

1

Wednesday, 7th October 2009

2 (Afternoon session)

3 (1.55 pm)

4

ARIE JACOB ZEELENBERG

5

PRESENTATION (continued)

6 THE CHAIRMAN: We are going to move now to Q12.

7 THE WITNESS: (Slide 140) The analysis of Q12, phase 1,

8 that's my analysis of the mark. This is the chart I

9 presented to the Inquiry, the same structure. I will

10 (slide 142) take the image and copy the points in there

11 to digitise it just not to have quality loss. (Slide

12 143) This is the mark in situ and on the left side

13 there is an image of the tin in colour and these

14 colours, in a way, explain some of the difficulties with

15 the print. They have tried to photograph it to take out

16 the background but you can still see this sharp V-shape

17 is still coming back in the mark. But we have to take

18 the mark as it is and if we then look at the overall

19 quality of the mark (slide 144), the overall assessment

20 is there are many fragments all over the place inside

21 Q12, and outside it. The V-shape I already mentioned

22 is, in general, I can think it's a poor quality print.

23 There's the coherence of the points in itself and

24 the segments is questionable. The determination has

25 caused that, whether it's a single print or what the

1 source of the print may be or whether multiple prints is
2 of course fairly difficult. There are stains in there.
3 We see two vertical swipes. I will point them out here.
4 On the right side from the core (**indicated**), you can see
5 them starting here and the swipe going downwards and on
6 the left side we see kind of the same thing start a
7 little bit lower and we see a swipe over there, left, on
8 the right side of the core.

9 There's very few reliable Galton points at first
10 sight. You could use the mark to exclude but in our
11 system and I think many would not find the mark eligible
12 or suitable for identification.

13 The finger: as I said, we cannot determine what
14 finger it is coming from.

15 If we look at the overall shape, I have a habit of
16 trying to follow the line starting in the core and we
17 can see if we follow the lines here, there is a tendency
18 to rotate out so that the rotation is clockwise -- so to
19 the right -- and typically this will tell you that it is
20 most likely coming from a left hand. If it's turning to
21 the left, it's most likely to come from a right hand.

22 If we try to do the same in the latent, then here it
23 is obviously ambiguous but if we look at the larger
24 picture, if we look here (**indicated**) we see that the
25 lines are going down and out and below the left delta

1 and if we look here there is a tendency that we see that
2 the lines go down and out. Not 100 per cent but there
3 is some idea that this is rotating differently than the
4 mark.

5 (Slide 145) Same structure as with Y7. On top we
6 have the charted fingerprints and below we have the
7 clean ones. I tried to keep them as clean as possible
8 for your own observations and we start with point 1 and
9 2 at the same numbers as SCRO.

10 You see down where I'm looking at and I'll leave
11 point 1 for what it is -- sorry, if I move back, if we
12 see here (**indicated**) this line on the right side is more
13 prominent than on the left side, where we see it is an
14 eyelet. I will move back to discussion of the core
15 later. But if we now look at a bifurcation in the mark,
16 left leg and right leg are kind of symmetric. You could
17 say they are almost even. But if we move to the
18 reference print and I move now downwards to be able to
19 see it better, we see that the left leg is considerably
20 thinner, I think it is half as thin as the right leg.
21 So a distinct difference in appearance of the legs of
22 the bifurcation.

23 The core I said I would discuss later in phase 2.

24 (Slide 146) If we move over to point 3, which is
25 also point 3 of SCRO, then the occasion we have to look

1 at is here (**indicated**) so we see here in the reference
2 print an upcoming ending ridge. If we move over to the
3 corresponding area in the mark, I have traced the
4 ridges, there is no such event. It is there in the
5 reference print and it should be there in the mark and I
6 cannot see it. It is not there. If we measure from the
7 reference point 2 downwards, then we can see that it
8 should be somewhere over there, but it isn't. This is
9 the first distinct discrepancy.

10 If we now move to point 4, we see the area, it's
11 down left of the core and I'll mark the area in the
12 reference print where the overlay should appear
13 (**indicated**).

14 (Slide 147) What we see in the reference print is
15 the pointing bifurcation with some small lines, a little
16 bit smaller than the adjacent lines, and here in the
17 mark they are pretty fat, very prominent, a little bit
18 different outlook but we could say that the point is
19 over there and we could use it as a reference point.

20 The ridge path of the original ridges is different,
21 not really the same, but just let us just accept that it
22 is there and use the location as a reference point.

23 (Slide 148) I must say that in an earlier
24 evaluation of Q12 I used another point as a reference
25 point, more to the left, and therefore I had different

1 conclusion but I will explain that later as well.

2 We move now to point number 7 which is not discussed
3 by SCRO. We find it over there (**indicated**), we find
4 it -- we should see it over here. This is the point we
5 just discussed (slide 148) and there is another line
6 coming in and definitely something is stopping over
7 there which we don't see in the reference print. The
8 whole area is moving upwards and thinning and there is
9 another event which I cannot see in the reference print
10 and this is a distinct discrepancy.

11 (Slide 149) Point number 6 which is the same as
12 SCRO number 13 -- I will discuss point number 5 later.
13 Point number 6 we see over here (indicated). We have to
14 look in the reference print in this area. We can now
15 see the overlay and, again, then we expect point 6 to be
16 there but if we take a ridge count then it is four in
17 the mark and three in the reference print. Even if we
18 assume that it's the same point, then the ridge count of
19 the reference print number 4 is off and I said in an
20 earlier assessment that I used another point and I
21 accept 4 is the right point to be but then -- sorry,
22 number 6 is the right point and then number 4 is off but
23 which way do you go? But in between the ridge count in
24 one is minimum four and the other one it is three so
25 there's a distinct discrepancy.

1 (Slide 150) We then move to point 5 and I must say
2 this is one of the better points in the mark. This
3 upcoming ridge here (indicated) is pretty clear. The
4 line on the left side is pretty clear; the line on the
5 right side is a little bit more ambiguous but you can
6 trace it and it's absolutely without discussion that
7 there is an upwards ending ridge -- one of the better
8 points in the mark. If this event is not true, almost
9 nothing would be true. Here is the overlay. We use 6
10 and 13 of SCRO as the reference point and we should find
11 it there and it isn't. So this is, again, a distinct
12 discrepancy number 4.

13 (Slide 151) Then we move to point 8 and 9. We can
14 find them over there (**indicated**) in the reference print,
15 look in that area and I have no issue with point 9. It
16 could be similar and in the same location almost, so I
17 will leave it where it is but now we start looking for
18 point number 8. If we look over here and we follow that
19 ridge here and we follow the yellow ridge here
20 (**indicated**), there is at least one extra line stopping.
21 There could even be another one but at least one over
22 there is stopping and there is no such event in the
23 reference print which is another distinct discrepancy.
24 You may even assume, as I said, another upwards ending
25 ridge but there is at least one distinct discrepancy

1 making it number 5.

2 (Slide 152) Point number 10 and 11. These are not
3 marked by SCRO, which I find very peculiar. If we
4 follow this ridge over here (**indicated**), then you see
5 that it bends downwards. This is one of the thicker
6 ridges and there is another line coming in, this kind of
7 a confirmation of the event of the curving ridge, this
8 line is coming in. There's little dispute about that, I
9 think.

10 From the other side, we see that it is an incoming
11 ridge. It may be a little shady but you see it coming
12 in and it has to end over there. The area around it is
13 really white and there is a lot of space between the
14 adjacent ridges so there is a ridge coming in from the
15 left.

16 If we take on the right side here -- I will use the
17 overlay -- then here is the overlay for yourself to
18 check. This is the point that could be there,
19 although -- and this is the missing one. If we look at
20 the Third Level Detail, this is a ridge that is really
21 thinning out very, very long. It almost becomes
22 incipient, you have used the word before, but I will
23 concede that it could be there but then at least point
24 number 11 is failing and is a distinct discrepancy
25 number 6.

1 (Slide 153) The conclusions of my first analysis is
2 that overall it is a poor quality, there's lots of
3 distortion and poor coherence that will say the
4 configuration and sequence of points is poor. There's a
5 minimum of 6 discrepancies found in 11 locations
6 discussed and the core is not yet extensively evaluated.
7 I will do that later. The mark is fit for elimination
8 but due to defined core area and some certain points you
9 can say, "Okay, there is the core area. I must find
10 things over there so I can exclude certain donors". We
11 know that certain donors are excluded like Mr Grey and
12 all other people that are discussed are excluded as
13 possible donors. So the mark is fit for doing that.

14 There are numerous differences in ridge path and
15 Third Level Detail. I have shown them to you. There
16 may be a pattern difference. I cannot be certain
17 100 per cent but there is a kind of a warning sign. In
18 this case, I have no stepping stone. I cannot say,
19 "This is similar. I go from there". There is nothing
20 for me to say, "I start over here", and I find it
21 alarming.

22 There are numerous warning signs and it is a
23 definitive exclusion that should be recognised in the
24 early stages of the comparison.

25 (Slide 154) I will now move to the scrutiny of the

1 SCRO charting, phase 2. Again, this is the charting.
2 (slide 156) I transferred it to the digital image for a
3 better quality. Here are the points that are
4 transferred. (Slide 157) This is my first chart and
5 the points over here on the charted points from SCRO.
6 As I said, I will do the core in the end but let's now
7 move to point number 3. It is marked over there.

8 **(indicated)**

9 Now what we see here, as I discussed before, we have
10 a vertical swipe here in the mark and this is a kind of
11 a white area with very low or virtually no definition
12 but it is definitely affected by the vertical swipe. We
13 have to look for point 3 over there and it has to be on
14 the white location. I cannot see a system of ridges,
15 let go that I can see that there is an ending ridge in
16 there.

17 It is inserted in the mark in a distorted area of
18 very poor quality. I will not count it as a discrepancy
19 because I cannot prove it's there.

20 (Slide 158) Then we look at point number 4. We see
21 the area below. We now use point 3 as a reference point
22 in the reference print and the location of it where it
23 should be in the mark as a reference and then we have to
24 look for point number 4 in that area **(indicated)**. I
25 simply can't find it. I simply can't see it and my

1 point number 3, I call it now number X, should also be
2 in that area and I find that very strange that this one
3 is marked and the other one is not marked, whilst the
4 area there is a little bit better definition but we have
5 to look for the point over there. So point 4, like
6 point 3 in the reference print, is inserted in the mark
7 in a distorted area of very poor quality and an adjacent
8 point that fails in mark, point X in the area of better
9 quality, is ignored. Ian Evett called this teasing the
10 points out and the more general term is reverse
11 engineering. The IEEGFI report has some remarks about
12 that and I will read out the relevant quotation or the
13 relevant paragraph of this report, that is about
14 circular reasoning:

15 "Circular reasoning is a scientific fallacy and has
16 to be strictly avoided. A scientific method follows a
17 step-by-step procedure with the aim of an unbiased
18 objective conclusion. With circular reasoning a
19 prejudgment is more or less apparent steering the
20 process to the wished and preset outcome. In other
21 words, an assumption is the basis for a conclusion and
22 then this conclusion proves the assumption to be right.
23 This is a scientific fallacy."

24 The first report said:

25 "The pitfall is that the premature assumption of

1 donorship leads to transplantation of data from the
2 original into the blur of the latent. It is circular
3 reasoning like this print comes from the donor. Prints
4 are unique, thus all the data must be the same and
5 subsequently all differences are not real. Circular
6 reasoning is often hard to detect. Examples in
7 fingerprinting are, 'If I ignored this difference it is
8 a perfect match, so the difference cannot be real and
9 must be caused by distortion". Different dactyloscopic
10 points between prints from the same source don't exist.
11 This is reverse engineering, reverse talking.
12 Generally, of course, it is true that fingerprints from
13 the same finger cannot have real differences so as a
14 factual statement for the base of fingerprint is true
15 but it's a fallacy if used during the methodical
16 forensic procedure of proof."

17 This is from the IEEGFI report from Austin in 2000
18 and, I think that is what we see here, Ian Evett also
19 referred to it.

20 Point number 5 and number 6 I take together. (Slide
21 159) In the reference print it is a short ridge between
22 two lines and we see it over here. I made it green.

23 In the latent I see two yellow lines that are
24 parallel and in between I see the green which is short
25 piece of ridge and continuing over there with a gap in

1 between. The point is that, very strangely, the SCRO
2 has marked the ending ridge, the upper piece of the
3 ending ridge over there. Now, it's against the stain so
4 you cannot know that the ridge is ending there. You
5 know there is a stain but you cannot be certain that the
6 ridge is ending over there.

7 The lower one is not taken to the right but
8 downwards on a continuous ridge. You could ask yourself
9 why is that done that way? This one is between the
10 lines and this one, these two, go outside the flow of
11 the ridges. I think there is a reason for it and I will
12 go (slide 160) to the next point, that's point number 9.
13 We find it over there (indicated). That's kind of the
14 broken ridge and we see it over there. Now point 9 is
15 marked in the latent on the gap between the ridges and
16 this is it in the reference print (**indicated**). In the
17 reference print we see the adjacent line in between the
18 short ridge and point number 9. Just to make it kind of
19 the same, if the small ridge was marked here and there,
20 then the existence of point 9 was wrong and the location
21 of point 9 would be wrong. So I think that's the reason
22 why they marked it downwards just to make it fit.

23 As I said, if point 6 was marked in the proper
24 direction, point 9 would become non-existent and if it
25 is done this way, you have virtually no ridge count. I

1 even have not counted it as a discrepancy, point 7 and
2 point 8.

3 (Slide 161) These are two upcoming ending ridges.

4 This is the area where these two upcoming ridges are
5 marked and this is a blow-up of it. The dominant
6 direction of information is horizontal, like this

7 **(indicated)**. The vertical is non-detectable. They have
8 now assumed there is a system of vertical lines that can
9 also detect ending ridges in that same area. This is
10 where they mark the points. I would like to invite you
11 to look for yourself whether you can see upcoming ending
12 ridges. **(Pause)**

13 Now, if you don't see them, there's nothing wrong
14 with your eyes. If the kitchen fitter tells you that
15 your kitchen is not skewed but that you have to go to
16 Specsavers, don't believe him. Don't believe a
17 fingerprint expert that he can see what you can't see.
18 If he cannot demonstrate it, it is not there. You may
19 struggle to interpret the things, to validate things and
20 to compare them but if you can't see them, they're not
21 there. A general requirement is demonstrability. You
22 should be able to demonstrate what you say you see. If
23 you cannot see it, it's not there.

24 (Slide 162) Point number 11. We use 12 as a
25 reference point. This is in the area where there's a

1 vertical swipe downwards here (**indicated**) and the ridge
2 should be there. I cannot confirm it. It's on the edge
3 of where the information stops to be reliable or even
4 visible. This is what I would see as a line. As well I
5 can say here it stops where I can see, still it is
6 marked, I wouldn't do it. This is where it should be.
7 This is again a point that is teased out using the
8 reference print as a guide to the mark.

9 (Slide 163) Point number 12 is discussed in my
10 analysis as phase 1 as number 4 and I will use it as a
11 reference point for the rest of the points on the left
12 side of the mark.

13 I have got some support, I think.

14 THE CHAIRMAN: There is a concert next door, I'm afraid.

15 THE WITNESS: (Slide 164) Point number 13. I've made the
16 overlay over there. There's a definite point in the
17 reference print. I use this as a reference. It should
18 be there. I can't see it. If you just said that if the
19 other point over here, which is much more prominent,
20 it's not used by SCRO and a non-existent point or at
21 least a very ambiguous point in the mark is charted as
22 similarity and I think this is bad practice. You cannot
23 ignore this one and mark one over here just because you
24 need it just because this is the reference print. If we
25 compare it with this information, if we look at the

1 upcoming ridge here, and we see that in this area
2 point 7 and 8 were marked and point number 3 was marked
3 and this point is ignored, I find it very suspicious to
4 say the least.

5 (Slide 165) Point number 14. It's an upcoming
6 ending ridge. It could be there but it's ambiguous in
7 the reference print. It could also be on the other line
8 because there's a small crease over there. It could be
9 there. I have no issue with it.

10 However, if we locate its position against point 13
11 and we start counting the ridges, if we go down in the
12 reference print and the count to point 13 is about 1, 2
13 and down here there is 1, 2, 3, 4-something. So even
14 then the location of point 14 in reference to the other
15 points is off. Whatever choice you make about where you
16 locate the points here, the ridge count never fits.

17 (Slide 166) Point 15 is marked in an area next to
18 the swipe, the downward swipe. If we would look in that
19 area, then here you see the swipe and look in the same
20 area we could also mark other points of ridges that stop
21 in that area or cannot be seen further in that area
22 because there is a swipe. If you look at the blue dots,
23 you could suppose and say okay, there's all ending
24 ridges but because the swipe area is over there. All
25 these are not marked as points of similarity but this

1 one conveniently is because it is in the reference
2 print.

3 This is a distorted area of low quality. Point 15
4 is assigned to a questionable event of arbitrary origin,
5 similar events are ignored. This is inconsistent
6 assessment of information based upon what is desired and
7 what is not. This is bad practice.

8 (Slide 167) If we now move to the core area point
9 number 1, 10 and 16 -- and this is the last one -- if
10 you look at what the shapes are in the core, then you
11 can see over here -- I will move back -- there's an
12 elongated kind of a thick ridge. This may be not part
13 of it but it is typically long. I see it as this --
14 this is not a presumed ridgeology, just my assessment of
15 what I see -- and it is as long as this here and in the
16 reference print it's kind of a small comma, triangular.
17 It is different.

18 If I then move to what I see in the latent and I go
19 back or I see here is a kind of an eyelet -- in English
20 we call it an eyelet, it is called that way in the
21 IEEGFI, in German they call it an auge. That is also to
22 say an eye. In Spanish they call it a circle. Somebody
23 commented that the word "eyelet" is never used. I just
24 ask attention that there are many other languages than
25 English that also use fingerprints. So we call it an

1 eyelet and we see it like this. The left leg is
2 considerably thinner than the right one.

3 Go back again, an eyelet, this one is thin, this one
4 is prominent and cannot be ignored and the line is
5 continuing. This is how I see it. In the reference
6 print what we see is it is a thick line on the left, on
7 the contrary, and a small hook downwards that is
8 supposed to flow downwards in the latent.

9 Again, moving back this is the very thick line that
10 is interrupted because if we look at the Porelon pads
11 but this is the thick line on the left and this one is a
12 hook downwards that is supposed to run through, which
13 isn't.

14 Then we move upwards and if we look in the reference
15 print we see this line which is pretty prominent and we
16 see it here forming a kind of an island or shape or
17 eyelet or whatever you call it and then moving onwards
18 much more thinner. We see nothing alike in the latent
19 in the mark. It is just a line that is evenly spread
20 and also the other ridges are not demonstrating that
21 there is some kind of event like that. If we look at
22 the mark, the reference print, we see there's a lot more
23 room for it. There's even also incipient ridges a lot
24 of space to allow for this island to happen if you could
25 say it like that. So definitely the whole area looks

1 different and I see that there is definitely a
2 discrepancy over there.

3 (Slide 168) That concludes my analysis of Q12 and
4 the scrutiny of the SCRO markings.

5 My conclusions are this: the mark is of such poor
6 quality that the suitability for identification is
7 questionable beforehand. The mistaken identification is
8 of a considerable magnitude. You cannot miss it. There
9 are about three points that are similar by type and
10 location only. There are at least six discrepancies.
11 All other points are either debatable or considered
12 non-existent of 16 discussed in total. It is highly
13 unlikely for an expert of reasonable competence not to
14 notice the discrepancies between Q12 and the reference
15 print. It is impossible for any expert and, indeed,
16 layman not to recognise these discrepancies when alerted
17 to them.

18 The absence of quantity and the distortions open
19 avenue's for guided interpretation, however there is no
20 stepping stone that can explain an honest mistake at the
21 outset. The evidence presented to defend the
22 identification reveals inconsistencies, awareness by
23 avoided discrepancies and bad practice and if bad
24 practice is executed obviously with awareness it becomes
25 malpractice.

1 (Slide 169) On the request of Mr Moynihan, I was
2 going to skip the QD2 involvement so I will go very
3 quick ...

4 (Slide 176) The next ones a few remarks and then I
5 will wrap up about identification and elimination.

6 (Slide 177) I will show you a computer screen of
7 our old AFIS systems, presently replaced, but we see on
8 the left side a mark. This is a mark that is searched
9 in our computer. It works this way, that we take a
10 cluster of reliable minutiae in the latent, we mark them
11 up and then these clusters in sequence is compared to
12 the database. The AFIS or AFR system will bring back
13 fingerprints with similar clusters, similar
14 relationships. You could say that what we are looking
15 at on that basis are the kind of lookalikes, the most
16 similar prints, and the system will generate a candidate
17 list of most likely persons and the best lookalike or
18 the best one will be on top. This is typical for any
19 system.

20 This is a random latent search and I asked them to
21 film how they go through the candidate list. These are
22 the candidates, here you see the list and I ask your
23 patience for looking at it for a short while.

24 (Slide 178) Here is the latent. This is the movie.
25 You see the hand of the latent expert on the left side

1 and he is clicking. This is an exclusion, an exclusion,
2 an exclusion, another exclusion, another exclusion. Now
3 he enlarges it because he just wants to see -- he's not
4 looking at the forest, he is now looking at some trees
5 so he goes into the minute detail in order to be able to
6 exclude this possible donor.

7 You see, they are all loops to the left of a certain
8 size. Again, he is enlarging it just to make sure what
9 he's looking at. Now he is done. He has excluded all
10 of them.

11 (Slide 179) He has excluded 30 candidates in two
12 minutes. I don't think he did time it but it was 2
13 minutes. That is 4 seconds per exclusion. That is how
14 fast it can go. These are prints that are selected by
15 similarity of configuration. If somebody says that it
16 takes him 90 seconds to exclude it, you may excuse him
17 of being slow. That's just all I wanted to show to you.

18 (Slide 180) This is how it works. The process of
19 identification starts with elimination. You take a
20 cluster in your head and you go over a ten-print sheet
21 and you say no, no, no, no, no because you look for
22 differences. The process if you go to -- and only if
23 your exclusion fails you start making comparison. If I
24 make a search in AFIS and if I see a similar one and say
25 "Hey, this one could be the one" and I hook on to some

1 cluster of points, then the process of comparison will
2 start and then we will use ACE-V.

3 The process of ACE-V, yes, that may take hours.

4 When we have a difficult print and it is a questioned
5 one, it will be executed by three independent experts.

6 They will make annotations, they will write things down,
7 they will make markings-up and then we will have

8 discussion amongst them in the lab and that can indeed
9 take hours. But this is not a matter of a disputed

10 identification but of indisputable exclusions. To me,
11 the discussion about standards in relation to Y7 and Q12
12 is futile because there is no standard that changes a
13 non-identical print into an identification.

14 (Slide 181) If this mistake is not acknowledged by
15 the profession in Scotland, then my worry is that there
16 will never be mistakes that you can prove in the future.

17 These are two really bad ones and they are acknowledged
18 by the profession. Then I stop. The most worrying

19 aspect is that the wrong lessons are learnt. There are
20 people here in Scotland that have learned nothing from

21 it. This will inevitably have long-term negative

22 effects on fingerprints as an instrument in fact-finding

23 and assisting justice and the truth. To me, this

24 fingerprint should be debated in the fingerprint

25 profession in Scotland. Only the science should rule

1 the science, nothing else. No police officer in charge,
2 no management: the science should rule the science.
3 That's why I'm here. We should discuss this print. We
4 cannot avoid it. We should learn lessons from how the
5 FBI handled the Mayfield case. They had an in-depth
6 investigation, they acknowledged the mistake, they
7 learned from it, they changed their procedures and that
8 is how it should be done and that's why I'm here.

9 Thanks for your attention.

10 THE CHAIRMAN: Thank you.

11 **Examined by MR MOYNIHAN**

12 Q. Mr Zeelenberg, I want to go back to some more elementary
13 questions and to ask you to comment, please, and then
14 give some assistance. If you don't understand anything
15 that I say, please just indicate because it will be my
16 fault without question.

17 First of all, if I start at the most elementary
18 level, would I be correct in understanding that the
19 conclusion reached by a Fingerprint Examiner in relation
20 to an individual fingerprint is to be properly regarded
21 as a matter of personal opinion, albeit informed by
22 skill -- personal opinion rather than an object of fact?

23 A. Yes, that's true. We call it an informed opinion but it
24 also depends of course on the level of information we
25 are looking at. If I might explain, if we have a

1 ten-print search and we look at ten fingers and we
2 compare them and if we then say that this is the donor
3 of this fingerprint, it cannot be disputed. I could say
4 my mother-in-law could do it because it's an
5 overwhelming amount of information that you cannot
6 ignore it. Whether this makes it scientific I don't
7 know, but it makes it certain.

8 The point with fingerprint identification with marks
9 is the question is not is it reliable -- the basic
10 question is how much is enough to come to this
11 conclusion but it is an informed opinion about the
12 origin or the attribution of source who has deposited
13 the fingerprint. Yes, that's true.

14 Q. If I just follow your answer on, you mentioned that with
15 the SWIGFAST paper, there was a question of the print
16 requiring or the details requiring to be demonstrable.
17 I think you have covered that already in what you have
18 said today at page 101 of the transcript.

19 What I also wanted to discuss with you was the
20 question of permanence.

21 A. Yes.

22 Q. The features, barring a scar on the finger, the
23 characteristics that form the fingerprint are understood
24 to be constant through life, yes?

25 A. Yes.

1 Q. SWIGFAST speaks of not just demonstrability but also
2 that the characteristics must be reproducible. What
3 does that actually mean?

4 A. Here's a misunderstanding. The specific word
5 "demonstrability" is what I added in. I think I did try
6 to say that. But of course it is a general requirement
7 if you go to the further procedures, yes, you must be
8 able to demonstrate it.

9 Reproducibility is more looking at the fact that if
10 you repeat the whole process, the outcome should be the
11 same and that's more faces towards ACE-V and
12 verification. So if it is verified, then it's also
13 reproducible.

14 Q. I am grateful to you because that assists.
15 Reproducibility has got nothing to do with the
16 individual characteristics?

17 A. No.

18 Q. It rather is the conclusion of the officers?

19 A. Yes.

20 Q. I will come to that later. Forget reproducibility,
21 though, and carry on with the particular theme that I
22 wanted to ask you about. On any one human finger, the
23 features are constant over time barring injury.
24 However, does the discipline of fingerprinting have to
25 allow for the fact that when a comparison has been made,

1 what the officer is looking at is in fact an
2 illustration or an impression -- if that's the correct
3 word -- an impression of the fingerprint? By
4 "impression", what I mean is it is not literally a
5 constant image of what's on the finger but rather can be
6 the subject of very subtle and indeed wide-ranging
7 variations?

8 A. That is definitely true. It's kind of confusing. When
9 you talk the science of fingerprints and when we say
10 that its uniqueness in permanence, in effect we're
11 talking about the finger itself. You are right in
12 saying that when we looked at fingerprints we are
13 looking at one type of representation of it. That's
14 true and these representations may vary even between --
15 we have seen it already -- rolled impressions and plain
16 impressions. I showed you two inked impressions in
17 which there were ending ridges and in the one other one
18 it was a bifurcation seemingly. So there is always some
19 time of variation.

20 But what does not change is the sequence of the
21 events if you take them together. If you look at the
22 clusters and you look at the relationships and the
23 in-between ridge counts, that will always be the same.

24 Q. I happen to have an example which I have used earlier
25 that I think makes this point for me. If I could bring

1 up for you, please, an image that was used on the first
2 day of this particular chapter of evidence, FI2209.01
3 and 02. I have brought up two images of two inked
4 impressions of Shirley McKie.

5 A. Yes.

6 Q. Do you recognise the areas that I have highlighted with
7 the red circles?

8 A. Yes, I do, yes.

9 Q. At least for me, because I think in terms of SCRO
10 numbering, these are the areas that SCRO number as 4.

11 A. Yes.

12 Q. The lower of the two related bifurcations, the lower one
13 being 4 leading up to the higher one 5.

14 A. Yes.

15 Q. On the right is an inked plain impression with a detail
16 and on the left is a rolled impression. I understand
17 these to be the same corresponding areas.

18 A. Yes.

19 Q. Do you accept that?

20 A. Yes.

21 Q. To some extent, you have already covered this in your
22 own evidence, but when you look at the inked plain
23 impression on the right, what would your own preferred
24 interpretation be of the characteristic that is in the
25 red circle?

1 A. Without looking at the left one, I would prefer to say
2 or to assume that it is an ending ridge but I must add
3 you are never certain. But if I look at the ridges
4 adjacent to it, they seem to follow their course
5 straight and the other one is kind of more stopping, the
6 lines above it are not really moving towards each other
7 that much. My best guess would be that it is an ending
8 ridge, but we are never certain.

9 Q. Accordingly, if the image on the right is construed as
10 an ending ridge, you would therefore, I think I would
11 understand, see the rolled impression in entirely the
12 same way, as an ending ridge?

13 A. Yes, probably. I must say that the deposit on the right
14 side there seems to be a lot of inking just on that
15 spot. There may be some extra pressure. So this can
16 make an ending ridge to appear connecting -- this can
17 also happen by dirt or by ink -- appear to be
18 connecting, but actually it could also be in the finger
19 that it is connected but just a little bit lower. So
20 not printing in that effect.

21 There are also people that are able to see that if
22 you roll from left to right or from right to left that
23 sometimes the ending ridge is moved to the other side
24 and if you do it the other way round, it moves to the
25 opposite side. I'm not that able but there's people

1 that seem to be able to look at it that way.

2 Q. If I understand correctly, you were reading from for us

3 I think it's the SWIGFAST document which speaks in terms

4 of an "event"?

5 A. Yes.

6 Q. An "event" could be a collective term that would cover a

7 variety of characteristics?

8 A. Exactly. I think that we have done the same in the

9 Interpol Working Group. I was an advocate of that

10 because we have been talking way too long about

11 bifurcation, ending ridges, deviated breaks, do we call

12 it a short ridge, do we call it whatever. I'm advocate

13 of saying it is an event. A disturbance of the regular

14 is an event and all the others are formations of one or

15 two or three events.

16 Q. What I wanted to ask you to comment on, because this is

17 just there as an illustration of a point, I might

18 myself, as a completely lay person, simply choose to

19 avoid this challenge and debate about whether this

20 feature is a ridge ending or a bifurcation, avoid it by

21 simply calling it an event?

22 A. True.

23 Q. I could then have all experts on the range of opinion

24 just agree there is an event there. Are there occasions

25 when it is necessary for the expert to actually commit

1 himself to the precise nature of the event in that
2 location?
3 A. Basically for checking the sequence that is not so much
4 of importance. As long as if I say this is not an
5 ending ridge but a bifurcation on that side, if I'm
6 checking the relationships I must keep in mind that I
7 first said it has to be on this side and that I not
8 change it when I am counting on the other side. So then
9 I have to be consistent in that.

10 However, if we are studying and analysing latents,
11 it is beneficial to look at a detail as I already showed
12 you saying, "Listen, this is a real bifurcation I'm
13 quite certain of it, the event looks like this and I
14 would like to see it back in the reference print as I
15 determined it". That gives confidence.

16 Those small things that was also talked about, the
17 hawk-eye, the Rosetta characteristic that makes a
18 strange bend downwards. I would see that, I would note
19 that in my analysis and I will find it very nice if I
20 look in the reference print, "Hey, this gives
21 confirmation. This really looks like what I'm looking
22 for" and if it's not, it should be kind of a warning
23 sign, you cannot ignore everything. But the basic
24 thing, yes, you are right the basic fabric is the
25 locations of the Second Level Detail.

1 Q. If I can move from what we have just been talking about
2 just now to another example, I will take you to the SCRO
3 charting of Y7 to follow this particular point if you
4 allow me just a moment.

5 THE CHAIRMAN: Would it be helpful if we took the short
6 break now?

7 MR MOYNIHAN: We can, sir.

8 THE CHAIRMAN: I think it might be while you are finding it.
9 We will resume at 3.00.

10 **(2.50 pm)**

11 **(A short break)**

12 **(3.00 pm)**

13 MR MOYNIHAN: I was trying to take a temperature in the
14 room. I have been trying to check if I don't ask some
15 questions this afternoon if I still have a realistic
16 expectation of finishing Mr Zeelenberg tomorrow
17 afternoon so that I don't detain him any longer. I have
18 a rough impression that that is perhaps achievable. I
19 am conscious that Mr Zeelenberg has had a very powerful
20 stint and it would also probably assist me if we just
21 simply --

22 THE CHAIRMAN: It's a lot to absorb and a lot for you to
23 demonstrate in a day. I am obviously very anxious, as I
24 am sure you are, that we finish you tomorrow. But if I
25 have reasonable assurance that tomorrow will allow

1 Mr Zeelenberg to be free, then I am quite content to
2 stop today at this point.

3 Mr Holmes, it is likely that you will take longer
4 than Mr Smith.

5 MR SMITH: Sir, I can say at this stage I have no questions
6 for Mr Zeelenberg. It may be that some of the questions
7 raised by Mr Holmes we will --

8 THE CHAIRMAN: What about Miss Grahame? Are you
9 anticipating time?

10 MISS GRAHAME: We had intimated a line of cross to my
11 learned friend Mr Moynihan last week and I understand he
12 is adopting that as part of his examination. So I
13 wouldn't anticipate having any questions.

14 THE CHAIRMAN: Certainly between Mr Holmes and Mr Moynihan
15 then as to whether they both can be reasonably certain
16 that any questions will not take longer than tomorrow.
17 It is a bit unfair to ask you at this stage.

18 MR HOLMES: Given the discussions that I have had with
19 Mr Moynihan already, subject to anything my clients
20 might raise with me flowing from Mr Zeelenberg's
21 presentation this morning, I think we are reasonably
22 confident we can finish tomorrow.

23 THE CHAIRMAN: It is important that the way that the Inquiry
24 is proceeding is that those that you represent will have
25 an opportunity to give their response and that is

1 really, I think, the best way of working and that is the
2 way we will be. The fact that there isn't long
3 cross-examination should not be interpreted in any way
4 that any of the Core Participants accept the evidence.
5 I understand that but I think it is important that it
6 should be more widely understood that perhaps silence
7 should not be taken as acceptance.

8 On that point then, we will rise. Thank you very
9 much for the time you have given us today and we will
10 sit again at 10.00 tomorrow morning.

11 **(3.05 pm)**

12 **(Adjourned until 10.00 am the following morning)**

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