks, the CCTV evidence, combined  
4 with visually watching the footage and the level of  
5 impact damage is entirely consistent with this speed of  
6 around 30 miles an hour, and again, I am surmising with  
7 that speed.  
8 Q. From all that evidence, do you consider that until the  
9 van struck the central reservation, each manoeuvre was  
10 the result of a deliberate steering input?  
11 A. Yes, sir. Without the presence of a mechanical defect,  
12 as I've described, the speed at which the van travelled  
13 can only have been maintained or delivered, however you  
14 wish to describe it, due to the manner of the driver  
15 using the controls: the throttle and the brake pedal.  
16 Q. As the van passed over to the wrong side of the road,  
17 you've described that the nearside front tyre, probably  
18 at that stage, began deflating?  
19 A. Yes, sir.  
20 Q. As it confronted the traffic lights at the junction, and  
21 we looked at those earlier, what did it face in the  
22 opposite direction?  
23 A. So those traffic lights, there was a couple of vehicles  
24 visible on the CCTV heading towards, leaving the driver  
25 ultimately with three options: do you go left, back

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1 towards the correct carriageway, do you continue  
2 straight on into those vehicles at the traffic light, or  
3 do you turn right onto the footpath outside the Barrow  
4 Boy & Banker and the Boro Bistro.  
5 Q. Can we bring up {DC7181/223}, please, and this is  
6 a still from CCTV footage of that last movement of the  
7 van towards the railings. We know that the van driver  
8 steered to the right. At that point, and in this  
9 manoeuvre, what do you think occurred?  
10 A. As I've described before, generally when we see this  
11 type of mark on the road surface, it's due to a vehicle  
12 travelling too fast to be able to turn the curved path,  
13 and in saying that, the driver has to make the input to  
14 the steering in order to make that turn.  
15 However, the loss of control and the reasons for it  
16 hitting the railings, I cannot be certain whether that  
17 was intentional, or whether that was as a result of the  
18 loss of control because of the circumstances not only of  
19 the speed and attempt to -- the speed in terms of  
20 attempting to steer the curved path, but also because of  
21 the underinflated tyre which would have exacerbated any  
22 loss of control.  
23 Q. So to put that in simple terms, it is possible that  
24 Youssef Zaghba was trying to control the van and lost  
25 control as he was perhaps intending to veer slightly to

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1 the right, and that loss of control brought the van into  
2 collision with the railings?  
3 A. Indeed, sir, yes.  
4 Q. But it's also possible that he realised that the van  
5 couldn't go much further and simply turned in towards  
6 the railings?  
7 A. That would be speculation on my point of view, sir. At  
8 the end of the day, he lost control of that van because  
9 he steered too tightly for the speed at which the van  
10 was travelling, causing probably, or likely exacerbated  
11 by the underinflated tyre causing him to collide with  
12 the railings. His intention, I couldn't comment on.  
13 Q. You may well give me the same answer to this question,  
14 that it would be a matter of speculation, but let me put  
15 it anyway: there is evidence that there were a number of  
16 pedestrians in the area where the van struck the  
17 railings. Could it be the case that Youssef Zaghba was  
18 aiming at them either with or without the intention to  
19 bring the van to a halt?  
20 A. Yes, of course, sir, it could be the case, however, that  
21 is beyond what -- how I can assist the court. I can  
22 simply put it that he lost control because he steered  
23 too tightly for the speed at which he was travelling at.  
24 What he intended to do is open to speculation that  
25 anyone could comment on.

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1 Q. In any event, is there any sign that he tried to apply  
2 the brakes hard in those moments before the collision?  
3 A. I don't believe so, sir, and I haven't commented as such  
4 in my report. The loss of control is due to the speed,  
5 travelling around 30 miles an hour on the wrong  
6 carriageway.  
7 Q. If Zaghba had been attempting an emergency brake in  
8 those last moments, would you have expected to see any  
9 signs on the road which you didn't see?  
10 A. It is possible, given the conditions it may have been  
11 challenging for the tyres to leave marks, but given the  
12 steered angle of the van with an emergency-type brake  
13 situation, we may have had a greater rotation of the van  
14 and not just rotation from the impact.  
15 Q. So do you think it probable that he wasn't attempting  
16 any emergency brake at that time?  
17 A. Yes, sir, that would be my view.  
18 Q. May we now move on to your second report, please, which  
19 deals with a couple of discrete topics. First of all,  
20 concerning the impact of the van with Xavier Thomas.  
21 Now, you know, I think, that forensic work has been done  
22 by a scientist called Louissa Marsh --  
23 A. That's correct.  
24 Q. -- from whom we shall be hearing, we anticipate, next  
25 week. Can you summarise the nature of that work and its

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1 results?

2 A. In essence, as you remember when I was describing the  
3 damage to the front nearside corner of the van, it was  
4 plastic fibre transfusion work with fibres of a blue  
5 denim variety trapped on the bumper and plastic that was  
6 indistinguishable from the headlight of the van on  
7 Mr Thomas' jeans.

8 Q. So is this right: that the evidence of fibre plastic  
9 fusion you found on the nearside front bumper cover was  
10 found to match, in fibre terms, the fibres of Mr Thomas'  
11 jeans?

12 A. I believe that may be a more appropriate question for  
13 Louissa Marsh, however, she describes it as it was a  
14 jean fibre. She didn't specifically, from my  
15 recollection of her statement, say it was his jeans.

16 Q. And on the other side, was she able to identify from  
17 Monsieur Thomas' jeans, any sign of contact with  
18 a bumper of the kind which this van had?

19 A. She identified thermal damage on the jeans and also the  
20 transfer of plastic onto the jeans, I believe it was, as  
21 I mentioned it was indistinguishable from the  
22 headlights. It's indicative of forceful contact between  
23 the two items, and in my view, it makes it -- in my  
24 view, in my original report as we were discussing,  
25 I went from a position of either Mr Thomas jumped or he

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1 was struck by the van, and the forensic evidence leads  
2 me to believe that he was struck by that van.

3 Q. We'll obviously hear from Louissa Marsh about the degree  
4 of confidence she has in those findings, but assuming  
5 that those findings can be accepted on their face, what  
6 degree of force is suggested by that sort of contact and  
7 those sort of forensic findings?

8 A. Again, we're going more into her area of expertise and  
9 the previous two occasions I've seen it have been at  
10 higher speeds. But the impact phase between vehicles,  
11 or between vehicles and pedestrians, occurs around about  
12 0.25 of a second. It's that. And we're talking about  
13 a van which at the time was doing an average of 29 miles  
14 an hour impacting with a pedestrian, that transfer of  
15 energy, well, energy cannot be lost, so that energy has  
16 to be transferred, and one of the ways it can be  
17 transferred is by, obviously, moving Mr Thomas, but also  
18 by friction between the item of clothing and the bumper,  
19 so that forceful contact for me is indicative in a  
20 strong way of showing that he was in contact with that  
21 van.

22 Q. You will no doubt have carried out reconstructions in  
23 relation to many accidents, true accidents, where a car  
24 has struck a pedestrian and thrown them into the air.

25 A. That's correct, sir.

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1 Q. Given the speed of the van at this point, and the force  
2 indicated by the forensic findings, do you consider it  
3 possible that the speed was sufficient to throw  
4 Monsieur Thomas into the air and over the balustrade of  
5 the bridge?

6 A. I do, indeed, sir, yes. There have been adverts on the  
7 television which show -- generally the government's  
8 Speed Kills adverts and they show a pedestrian in impact  
9 with a vehicle. A common misconception when someone  
10 sees a pedestrian is the pedestrian literally just goes  
11 up and over the vehicle, or under the vehicle, whichever  
12 way it may be. That, unfortunately, is a common  
13 misconception, but it's because it's happening in such  
14 a short period of time. What actually is happening,  
15 because of momentum, is the object, or pedestrian, is  
16 being knocked forward and being given that forward  
17 momentum. If there's full engagement between the  
18 vehicle and the pedestrian, they will reach the speed of  
19 that vehicle, and generally go in the direction that the  
20 vehicle has knocked them.

21 At the point that the van was next to the balustrade  
22 and wall, the tyre marks appear to suggest it was going  
23 relatively straightforward, perhaps being steered back  
24 to the right. It may have been going left. I don't  
25 know exactly when it hit Mr Thomas. However, as you'll

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1 remember, when we described the fibres, they were on the  
2 nearside corner of the bumper, and the impact with the  
3 nearside corner of the bumper imparts rotation as well,  
4 and it's that rotation, combined with the lifting effect  
5 of the vehicle and the impact, the height of the impact  
6 likely being below Mr Thomas' centre of gravity to lift  
7 him up and pick him up for want of a better word. So it  
8 will have enabled him to be lifted up and over with the  
9 rotation into the river.

10 Q. And of course this movement, based on the marks you  
11 found, would have been happening very close to the  
12 balustrade?

13 A. Indeed, sir, yes. And potentially, again, surmising as  
14 well, when pedestrians are in impact with a vehicle,  
15 there's generally very clear evidence if it's a full  
16 frontal impact as to whether a pedestrian is running or  
17 walking by their displacement, and by that I mean if  
18 a pedestrian is in impact with a car that's walking  
19 across the road at a 90-degree angle to that car, they  
20 will generally be knocked straight in the direction of  
21 the path of the car and they have little displacement in  
22 their original direction. If a pedestrian is running,  
23 they have greater displacement in that direction. So if  
24 Mr Thomas was running in that direction as well, it  
25 would have exacerbated the effect.

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1 Q. So made it more likely for him to be thrown over the  
2 bridge?  
3 A. Yes, sir.  
4 Q. You also in your second report address the speed of  
5 Mr Thomas' entry into the water.  
6 A. Yes, sir.  
7 Q. The court has heard already that the distance from the  
8 top of the railings down to the water was 13 metres.  
9 A. Mm-hm.  
10 Q. You made a calculation, I think in your appendix 3 on  
11 page 12 --  
12 A. Yes, sir.  
13 Q. -- of the speed that his body would have reached falling  
14 from that height?  
15 A. I did, sir, yes.  
16 Q. What was that calculation?  
17 A. It would be -- for me it would be a minimum, because in  
18 all likelihood he's got to have gone above that  
19 13 metres, to get above the balustrade, 36 miles  
20 an hour.  
21 Q. Is that a calculation with which you can have quite  
22 a high degree of confidence?  
23 A. Yes, sir. So due to gravity, everything falls at the  
24 same rate, everything accelerates at the rate of gravity  
25 until it reaches its terminal velocity. Those that

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1 parachute will know what a human's is, I think it is  
2 over 100 miles an hour. People here may think: what's he  
3 talking about, if I dropped a feather and a stone at the  
4 same time, they're not going to accelerate at the same  
5 rate. Well, they will, but the feather will reach that  
6 terminal velocity a lot quicker, so it's purely and  
7 simply a calculation based on gravity, and the fact that  
8 he has fallen at least 13 metres, never mind the effect  
9 that the van's speed would have had on that as well, so  
10 for me it is a minimum speed of entry into the water.  
11 Q. Based on the way you've described it, it sounds as  
12 though you can't give any sort of maximum or any range?  
13 A. I wouldn't even attempt to, sir, because there are  
14 numerous possibilities and changes that could affect  
15 that.  
16 Q. Given your knowledge of how he may have been thrown over  
17 the balustrade, are you able to help us with how it is  
18 most likely he entered the water, whether vertically or  
19 horizontally or at some in between?  
20 A. I can't say, that it would be pure speculation. It  
21 would depend on the amount of rotation that the van  
22 imparted on him both vertically in terms of twisting  
23 that way, and horizontally in terms of how much it  
24 scooped him up, and they'll all have an effect as to  
25 which way he would have entered the water.

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1 Q. Finally in your second report you deal with some  
2 additional CCTV footage which you were provided with  
3 from buildings at the north end of London Bridge, and  
4 you were able from that to calculate the speed at which  
5 the van was travelling as it entered the north end of  
6 the bridge?  
7 A. Yes, sir, and the second calculation was -- excuse me --  
8 immediately prior to it mounting the footpath on the  
9 first occasion.  
10 Q. I'm not going to take you through the frames in the same  
11 way as I did before, because they're more precisely  
12 concerned with the events we're addressing, but what  
13 were the speed calculations you made of the van's speed  
14 at the north end of the bridge?  
15 A. 30 and 31 miles an hour.  
16 MR HOUGH: Thank you very much, officer. Those are all my  
17 questions. You may or may not get some questions from  
18 others.  
19 THE CHIEF CORONER: Just before you sit down, Mr Hough, can  
20 I just ask for one image to come back to the screen,  
21 which is {DC5010/18}. Now, I think, Mr Andrews, this is  
22 the part of the imagery from the bus which deals with  
23 the white van before it's going across the central  
24 reservation.  
25 A. Yes, sir.

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1 THE CHIEF CORONER: If we look at the front of the van, the  
2 nearside headlamp doesn't appear to be on. It's either  
3 come adrift or it's ...  
4 A. Yes, and looking at it, the impact damage that  
5 I described on the front nearside wing also appears to  
6 be there.  
7 THE CHIEF CORONER: Yes, so this is after what you think  
8 might have been the point of impact between the van or  
9 that part of the van, looking at --  
10 A. In all --  
11 THE CHIEF CORONER: -- your work and also the work of  
12 Ms Marsh that we have looked --  
13 A. -- in all likelihood, sir, Mr Thomas, Madame Delcros, or  
14 a combination of them both, in all likelihood, for that  
15 damage.  
16 THE CHIEF CORONER: Yes.  
17 MR HOUGH: Just to be clear, the van also contacted with  
18 a number of other pedestrians. Is it possible that they  
19 also contributed to that damage?  
20 A. Indeed, sir, definitely.  
21 Q. It looks from the angle of impact of the van with the  
22 railings that that damage to the front nearside corner  
23 was not caused in the impact with the railings?  
24 A. I would agree with you on that point. What can occur in  
25 circumstances like that where you have the van coming

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1 into the front offside corner, you can get a complete  
 2 rotation round to create the damage but, as we discussed  
 3 earlier, that was prevented by the traffic light pole.  
 4 THE CHIEF CORONER: Yes.  
 5 MR HOUGH: So while there may have been some flexing across  
 6 the front bumper and the bonnet, it wouldn't have been  
 7 such as to cause that degree of damage or anything like  
 8 it to the front nearside corner?  
 9 A. Correct, sir, and also with the damage on the driver's  
 10 side, the offside, there was also indication that some  
 11 of that may have come from other victims, not just the  
 12 impact with the railings.  
 13 MR HOUGH: Thank you very much.  
 14 THE CHIEF CORONER: Thank you.  
 15 Questions by MR ADAMSON  
 16 MR ADAMSON: PC Andrews, I will be brief. My name is  
 17 Dominic Adamson and I ask questions on behalf of the  
 18 parents of Xavier Thomas, and his partner,  
 19 Christine Delcros.  
 20 Mr Andrews, first question, you gave some dimensions  
 21 of curves on the pedestrian side of the road and the  
 22 central reservation?  
 23 A. Yes, sir.  
 24 Q. The pedestrian side was 10 centimetres.  
 25 A. Yes, sir.

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1 Q. The central reservation was 15 centimetres.  
 2 A. Yes, sir.  
 3 Q. Are you aware of the reason why there is a difference?  
 4 A. No, sir. I suspect that would be something within  
 5 traffic management that would be more appropriate for  
 6 a traffic management person.  
 7 Q. You've described the speed of the vehicle as it  
 8 progressed across the bridge. Is it right that the  
 9 slowest of the various average speeds that you have  
 10 identified is 27 miles per hour?  
 11 A. That's correct, sir, yes.  
 12 Q. The highest is 34 miles per hour?  
 13 A. Yes.  
 14 Q. But you have made the point in relation to all of those  
 15 estimates that there is a margin for error?  
 16 A. Of course, sir, yes.  
 17 Q. Is it right that that margin for error is, however, very  
 18 small, perhaps only 1 or 2 miles per hour?  
 19 A. Indeed, particularly over the calculations of the two  
 20 sets of mountings of the footpath.  
 21 Q. The second and third mounting, so including the second  
 22 mounting involving Xavier Thomas?  
 23 A. And as I described earlier, when I deal with a longer  
 24 distance over a longer time frame, a fraction of  
 25 a second, one frame or two frames, 0.08 of a second in

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1 this circumstance, or a couple of metres, has very  
 2 little impact because we're dealing with such -- larger  
 3 numbers. When we get down to, say, 8 metres over half  
 4 a second, well, 8 metres over half a second actually  
 5 works out to be round about 40 miles an hour off the top  
 6 of my head. As soon as you increase that to 10 metres  
 7 over half a second, you're getting up towards 50 miles  
 8 an hour.  
 9 Q. And so in relation to those second and third estimates,  
 10 you have a high degree of confidence in relation to  
 11 those estimates?  
 12 A. Yes.  
 13 Q. We know the van mounted the kerb. Is there any evidence  
 14 that the mounting of the kerb exerted any significant  
 15 decelerating force on the vehicle?  
 16 A. There's no specific evidence it would have had an impact  
 17 and, as I explained earlier, we're talking about average  
 18 speed. There are -- the van could have been and it's  
 19 very unlikely to have been doing a steady 29 miles  
 20 an hour throughout. So it could have been going faster,  
 21 it could have also been going a little bit slower.  
 22 Q. Yes. The point that I'm driving at is that we can be  
 23 confident, based on the CCTV footage and your  
 24 calculations, that the kerb offered no effective  
 25 restraint to a vehicle being driven deliberately towards

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1 pedestrians on the pavement?  
 2 A. That is -- that's a question that's ... it offers no  
 3 protection because it is designed as, I would describe  
 4 as a boundary, it's a road edge.  
 5 Q. Yes.  
 6 A. It marks the road edge. It's 10 centimetres tall. It  
 7 may have marginally affected the speed limit, but it  
 8 would be minimal.  
 9 Q. Yes, it's a boundary, it's not a barrier. So if anyone  
 10 was to ask you in advance of this incident, you would  
 11 have said: certainly the kerb is not going to stop  
 12 a vehicle which is being driven deliberately towards  
 13 pedestrians on that pavement?  
 14 A. Yes, sir, and there's very few that would.  
 15 Q. And we understand from your evidence that at  
 16 10 centimetres, it didn't even affect the tyres. It's  
 17 only when it impacted with a 15-centimetre kerb that  
 18 there was any impact on the tyres?  
 19 A. That's what appears to have happened in this instance,  
 20 sir. In terms of whether a 10-centimetre kerb could  
 21 affect the tyres, yes, it's entirely possible, but the  
 22 dynamics and the physical evidence that I found was the  
 23 indication that it was the 15-centimetre kerb on this  
 24 occasion.  
 25 THE CHIEF CORONER: But on this occasion, of course, it was

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1 hitting a 15-centimetre kerb after it had hit  
 2 a 10-centimetre kerb on a number of occasions on your  
 3 evidence, and I suspect that may have had an impact --  
 4 A. Spot on, sir, that's --  
 5 THE CHIEF CORONER: In other words, that may have had  
 6 an impact -- wrong word -- but it may have had an effect  
 7 on the --  
 8 A. The structure of the tyre.  
 9 THE CHIEF CORONER: -- the structure of the tyre, because it  
 10 wasn't the first time it had struck a hard object,  
 11 effectively .  
 12 A. Absolutely correct, sir, yes.  
 13 MR ADAMSON: Those are my questions. Since your question  
 14 was "spot on".  
 15 THE CHIEF CORONER: It won't happen again, I can assure you.  
 16 Questions by MS AILES  
 17 MS AILES: My name is Victoria Ailes, I ask questions on  
 18 behalf of some of the other families .  
 19 You gave evidence that at the point of impact with  
 20 the railings outside the Barrow Boy & Banker, the driver  
 21 would have experienced a loss of control?  
 22 A. Yes.  
 23 Q. I just want to clarify, your evidence is that he  
 24 wouldn't have been able to control the van at the point  
 25 of impact; it doesn't follow from that, does it, that

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1 the collision itself was unintentional? In other words,  
 2 he directed the vehicle, you can't say whether he  
 3 intended to crash it or not?  
 4 A. Correct.  
 5 THE CHIEF CORONER: I think Mr Andrews was quite clear about  
 6 that: that he couldn't really try and gainsay what the  
 7 intention of the driver was, but one possibility was  
 8 that control had been lost. The other was, in fact,  
 9 control hadn't been lost and this was an intentional  
 10 act. He can't simply say one way or the other.  
 11 A. Ultimately, sir, he lost control.  
 12 THE CHIEF CORONER: He lost control.  
 13 A. He lost control because he steered too harshly for the  
 14 speed that van was travelling. He steered to the  
 15 right --  
 16 THE CHIEF CORONER: But whether he was intending to go --  
 17 A. -- whether he was aiming for someone or whether he lost  
 18 control because he was travelling too fast for this  
 19 curved path and wanted to continue further is pure  
 20 speculation and I can't comment on it.  
 21 MS AILES: Yes, I think that's the point I was trying to  
 22 clarify: it is possible by accelerating and steering to  
 23 deliberately put a vehicle into a situation where,  
 24 because of its direction and speed, you can no longer  
 25 control it?

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1 A. Yes, it is. However, to create those types of marks,  
 2 which I've done in testing, is extremely challenging.  
 3 Not only is it extremely challenging, it feels horrible  
 4 and you do not feel in control of the car and there is  
 5 very little you can do about it once you're in that  
 6 state. Yes, it could have -- he steered right, I cannot  
 7 discount that. What was going through the driver's head  
 8 at that moment he steered right and what his intentions  
 9 were, I cannot comment on because he lost control, and  
 10 that's due to his speed on the curved path, not because  
 11 it may have been what he wanted to do or otherwise.  
 12 Q. You mentioned the "Speed Kills" government campaign.  
 13 That is a campaign which is predicated on the  
 14 proposition that where you've got a collision between  
 15 a vehicle and a pedestrian, the speed at which that  
 16 collision occurs is very important, isn't it?  
 17 A. Indeed, yes.  
 18 Q. In other words, and it's a fairly trite observation, but  
 19 the slower that the vehicle is going when it collides  
 20 with a pedestrian, the higher that pedestrian's chances  
 21 of survival?  
 22 A. Indeed, and I think it's something like -- and the  
 23 figures may be wrong, but it is four times more likely  
 24 to receive fatal injuries at 30 rather than 20.  
 25 Q. Yes, it's not just that it makes a difference; the

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1 difference is significant?  
 2 A. Indeed, yes.  
 3 Q. In terms of your mapping of the path of this vehicle,  
 4 both using the CCTV and with your analysis at the scene,  
 5 you've described the possibility that the wing mirror  
 6 struck the balustrade. We've obviously talked about the  
 7 vehicle mounting the kerb and the central reservation,  
 8 and we know that it collided with a number of  
 9 pedestrians, but with those exceptions, you found no  
 10 evidence that it collided with anything else, street  
 11 furniture or barriers, until it finally hit the  
 12 railings?  
 13 A. Other than as described, no, there is no suggestion that  
 14 I could see that would suggest an impact with something  
 15 else. There was a white material at the end of the  
 16 first set of marks, but I would think that's likely to  
 17 have come from a pedestrian holding something.  
 18 MS AILES: Thank you.  
 19 Further questions by MR HOUGH QC  
 20 MR HOUGH: Officer, since you were just being asked about  
 21 street furniture, may I just deal with another point and  
 22 look at each of the three mountings of the kerb.  
 23 First of all, can we have on screen {DC5004/8}.  
 24 This is the first mounting of the kerb. We can see that  
 25 the kerb along this stretch has no obstructions, no

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1 street furniture to prevent the van being driven onto  
 2 the kerb?  
 3 A. That's correct, sir. I think the last set of railings  
 4 and telephone box end at, in effect, at the end of the  
 5 building line, I believe it is.  
 6 Q. Then if we turn to {DC5004/12} of the same document, we  
 7 can see the end of this mounting of the kerb, and there  
 8 is a blue road sign a little further along?  
 9 A. Yes, sir, and that is just beyond the commencement of  
 10 the second mounting and it's a bus lane sign. On the  
 11 basis of its base, I would suggest it was temporarily  
 12 there, but you would need to speak to the planners about  
 13 that.  
 14 Q. If we look at {DC5004/14} you can see the second  
 15 mounting.  
 16 A. As you can see, it went to the left as you look at the  
 17 photo of that sign.  
 18 Q. So the driver just veered around that to the left.  
 19 Then similarly along the further stretch of  
 20 pavement, {DC5004/25}, please, is that the end of the  
 21 second mounting?  
 22 A. End of ... it's the start of the third in effect.  
 23 Q. Start of the third mounting, sorry.  
 24 A. As the van came off after the third mounting it was in  
 25 close proximity to that second bus lane sign prior to

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1 the bus stop.  
 2 Q. So is this right: that there were not many road signs or  
 3 other obstacles along the kerb?  
 4 A. Other than the kerb, two maybe three bus lane signs with  
 5 the bus stop, and the appropriate hoarding at the end of  
 6 the bridge, sir, on that east kerb.  
 7 Q. The driver has dodged it on each occasion, has avoided  
 8 it on each occasion.  
 9 A. Yes, sir.  
 10 Q. But it doesn't appear that the actual mountings and  
 11 departures from the kerb were dictated by the road  
 12 signs. So, for example, the driver wasn't coming off  
 13 the kerb in order to avoid a road sign; is that right?  
 14 A. Well, there was nothing there to avoid, sir.  
 15 Q. Yes.  
 16 A. In actual fact, the proximity to that bus lane sign in  
 17 that photo is very, very close to that one.  
 18 Q. Yes.  
 19 A. So he had control of that vehicle. He could steer, he  
 20 could use the throttle and the brakes. His choice of  
 21 path, I would suggest, was his decision.  
 22 Q. We saw in the Westminster Bridge Inquest that on  
 23 a couple of the occasions, the driver was driving off  
 24 the kerb in order to avoid some piece of street  
 25 furniture.

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1 A. That does not appear to have occurred in this case.  
 2 Q. That isn't what happened here: the driver was driving on  
 3 and off the kerb at moments of his choosing?  
 4 A. As I said, sir, he had control of the steering and with  
 5 the proximity he had to some of those furniture --  
 6 street furniture as he has progressed, the street light  
 7 and the central reservation, he's missed them, but there  
 8 is limited street furniture, as I said, two or three bus  
 9 lane signs on that east footpath.  
 10 THE CHIEF CORONER: I think the final photograph, Mr Hough,  
 11 just on that sequence, it might be 28 or 29 in the  
 12 sequence, where you get the markings in very close  
 13 proximity to the sign we've just looked at from the --  
 14 MR HOUGH: {DC5004/28} is probably best in this volume.  
 15 THE CHIEF CORONER: So that, I think, shows the vehicle  
 16 going between what you have described as perhaps being a  
 17 temporary bus lane sign but perhaps slightly more  
 18 permanent than the other sign that we can see on that  
 19 image?  
 20 A. Ultimately, sir, as you look at the photo, you're  
 21 looking back towards the north. So the marks on the  
 22 left are the driver's side and the marks on the right  
 23 are the passenger side, is in close proximity to that  
 24 bus lane sign, and you have what appears to be  
 25 a temporary "road ahead closed" sign.

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1 MR HOUGH: Thank you very much. I will just see if anyone  
 2 else has any questions arising out of what I asked. No?  
 3 Those are all the questions we have for you. Thank you  
 4 very much for all your work on this case and for your  
 5 evidence.  
 6 THE CHIEF CORONER: Yes, thank you very much indeed,  
 7 Mr Andrews. Very helpful.  
 8 A. Thank you, sir.  
 9 MR HOUGH: Sir, that's all the evidence we have for today.  
 10 Tomorrow morning we shall be hearing from a pathologist  
 11 concerning two of those who died --  
 12 THE CHIEF CORONER: Yes.  
 13 MR HOUGH: -- and we shall also be hearing an immersion  
 14 expert.  
 15 THE CHIEF CORONER: Thank you. Looking at the timetable,  
 16 Mr Hough, not wishing to tempt things, but it looks as  
 17 if we may not take up the whole of the day tomorrow?  
 18 MR HOUGH: Our estimate is that we will have about half  
 19 a day tomorrow. We had built in a half day's slippage  
 20 time, which we're not requiring, and we shall next sit  
 21 after that on, of course, the 28th.  
 22 THE CHIEF CORONER: Yes. Thank you very much. I'll rise.  
 23 We'll meet again at 10 o'clock tomorrow.  
 24 (3.07 pm)  
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1 (The court adjourned until 10.00 am on 151  
 2 Friday, 24 May 2019)  
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